United States Air Force

Environmental Restoration Program

Eielson Air Force Base, Alaska

MCMXLVII

Operable Units 3, 4, and 5
Record of Decision

FINAL

September 1995

Eielson Air Force Base
Operable Units 3, 4, and 5
Record of Decision

Declaration of the Record of Decision

Site Name and Location

Operable Units 3, 4, and 5
Eielson Air Force Base, Alaska

Statement of Basis and Purpose

This decision document presents the selected remedial actions and the no action decisions for Operable Units 3, 4, and 5 at Eielson Air Force Base, Alaska, chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), the May 1991 Federal Facility Agreement Under CERCLA Section 120 entered into by the U.S. Air Force, the U.S. Environmental Protection Agency, and the State of Alaska, and to the extent practicable, the National Contingency Plan. This document also presents the decision that no further action is required for three other source areas at Eielson AFB. This decision is based on the administrative record for this site.

The State of Alaska concurs with the selected remedies and the no action decisions.

Assessment of the Source Areas

OUs 3, 4, and 5 consist of 20 source areas that have been combined because of commonalities in contamination. These source areas include solvent- and fuel-spill sites, fuel storage tanks, drum storage areas, asphalt-cement mixing areas, landfills, and a fire-training area.

The OU 3 source areas are

• DP44	Battery Shop Leach Field
• WP45/SS57	Photo Lab/Fire Station Parking Lot
• ST56	Engineer Hill Spill Site
• SS61	Vehicle Maintenance Building 3213

The OU 4 source areas are

• DP25	E-6 Fuel Storage Tank Area
• ST27	E-11 Fuel Storage Tank Area
• WP33	Wastewater Plant Effluent Infiltration Pond
• SS35	Asphalt Mixing and Drum Burial Area
• SS36	Drum Storage Area
• SS37	Drum Storage Area
• SS39/SS63	Asphalt Lake/Asphalt Lake Spill Site

- ST58 Old Quartermaster Service Station Site
- SS64 Transportation Maintenance Drum Storage Site

The OU 5 source areas are

- LF02 Old Base Landfill
- LF03/FT09 Inactive Base Landfill/Fire Training Area
- LF04 Old Army Landfill and Explosive Ordnance Disposal Area
- LF06 Old Landfill

Three additional source areas were assessed, using a screening process, and are included in this report.

No Further Action Under CERCLA

Ten source areas (ST27, WP33, SS36, SS37, SS39/SS63, SS64, LF02, LF04, and LF06) will receive no further remedial action under CERCLA because they present little risk to human health and the environment. The no further action determination was based on a remedial investigation/baseline risk assessment and a sitewide draft ecological risk assessment. Although no further action is required, the groundwater at these source areas will continue to be monitored as part of the Sitewide Program to confirm the results of the remedial investigation. Under a separate federal program, the Air Force has submitted a closure plan for the ordnance area at LF04 under the Resource Conservation and Recovery Act (RCRA), Section 3008(a).

In addition, source areas LF01, WP32, and DP55 will receive no further action because, based on existing information, they do not present an unacceptable risk to human health and the environment. Data from these sites were compared to risk-based screening criteria (e.g., maximum contaminant levels [MCLs], EPA guidance documents) to evaluate the hazards. If contamination at a site was below the screening level or the affected pathway was incomplete, no further action was required. These three source areas meet these requirements and, therefore, require no further action under CERCLA.

Limited Action

Groundwater constituents in five of the source areas (WP45/SS57, ST56, SS61, and DP25) exceed maximum contaminant levels. These areas are isolated, have no significant contamination or inaccessible residual contamination in the vadose zone, and are characterized by a stable plume configuration. In the case of DP25, the plume is limited to an active tank farm. Action for these five source areas is limited to continued groundwater monitoring and restrictions on the use of the groundwater.

Active Remediation

The five source areas, DP44, SS35, ST58, and LF03/FT09, will be actively remediated as described in the following section.

In summary, actual or threatened releases and exposure of people to hazardous substances from DP44, WP45/SS57, ST56, SS61, DP25, SS35, ST58, and LF03/FT09 within OUs 3, 4, and 5, if not addressed by implementing the response action selected in this record of decision, may present a substantial endangerment to public health, welfare, or the environment.

Descriptions of Selected Remedies

Selected remedies for the 23 source areas fall into 3 categories: 1) no further action under CERCLA, 2) limited action, and 3) active remediation.

Cleanup alternatives will be implemented using a phased approach, where design data gathering and ongoing monitoring will continue to be evaluated to confirm the appropriateness of the selected remedy or, once a remedy is implemented, to determine the effectiveness of the technology. This phased approach will accommodate needed selected remedy or system modifications.

For source areas where the selected remedy is limited action or active remediation, Air Force directives will restrict the use of groundwater until it meets federal and state standards. The Air Force will monitor the groundwater to evaluate contaminant movement and concentrations until compliance with state and federal regulations is attained.

Source Areas Requiring No Further Action

These 13 source areas (ST27, WP33, SS36, SS37, SS39/SS63, SS64, LF02, LF04, LF06, LF01, WP32, and DP55) will receive no further remedial action under CERCLA because they do not pose an unacceptable risk to human health or the environment. The groundwater at or near these sites will continue to be monitored as part of the Sitewide monitoring program, as appropriate, to verify that contaminant concentrations, if any, remain within acceptable screening levels.

Sources Requiring Limited Action

Five of the source areas (WP45/SS57, ST56, SS61, and DP25) will receive limited action including:

- Institutional controls to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.
- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.
- For groundwater at ST56, wellhead treatment using carbon adsorption or air stripping will be applied, as appropriate, to prevent human exposure to contaminants above regulatory levels.
- If future developments in bioventing technology make implementation practical at DP25, installation of a bioventing system will be re-evaluated at that time.

Active Remediation

Five source areas, DP44, SS35, ST58, and LF03/FT09 will be actively remediated. The major components of the selected remedies for each area are described in the following subsections. The selected remedies for DP44 and ST58 use treatment to address the principal threat of soil contamination that is posing a threat to groundwater through leaching.

DP44 - Battery Shop Leach Field

- Installation of a soil vapor extraction to remove solvent contamination in soil that is posing a threat to groundwater through leaching.

- Institutional controls to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.

- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.

SS35 - Asphalt Mixing and Drum Burial Site

- Installation of a soil cover over the surface soil contamination to prevent direct contact by humans and animals and surface water runoff into Garrison Slough.

- Removal of drums in the future, if it is determined that they are a continuing source of contamination.

- Monitoring of surface water, sediments, and aquatic organisms in this area, as required to verify effectiveness of the cover, and monitoring of the groundwater to verify that levels remain below acceptable screening levels.

ST58 - Old Quartermaster Service Station Site

- Installation of a bioventing system to remove fuels contamination in the soil that poses a threat to groundwater through leaching. This system may include air injection within the upper part of the groundwater table and smear zone to volatilize and promote bioremediation of the contaminants. The system may also include air extraction, if deemed appropriate.

- Institutional controls to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.

- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.

LF03/FT09 - Inactive Base Landfill/Fire Training Area

- For the portion of the landfill where disposal occurred before 1980, RCRA Part 264 is relevant and appropriate. Currently, no groundwater at the edge of the waste management area exceeds regulatory levels; the residual contamination poses a direct contact threat. A cover to address the direct contact threat will be installed and maintained in accordance with relevant and appropriate requirements of Part 264. Groundwater at the landfill will continue to be monitored, as appropriate, to verify that the contaminant concentrations, if any, remain within acceptable screening levels.

- For the portion of the landfill where disposal occurred after 1980, RCRA Part 264 is applicable. The final cover will be constructed to: (1) provide long-term minimization of migration of liquids,

(2) function with minimum maintenance, (3) promote drainage and minimize erosion, (4) accommodate settling and subsidence, and (5) have a permeability less than or equal to the natural subsoils present. Post-closure care, including maintenance and monitoring, will be conducted in accordance with 40 CFR 264.117 and 264.228(b).

- Institutional controls will be implemented to restrict land use. In the event of base closure, any remaining contamination will be addressed in accordance with CERCLA Section 120.

Statutory Determination

The selected remedies protect human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial actions, and are cost effective. The remedies use permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable and satisfy the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because these remedies will result in hazardous substances remaining onsite above health-based levels, reviews will be conducted at DP44, WP45/SS57, ST56, SS61, DP25, SS35, ST58, and LF03/FT09 no less often than every 5 years after the initiation of the remedial action, in accordance with Section 121(c) of CERCLA to ensure the remedies continue to provide adequate protection of human health and the environment.

Signature sheet for the foregoing Record of Decision for the final remedial action for Operable Units 3, 4 and 5 at Eielson Air Force Base, Alaska, between the United States Department of the Air Force and the United States Environmental Protection Agency, with concurrence by the State of Alaska.

JOHN G. LORBER, General, USAF
Commander, Pacific Air Forces

30 Sep 95
Date

Signature and Support Agency Acceptance of the Remedies for OU 3, 4, and 5

KURT FREDRIKSSON
Director of the Division of Spill Prevention and Response
Alaska Department of Environmental Conservation

9-19-95
Date

Signature and Support Agency Acceptance of the Remedies for OU 3, 4, and 5

Chuck Clarke 9/22/95

CHUCK CLARKE
Regional Administrator
Region 10
U.S. Environmental Protection Agency

Date

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Acronyms and Abbreviations

SDD	average daily dose
ADEC	Alaska Department of Environmental Conservation
AFB	Air Force Base
ARAR	applicable or relevant and appropriate requirement
AWQC	ambient water quality criteria
BAT	best available technology
BCT	best conventional technology
BLRA	baseline risk assessment
bls	below land surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CDC	Centers for Disease Prevention and Control
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CI	confidence interval
COE	Corps of Engineers
CRREL	Cold Region Research and Engineering Laboratory
DCE	dichloroethene
DNAPL	dense nonaqueous phase liquid
DO	dissolved oxygen
DP	disposal pit
EOD	explosive ordinance disposal
EPA	Environmental Protection Agency
FC	fecal coliform
FFA	Federal Facility Agreement

FNSB	Fairbanks North Star Borough
FS	feasibility study
FT	fire training area
GC/MS	gas chromatograph/mass spectrometer
Hasmat	hazardous material
HEAST	Health Effects Assessment Summary Table
HQ	hazard quotient
HS	headspace analysis
Hwy	highway
ICP	inductively coupled plasma
IEUBK	Integrated Exposure Uptake Kinetics
IRIS	Integrated Risk Information System
IRP	Installation Restoration Program
LF	landfill
LNAPL	light nonaqueous phase liquid
MCL	maximum containment level
MCLG	MCL goals
MFT	Membrane Filter Technique
MOGAS	motor gasoline
MPN	maximum probable number
MS	mass spectrometer
MSE	mean square error
MSL	mean sea level
NA	Not Applicable
NCP	National Contingency Plan

ND	Not Detected
NPL	National Priorities List
NST	no sample taken
NTU	nephelometric turbidity units
OSHA	Occupational Safety and Health Administration
OU	operable unit
OVM	organic vapor meter
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	polychloroethylene
PEL	permissible exposure limit
PID	photoionization detection
PNL	Pacific Northwest Laboratory
POL	petroleum, oil, and lubricant
ppm	parts per million
PRG	preliminary remediation goal
QA	quality assurance
RAB	Restoration Advisory Board
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RDX	cyclonite
RfD	reference dose
RI/FS	remedial investigation/feasibility study
RME	reasonable maximum exposure
ROD	Record of Decision

SARA	Superfund Amendments and Reauthorization Act
SB	soil boring
SCS	Soil Conservation Service
SER	source evaluation report
SF	slope factor
SS	surface spill
ST	storage tank
SVE	soil vapor extraction
SVOC	semi-volatile organic compound
SWL	seasonal water level
TAH	TBD
TBC	To Be Considered
TCA	trichloroethane
TCE	trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TDS	total dissolved solids
TRC	Technical Review Committee
TNT	trinitrotoulene
TOC	total organic carbon
TOX	total organic halides
TP	test pit
TPH	total petroleum hydrocarbon
UBK	update biokenetic model
UWRL	Utah Water Research Laboratory
VOC	volatile organic compound
WP	waste pond

Eielson Air Force Base
Operable Units 3, 4, and 5
Record of Decision

Decision Summary

1.0 Site Name, Location, and Description

Eielson Air Force Base (AFB) covers approximately 8000 hectares (19,700 acres), located along the Richardson Highway within the Fairbanks North Star Borough (FNSB) approximately 39 km (24 mi) southeast of Fairbanks and 16 km (10 mi) southeast of the city of North Pole, Alaska (Figure 1.1). Approximately 1477 hectares (3650 acres) are improved or partially improved and the remaining land encompasses forest, wetlands, lakes, and ponds. The base is bounded on the east and south by Fort Wainwright, a U.S. Army installation, and on the west and north by private and public land. The public and private land adjacent to the base is zoned for general use. The approximate population of the FNSB, Fairbanks, and North Pole is 82,000, 32,000, and 1600, respectively. Other communities near Eielson AFB include Moose Creek, which abuts the northern border of the base, and the Salcha area, which abuts the southern border of the base.

Eielson AFB is a major employer in the Fairbanks area. The base employs approximately 3400 military personnel and 500 civilians. The total residential population of Eielson AFB is 5132. Residential and occupational populations are primarily concentrated in the developed portion of the base. The area is active in ongoing base functions, including work, school, and recreational activities. The base contains three elementary schools, one junior-senior high school, a child care center, and one medical-dental clinic.

The base is located in the Tanana River Valley. Most of the base has been constructed on fill material. The developed portion of the base's topography is generally flat and somewhat featureless with elevations averaging about 168 m (550 ft) above mean sea level. The undeveloped east and northeast sides of the base are as high as 343 m (1125 ft) above mean sea level. Two-thirds of the base is covered with soils containing discontinuous permafrost.

Significant wildlife frequents Eielson AFB, and the base supports a variety of recreational and hunting opportunities. No threatened or endangered species live on the base.

The developed portion of the base is underlain by a shallow, unconfined aquifer comprised of 61 to 91 m (200 to 300 ft) of loose alluvial sands and gravel overlying relatively low-permeability bedrock. The aquifer is characterized by high transmissivities and relatively flat groundwater gradients. Groundwater at the base is generally encountered at approximately 2.4 m (8 ft) below grade with seasonal fluctuations up to 0.5 m (1.5 ft). The groundwater generally flows to the north-northwest,

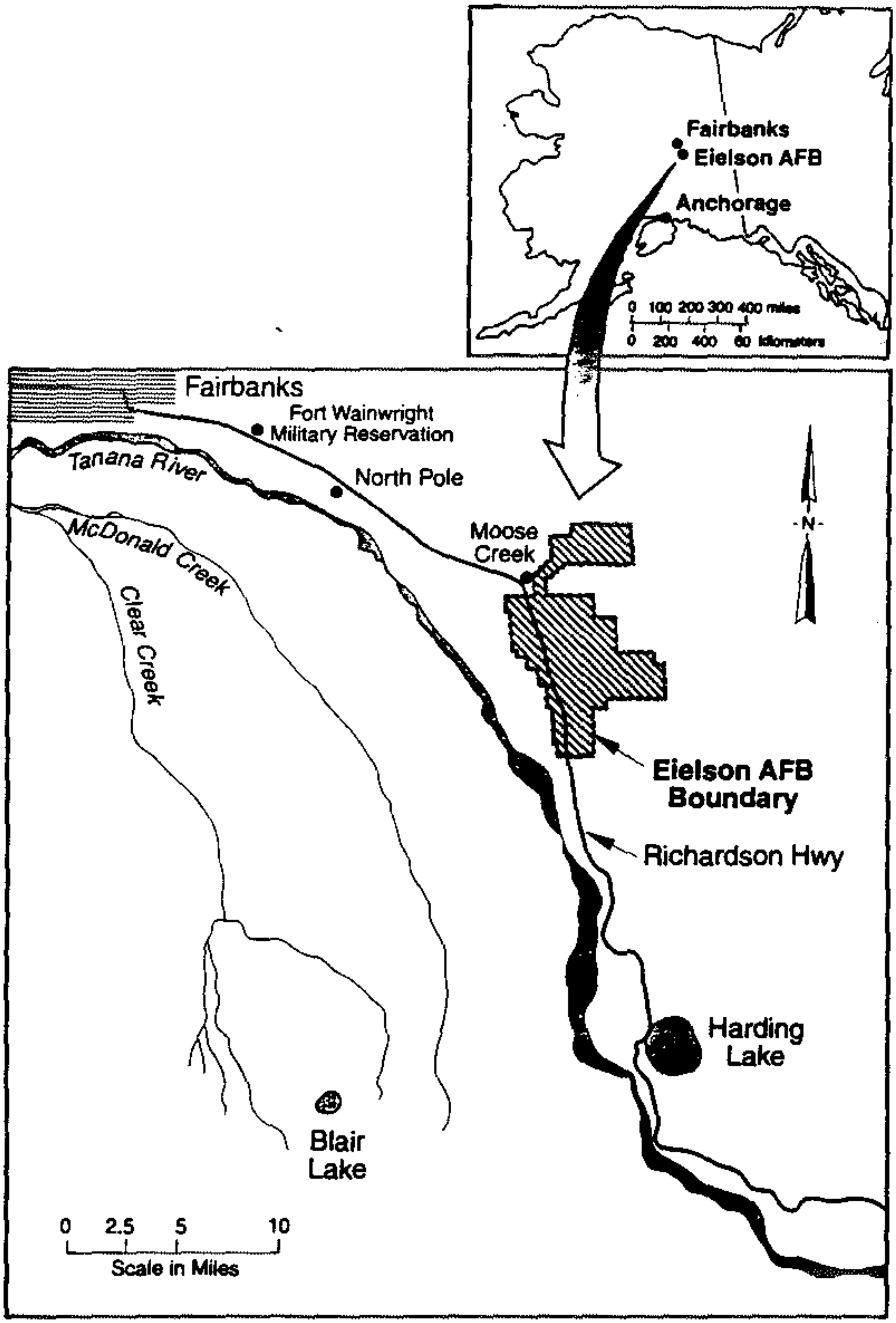

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Figure 1.1. Map of Eielson Air Force Base

with the direction of the flow locally influenced by surface water bodies (such as Garrison Slough and Hardfill Lake) and groundwater extraction from the base supply wells. Groundwater is the only source of potable water at the base and in the nearby communities. Potable water in the main base system is treated to remove iron and sulfide. Groundwater is the principal source for industrial, domestic, agricultural, and fire-fighting purposes.

2.0 Site History and Enforcement Activities

Eielson AFB was established in 1944, and military operations have continued to the present. During most of its history, Eielson AFB was a tanker base for midair refueling of strategic bombers. The current mission of the base is to train and equip personnel for close air support of ground troops in an arctic environment. Eielson AFB operations include industrial areas, aircraft maintenance and operations, an active runway and associated facilities, administrative offices, and residential and recreational facilities.

In carrying out its defense mission, the soils and groundwater at the base have been contaminated from the storage and handling of fuels and solvents, plus the operation of landfills. Initially, this contamination was evaluated under the U.S. Air Force Installation Restoration Program (IRP). The 4-phase IRP was initiated in 1982 with a Phase 1 records search to identify past disposal sites containing contaminants that may pose a hazard to human health or the environment. Under the IRP, the U.S. Air Force identified potential areas of contamination at Eielson AFB. Potential source areas included old landfills, storage and disposal areas, fueling system leaks, and spill areas.

Eielson AFB was listed on the National Priorities List (NPL) (54 FR 48184) on November 21, 1989 by the U.S. Environmental Protection Agency (EPA). This listing designated the facility as a federal Superfund site subject to the remedial response requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

In May 1991, the U.S. Air Force, the State of Alaska, and EPA entered into the Federal Facility Agreement (FFA) Under CERCLA Section 120 (EPA et al. 1990), which established the procedural framework and schedule for developing, implementing, and monitoring CERCLA response actions. An additional goal of the FFA was to integrate the U.S. Air Force's CERCLA response obligations and Resource Conservation and Recovery Act (RCRA) corrective action obligations. Under the FFA, potential source areas were placed in one of six operable units (OUs), based on similar contaminant and environmental characteristics, or were included for evaluation under a source evaluation report (SER). Source areas in OUs 3, 4, and 5 and selected SER sites are shown in Figure 2.1.

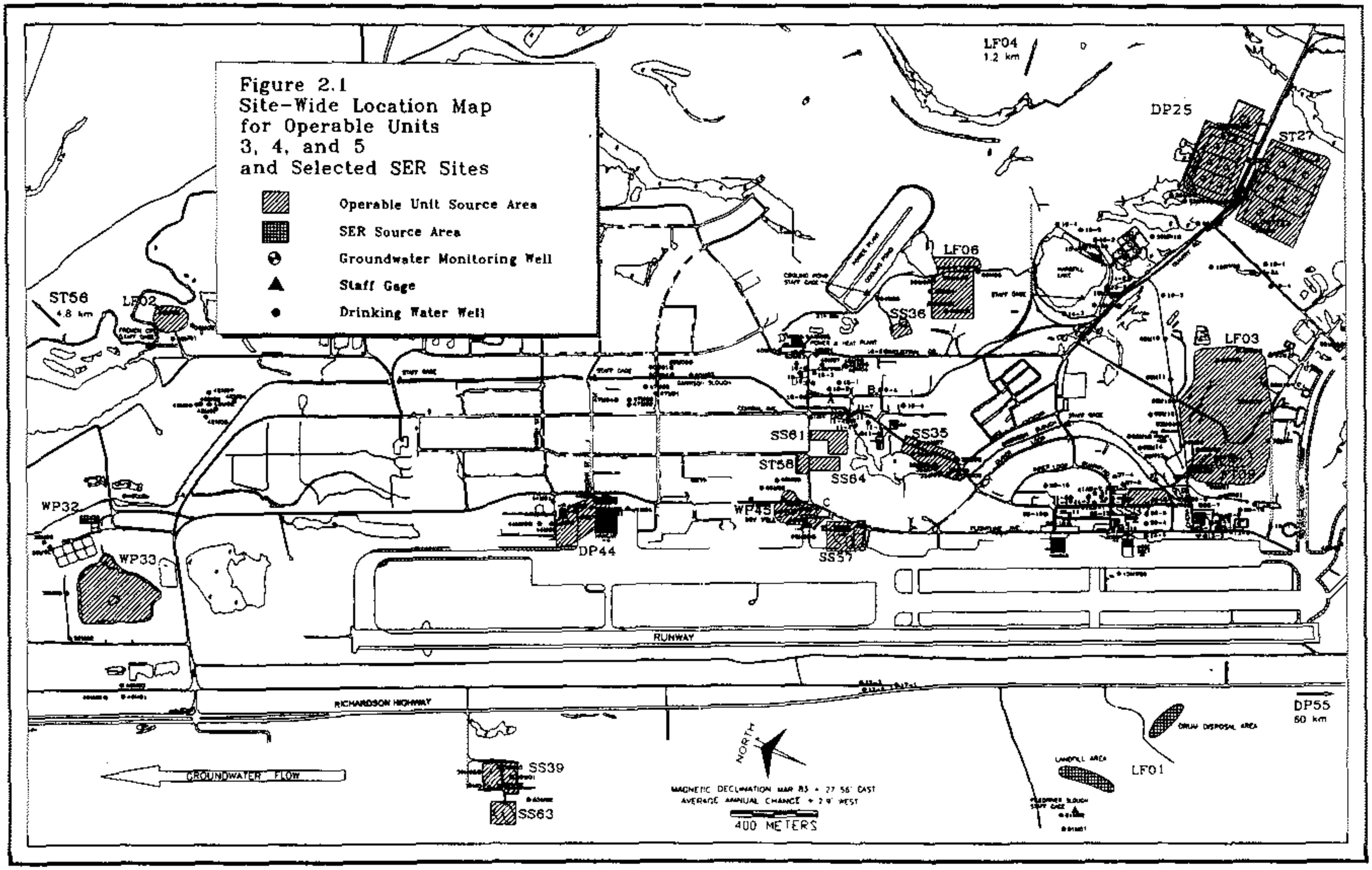

Figure 2.1
Site-Wide Location Map
for Operable Units
3, 4, and 5
and Selected SER Sites

Figure 2.1.

3.0 Highlights of Community Participation

After the signing the FFA (EPA et al. 1990) with the State of Alaska and the EPA, and the listing of Eielson AFB on the NPL, the U.S. Air Force began its Superfund clean up program. As part of this program, in accordance with CERCLA Sections 113(k)(2)(B)(i-v) and 117, an extensive community relations program was initiated to involve the community in the decision-making process.

The community relations staff interviewed 40 local residents and community leaders to develop plans to inform residents about the clean up activity at Eielson AFB. Follow-up interviews and questionnaires of more than 100 residents helped revise the community relations plan. An environmental clean up newsletter was created and mailed to anyone who wished to be on the mailing list. Fact sheets were prepared on various topics related to the clean up operations. Several times a year, articles describing significant clean up events were released to the base newspaper *Goldpanner* and the *Fairbanks Daily News-Miner*. All of these efforts are designed to involve the community in the clean up process.

The remedial investigation/feasibility study (RI/FS) and baseline risk assessment (U.S. Air Force 1995a, 1995b, 1995c) and the Proposed Plan for Operable Units 3, 4, 5 and Other Areas of Eielson AFB (U.S. Air Force 1995d) were released to the public in May 1995. These documents were made available to the public in the administrative record and at an information repository maintained at the Elmer E. Rasmusen Library at the University of Alaska, Fairbanks. The selected remedies presented in this record of decision (ROD) are based on information contained in the Administrative Record.

The public comment period for the Proposed Plan was from May 18 to June 17, 1995. Comments received during this period are summarized in the Responsiveness Summary in an attachment at the end of this ROD. Five verbal comments were received during the public comment period. No written comments were received.

The public comment period, public meeting, and proposed plan for OUs 3, 4, and 5 were advertised four times in two local newspapers. The advertisements appeared in the *Fairbanks Daily News-Miner* on May 18 and 30, 1995 and in the *North Pole Independent* on May 19 and 26, 1995. In addition, more than 3500 copies of this notice were added as an insert in the base newspaper, *Goldpanner*, and delivered to every home in the Eielson AFB housing area on May 19. Proposed plans were mailed to more than 150 people on the clean up mailing list on May 16. Flyers announcing the public meeting were placed on store bulletin boards in the Moose Creek and North Pole communities.

A public meeting was held on May 31, 1995 in North Pole. Approximately 15 people attended the meeting, including representatives of the Air Force, EPA, ADEC, and the public.

4.0 Scope and Role of Operable Units

As with many Superfund sites, the problems at Eielson AFB are complex. Consequently, the FFA (EPA et al. 1990) divided the potential source areas at Eielson AFB into six OUs and three SER groups, based on common characteristics and contaminants. A final sitewide study is being conducted on human health and ecological risk.

The grouping of potential source areas into OUs was based on similar source characteristics or contaminants. The OUs are:

OU 1	Petroleum, Oil, and Lubricant (POL) Contamination
OU 2	POL Contamination
OU 3	Solvent Contamination
OU 4	Land Disposal of Fuel Tank Sludge, Drums, and Asphalt
OU 5	Landfills and Fire Training Area
OU 6	Ski Lodge Well Contamination.

An RI/FS was completed for OU 2 in November 1993 and for OU 1 and OU 6 in May 1994. A record of decision has been signed for each of these OUs. The sitewide OU is currently in the proposed plan stage.

This ROD addresses OUs 3, 4, and 5. Each of these OUs contains various source areas.

Five source areas with solvent contamination were designated under OU 3:

DP44	Battery Shop Leach Field
WP45	Photo Lab
SS57	Fire Station Parking Lot
ST56	Engineer Hill Spill Site
SS61	Vehicle Maintenance Shop

Ten source areas that had land disposal of fuel tank sludge, drums, and asphalt were designated under OU 4:

DP25	E-6 Fuel Storage Tank Area
ST27	E-11 Fuel Storage Tank Area
WP33	Effluent Infiltration Pond
SS35	Asphalt Mixing and Drum Burial Area
SS36	Drum Storage Area
SS37	Drum Storage Area
SS39	Asphalt Lake
SS63	Asphalt Lake Spill Site
ST58	Old Quartermaster Service Station
SS64	Transportation Maintenance Drum Storage Site

Five source areas that are landfills were designated under OU 5:

LF02	Old Base Landfill
LF03/FT09	Inactive Base Landfill/Fire Training Area
LF04	Old Army Landfill
LF06	Old Landfill

The source areas in OUs 3, 4, and 5 contain soils contaminated with solvents, metals, and petroleum products at or near the source of contamination. Most of the contamination is in subsurface soils and the shallow groundwater. Much of the groundwater contamination is believed to originate from the sources in the soils through infiltration from precipitation. These 20 source areas pose various risks to human health because of the possibility for ingestion, inhalation, and dermal contact with contaminated soil and groundwater. The threat also exists for the environment with further migration of contaminants into the groundwater from contaminated soils and petroleum products floating on top of the water table.

The purpose of this ROD is to prevent current or future exposure to the contaminated groundwater and soils, to reduce further contaminant migration into the groundwater, and to remediate groundwater and soils.

4.1 Source Evaluation Areas

Through the source evaluation process (SER), 31 other source areas were evaluated. Based on the available information, these areas were believed to have a low probability of posing a significant risk to human health and the environment. Of those source areas, 21 were addressed in the OU 2 ROD and recorded for no further action. Seven of the source areas required further investigation; they were removed from the SER process and included in OUs 3, 4, or 5. The remaining three source areas that were included in this process do not pose an unacceptable risk to human health and the environment, and are, therefore, recorded in this ROD for no further action.

This group of SER sites was evaluated in a screening assessment to determine if each source poses a risk to human health or the environment. The screening of contaminants compared the maximum concentration of each contaminant detected in the source area to a risk-based concentration. This concentration was calculated using a conservative target risk that was based on EPA standard default exposure factors for a residential scenario. The target risks used for this conservative screening were chosen based on the lower end of the 10^{-4} to 10^{-6} risk range specified in the NCP. The assumption is: if no single sample exceeds a concentration representing a human risk concern, total exposure to the contaminant from the source area will not be of concern. Specifically, the area required no further action, if the maximum concentration detected was $\leq 10^{-6}$ cancer risk for water, $\leq 10^{-7}$ cancer risk for soil, and ≤ 0.1 hazard quotient.

In addition, soil contaminant concentrations were evaluated to determine the potential for contributing to groundwater contamination. Soil screening levels for the soil-to-groundwater pathway were determined, based on fate and transport modeling, in order to prevent exceeding the drinking water standards in the groundwater directly downgradient of the source area.

All of the sites were found to contain contaminants below screening levels (that is, maximum contaminant levels [MCLs], EPA Region 10 guidance) or the affected pathway was incomplete; therefore, no further action was required. These three sites are LF01, WP32, and DP55 (Figure 2.1).

The groundwater beneath Eielson AFB will continue to be monitored as part of the sitewide groundwater monitoring program. If it is determined that contaminant releases to the groundwater are originating from any areas recommended for no further action, the potential source of contamination will be reevaluated. This reevaluation may include additional sampling or source characterization.

A brief description and evaluation of each of the three no-action areas follows:

- **LF01 (Original Base Landfill and Drum Storage Area)**. The site is located between the Richardson Highway and Piledriver Slough. LF01 includes an abandoned landfill and a drum disposal area. The landfill was used throughout the 1950s and received domestic and base operations wastes, including garbage, lumber, metal, construction debris, and empty cans. Solvent wastes, waste oils, and paint residue were also reportedly disposed in the landfill. The landfill was covered with a soil cap in 1960, but some refuse is visible. No historical record of use exists for the drum storage area. In 1992, approximately 2500 rusting, open, and generally empty drums were removed from the area and disposed in the borough landfill. Several drums found to contain liquids were removed in accordance with appropriate laws and regulations by base Hazmat (hazardous material) personnel.

  The limited field investigation of this area included drilling two groundwater monitoring wells (one at the landfill and one at the drum storage area), digging seven soil pits down to groundwater at the drum storage area, sampling surface soils in a surface drainage that drains from the landfill to Piledriver Slough, and monitoring three existing wells near the landfill. Soil and groundwater samples were collected and analyzed for volatile and semivolatile organic compounds, pesticides, herbicides, and metals. Other than metals, none of the other compounds were detected in soil and groundwater samples. Metal concentrations did not exceed background levels. Site investigations and analyses of soil, groundwater, surface water, and sediment show no contamination that poses an unacceptable risk to human health or the environment.

- **WP32 (Wastewater Plant Spill Ponds)**. This source area consists of two shallow earthen basins to which influent for the Wastewater Treatment Plant is diverted during wastewater incidents to avoid plant upsets or manage lagoon failures. The basins are normally dry. WP32 has been in use since 1970 for emergency disposal of wastewater. Major discharges include a one-time disposal of 5000 gallons of silver-nitrate-contaminated water. Water contaminated with an unknown industrial chemical or solvent was discharged in 1975. This area is located within an area used for treatment of base wastewater. Current operation of this area as a spill pond is regulated under a State of Alaska wastewater disposal permit.

  The limited field investigation of this area included digging two soil pits to groundwater, sampling soil and groundwater at the bottom of the pits, and sampling existing groundwater monitoring wells in the area. The samples were analyzed for volatile and semivolatile organic compounds, pesticides, and metals. Of all of the analyses, only one water sample from the bottom of a test pit contained a pesticide (chlordane) in excess of screening levels. Because the sample contained significant quantities of sediment, this sample was not considered representative of groundwater in the area. Site investigations and analyses of standing water, basin sediments, and groundwater show no contamination that poses an unacceptable risk to human health or the environment. Future use of this area will be addressed within a wastewater disposal permit from the State of Alaska.

- **DP55 (Birch Lake Recreation Area).** This source area is a refuse pile adjacent to the maintenance yard at the Birch Lake Recreation Area administered by Eielson AFB. The refuse area has been used in the past to dispose of wastes generated in the maintenance and operation of the recreation area. This area has always been used to support the Birch Lake recreational mission. Minor amounts of fuel and vehicle maintenance supplies have been stored and disposed at the yard or in the surrounding undeveloped areas. Based on historical site use, materials used at the area might be small volumes of insecticides for mosquito control; solvents and degreasers for small motor maintenance and repair; paint, varnish, and wood preservatives; and small quantities of household refuse associated with the campground and picnic area. Based on the available groundwater data, site visits, and interviews, no contamination exists at DP55 that poses an unacceptable risk to human health or the environment.

5.0 Summary of OU 3, 4, and 5 Site Characteristics

Since 1988, contamination at the OU 3, 4, and 5 source areas has been investigated in detail. The sites were characterized as part of the Air Force IRP (SAIC 1989a, 1989b; HLA[a] 1989, 1990). A field sampling program was undertaken in 1992, designed to fill data gaps in the understanding of the 20 source areas based on the previous investigations. The 1992 field investigations were conducted, as described, in the Operable Units 3, 4, and 5 Management Plan (U.S. Air Force 1992). Additional investigations were carried out in 1993 and 1994 to further refine the conceptual models for selected source areas. Environmental samples were collected and analyzed, including soil, sediment, surface water, and groundwater samples. The analytes of interest list was comprehensive and included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), anions, and metals. The analytes and media sampled (groundwater, surface water, and soil) are summarized for each source area in the following text, and in Tables 5.1 through 5.15. In addition, a summary list of all soil sample analyses and most recent groundwater analyses is located in Appendix A.

The results of the ecological sampling are included in a Ecological Risk Assessment as part of the sitewide RI/FS program. The Operable Units 3, 4, and 5 Remedial Investigation document (U.S. Air Force 1995a) characterizes the source areas, so that risks to human health and the environment could be assessed in the Operable Units 3, 4, and 5 Baseline Risk Assessment (U.S. Air Force 1995b) and effective remedial alternatives could be developed in the Operable Units 3, 4, and 5 Feasibility Study (U.S. Air Force 1995c).

5.1 Contaminants of Concern Identified

The concentrations of the detected analytes were screened to assess their toxicological significance. Contaminants of potential concern were identified, based on the screening method suggested in the Supplemental Guidance for Superfund Risk Assessments in Region 10 (EPA 1991a). This method, called the *risk-based screening approach*, compares the maximum concentration levels detected at each source area to a risk-based screening concentration. The criteria for the screening, as given in the Region 10 supplemental guidance, are as follows:

- List the maximum concentration of each chemical in each medium for each source area.
- Compare the maximum concentration to risk-based screening concentration.
- Eliminate the chemical if
    - the maximum detection for water $\leq 10^{-6}$ cancer risk screening value and ≤ 0.1 Hazard Quotient (HQ) screening value and
    - the maximum detection for soil $\leq 10^{-7}$ cancer risk screening value and ≤ 0.1 HQ screening value.
- Carry any chemicals not thus eliminated through the Baseline Risk Assessment.

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[a] Harding Lawson Associates.

Table 5.1. DP44, Laboratory Analyses

Constituent	Method	Groundwater				Soil			
		1988[(a)]	1990[(b)]	1992*	1994	1988*[(a)]	1990*[(b)]	1992*	1994
Halogenated Volatile Organics	8010	X	X	X	X	--	X	X	X
Aromatic Volatile Organics	8020	X	X	X	X	--	X	X	X
Semivolatile Organic Compounds	8270	--	--	--	--	X	--	--	--
Total Petroleum Hydrocarbons	E418.1	--	--	--	--	X	--	X	--
Arsenic	7060	--	X	--	--	--	--	--	--
Lead	7241	--	X	--	--	--	--	--	--
ICP Metals	6010	--	X	X	--	--	--	--	--
Common Anions	E300	--	X	--	--	--	--	--	--

(a) HLA (1989).
(b) HLA (1990).
* Data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.2. WP45, Laboratory Analyses

Constituent	Method	Groundwater			Soil			
		1988(a)	1990(b)	1992*	1988*(a)	1990*(b)	1992*	1994
Halogenated volatile organic compounds	8010	X	X	X	--	X	X	X
Aromatic volatile organic compounds	8020	X	X	X	--	X	X	X
Semivolatile organic compounds	8270	--	--	--	X	--	--	--
Total petroleum hydrocarbons	E418.1	--	--	--	X	--	--	--
Arsenic	7060	--	X	X	--	--	X	--
Lead	7241	--	X	X	--	--	X	--
ICP metals	6010	--	X	X	--	--	--	--
Common anions	E300	--	X	--	--	--	--	--

(a) HLA (1989).
(b) HLA (1990).
* Data used in risk assessment.
ICP = inductively coupled plasma.
X = analyzed.
-- = not analyzed.

Table 5.3. SS57, Laboratory Analyses

Constituent	Method	Groundwater	Soil
		1992	1992
Halogenated volatile organic compounds	8010	X	X
Aromatic volatile organic compounds	8020	X	X
Total petroleum hydrocarbons	E418.1	--	X
Lead	7241	X	X

X = analyzed.
-- = not analyzed.

Table 5.4. ST56, Laboratory Analyses

Constituent	Method	Groundwater				Soil			
		1988	1990	1993	1994*	1988	1990	1993*	1994
Halogenated volatile organic compounds	8010/8020	X(a)	X(a)	X	X	--	--	X	--
Aromatic volatile organic compounds	8010/8020	X(a)	X(a)	X	X	--	--	X	--
Semivolatile organic compounds	8270	--	--	X	--	--	--	X	--
Total petroleum hydrocarbons		--	--	--	--	--	--	--	--
Arsenic	7060	X(a)	X(a)	X	--	--	--	X	--
Lead	7421	--	--	X	--	--	--	X	--
ICP metals	6010	X(a)	X(a)	X	X	--	--	X	X
Common anions		X(a)	X(a)	--	--	--	--	--	--

(a) No method specified.
* Data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.5. SS61, Laboratory Analyses

Constituent	Method	Groundwater				Soil			
		1989	1991	1993	1994*	1989	1991	1993	1994*
Purgeable halocarbons	8010	--	X(a)	X	X	--	X(a)	X	X
Purgeable aromatics	8020	X	X(b)	X	X	X	X(b)	X	X
Volatile organic compounds	8240	--	X	--	--	--	X	--	--
Semivolatile organic compounds	8270	X	X	--	X	X	X	--	X
Pesticides and polychlorinated biphenyls	8080	--	X	--	--	--	X	--	--
Herbicides	8150	--	X	--	--	--	X		--
Total petroleum hydrocarbons	418.1 AK101/102	X(c) --	unk. --	X --	-- X	X(c) --	unk. --	X --	-- X
Inductively coupled plasma metals scan	6010 6020	-- --	-- --	-- --	-- X	-- --	X --	--	-- X
Hnu		HS	HS	--	--	HS	HS	--	--
Field gas chromatograph		HS	--	--	--	HS	--	--	--

(a) Method 601 used.
(b) Method 602 used.
(c) Method 8015M used.
* Data used in risk assessment.
HS = headspace analysis.
X = analyzed.
unk. = unknown.
-- = not analyzed.

Table 5.6. DP25, Laboratory Analyses

Constituent	Method	Groundwater				Soil
		1988(a)	1992*	1993*	1994(b)	1988(a)*
Halogenated volatile organic compounds	8010	X	X	--	X	X
Aromatic volatile organic compounds	8020	X	X	--	X	X
Volatile organic compounds	8240	--	--	X	--	--
Total petroleum hydrocarbons	E418.1	--	--	--	--	X
Arsenic	7060	X	X	--	--	X
Lead	7241	X	X	X	X	X
ICP metals	6010	X	X	--	--	X
Common anions	E300	X	X	--	--	--

(a) SAIC (1988).
(b) Nerney et al. (1994).
* Data used in risk assessment.
ICP = inductively coupled plasma.
X = analyzed.
-- = not analyzed.

Table 5.7. ST27, Laboratory Analyses

Constituent	Method	Groundwater				Soil
		1987[(a)]	1988[(b)]	1992*	1993	1988[(b)]*
Halogenated volatile organic compounds	8010	X	X	X	--	X
Aromatic volatile organic compounds	8020	X	X	X	--	X
Total petroleum hydrocarbons	E418.1	--	--	--	--	X
Arsenic	7060	--	X	X	--	X
Lead	7241	X	X	X	X	X
ICP metals	6010	--	X	X	--	X
Common anions	E300	--	X	X	--	--

(a) Method specified.
(b) SAIC 1989b
* Data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.8. WP33, Laboratory Analyses

Parameter	Analytical Method	Ground Water					Surface Water		Soil
		1985$^{(a)}$	1986$^{(b)}$	1988$^{(c)}$	1990$^{(d)}$	1994$^{(e)*}$	1988$^{(c)}$	1990$^{(d)}$	1990$^{(d)}$
Halogenated volatile organic compounds	SW-8010		X	X	X	X	X	X	
Aromatic volatile organic compounds	SW-8020		X	X	X	X	X	X	
Volatile organic compounds	SW-8240								X
Semivolatile organic compounds	SW-8270				X				
Pesticides/PCBs	SW-8080								X
Total petroleum hydrocarbons	E418.1		X						
Arsenic	SW-7060				X				
Lead	SW-7241	X	X		X				
Mercury	SW-7471				X				
ICP Metals	SW-6010								X
TCLP	6010/7000								X
Total organic carbon	415.1	X	X						
Total organic halides	SW-9020	X							
Phenols	SW-9056	X							
Oil & Grease	413.1	X							
Anions	300					X			
Phosphate	365.2	X	X						
Nitrate/Nitrite	353.2	X	X	X			X	X	

NA = not analyzed.
(a) Dames & Moore 1985.
(b) Dames & Moore 1986.
(c) HLA 1991.
(d) COE 1991.
(e) USAF 1994b.
* = Data used in risk assessment.

Table 5.9. SS35, Laboratory Analyses

		Groundwater			Soil		
Constituent	Method	1988(a)	1990(b)	1992*	1988(a)*	1990(b)*	1992*
Halogenated volatile organics compounds	8010	X	--	X	X	--	X
Aromatic volatile organics compounds	8020	X	--	X	X	--	X
Organochlorine pesticides and polychlorinated biphenyls	8080	--	X	X	--	X	X
Semivolatile organic compounds	8270	--	--	--	--	X	--
Total petroleum hydrocarbons	E418.1	X	--	X	X	--	X
Arsenic	7060	--	X	X	X	--	--
Lead	7241	--	X	X	X	--	X
ICP metals	6010	X	--	--	X		

(a) HLA (1988).
(b) HLA (1990).
ICP = inductively coupled plasma.
* = Data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.10. SS36, Laboratory Analyses

		Groundwater		Soil	
Constituent	Method	1988(a)	1992*	1988(a)*	1992*
Halogenated volatile organics compounds	8010	X	X	X	X
Aromatic volatile organics compounds	8020	X	X	X	X
Organochlorine pesticides and polychlorinated biphenyls	8080	X	--	X	--
Total organic carbon	E415.1	X	--	--	--
Oil and grease	E413.2	X	--	--	--
Total petroleum hydrocarbons	E418.1	X	--	X	--
Arsenic	7060	X	X	X	--
Lead	7241	X	X	X	--
ICP metals	6010	X	X	X	--

(a) HLA (1989).
ICP = inductively coupled plasma.
* = Data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.11. SS37, Laboratory Analyses

Constituent	Method	Groundwater			Soil	
		1988(a)	1992	1994*	1988(a)*	1992*
Halogenated volatile organic compounds	8010	X	X	X	X	X
Aromatic volatile organic compounds	8020	X	X	X	X	--
Semivolatile organic compounds	8270	--	--	X	X	--
Lead	7241	X	X	X	X	--
ICP/MS metals	6020	--	--	X	--	--
ICP metals	6010	X	X	--	X	--

(a) SAIC (1989).
ICP = inductively coupled plasma.
MS = mass spectrometer.
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.12. SS39/SS63, Laboratory Analyses

Constituent	Method	Groundwater			Soil		
		1988 (a)	1990 (b)	1992*	1988 (a)*	1990 (b)*	1992*
Halogenated volatile organics compounds	8010	X	X	X	X	X	X
Aromatic volatile organics compounds	8020	X	X	X	X	X	X
Organochlorine pesticides and polychlorinated biphenyls	8080	--	X	X	X	X	X
Semivolatile organic compounds	8270	--	--	--	X	X	X
Total petroleum hydrocarbons	E418.1	--	--	--	X	X	X
Arsenic	7060	--	X	X	X	--	--
Lead	7241	X	--	X	X	--	--
ICP metals	6010	X	--	X	X	--	--
Common anions	E300	--	--	X	--	--	--

(a) HLA (1989).
(b) HLA (1990).
ICP = inductively coupled plasma.
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.13. ST58, Laboratory Analyses

Constituent	Method	Groundwater 1988	Groundwater 1992	Groundwater 1993*	Groundwater 1994	Soil 1988	Soil 1990	Soil 1993	Soil 1994
Halogenated volatile organic compounds		--	--	--	--	--	--	--	--
Aromatic volatile organic compounds	602/8240	--	X	X	X(a)	--	--	--	--
Semivolatile organic compounds		--	--	--	--	--	--	--	--
Total petroleum hydrocarbons	418.1	--	X	--	--	--	--	--	--
Arsenic		--	--	--	--	--	--	--	--
Lead	7421	--	--	X	X(b)		--	--	--
ICP metals	200.7	--	X	--	--	--	--	--	--
Common anions	300.0	--	X	--	--	--	--	--	--

(a) Method 8020 used.
(b) Method 239.2 used.
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.14. SS64, Laboratory Analyses

Constituent	Method	Groundwater 1988	Groundwater 1990	Groundwater 1993	Groundwater 1994*	Soil 1988	Soil 1990	Soil 1993	Soil 1994
Halogenated volatile organic compounds	8010	--	--	--	X	--	--	--	--
Aromatic volatile organic compounds	8020	--	--	--	X	--	--	--	--
Semivolatile organic compounds	8270	--	--	--	X	--	--	--	--
Total petroleum hydrocarbons	--	--	--	--	--	--	--	--	--
Arsenic	6020	--	--	--	X	--	--	--	--
Lead	6020	--	--	--	X	--	--	--	--
ICP metals	6010/6020	--	--	--	X	--	--	--	--
Common anions	--	--	--	--	--	--	--	--	--

* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.15. LF02, Laboratory Analyses

Constituent	Method	Groundwater				Soil			
		1988	1990	1993	1994^{*}	1988	1990	1993	1994
Halogenated volatile organic compounds	8010	$X^{(a)}$	$X^{(a)}$	X	X	--	--	X	--
Aromatic volatile organic compounds	8020	$X^{(a)}$	$X^{(a)}$	X	$X^{(b)}$	--	--	X	--
Semivolatile organic compounds	8270	$X^{(a)}$	--	--	X	--	$X^{(a)}$	--	--
Total petroleum hydrocarbons	AK 102	$X^{(a)}$	--	--	X	--	$X^{(a)}$	--	--
Arsenic	7060	$X^{(a)}$	--	X	$X^{(c)}$	--	--	X	--
Lead	7421	$X^{(a)}$	--	X	$X^{(c)}$	--	--	X	--
ICP metals	6010	$X^{(a)}$	--	X	$X^{(c)}$	--	--	X	--
Common anions	300	$X^{(a)}$	--	--	X	--	--	--	--

NOTE: Surface water was sampled in 1988 and 1990.

(a) No method specified.
(b) Method 8010 used.
(c) Method 3010/6020 used.
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.16. LF03/FT09, Laboratory Analyses

Constituent	Method	Groundwater				Soil		
		$1988^{(a)}$	$1989^{(b)}$	1992	1994^{*}	$1988^{(a)*}$	$1989^{(b)*}$	1992^{*}
Halogenated volatile organic compounds	8010	X	X	X	X	X	X	X
Aromatic volatile organic compounds	8020	X	X	X	X	X	X	X
Organochlorine pesticides and polychlorinated biphenyls	8080	--	--	--	X	X	--	--
Semivolatile organic compounds	8270	--	--	--	X	X	X	X
Total petroleum hydrocarbons	E418.1	--	--	--	--	--	X	X
Nitrate	E300.0	--	--	--	X	--	--	--
Total dissolved solids	E160.1	--	--	--	X	--	--	--
Arsenic	7060	--	X	--	--	X	X	--
Lead	7241	--	X	X	X	X	X	--
ICP/MS metals	6020	--	--	--	X	--	--	--
ICP metals	6010	--	X	X	--	X	X	--
Common anions	E300	--	X	--	X	--	--	--

(a) HLA (1989).
(b) HLA (1990).
ICP = inductively coupled plasma.
MS = mass spectrometer.
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.

Table 5.17. LF04, Laboratory Analyses

Constituent	Method	Groundwater			Soil		
		1988[(a)]	1989[(b)]	1992*	1988[(a)]*	1989[(b)]*	1992*
Halogenated volatile organics	8010	X	X	X	X	X	X
Aromatic volatile organics	8020	X	X	X	X	X	X
Organochlorine pesticides and polychlorinated biphenyls	8080	--	--	--	X	--	--
Semivolatile organic compounds	8270	X	X	--	X	X	X
Total petroleum hydrocarbons	E418.1	--	--	--	X	X	--
Total dissolved solids	E160.1	X	X	--	--	--	--
Arsenic	7060	X	X	--	X	X	--
Lead	7241	--	X	X	X	X	--
ICP metals	6010	X	X	X	X	X	--
Common anions	E300	X	X	X	--	--	--

(a) HLA (1989).
(b) HLA (1990).
* = data used in risk assessment.
X = analyzed.
-- = not analyzed.
ICP = inductively coupled plasma.
RDX = cyclonite.
TNT = trinitrotoluene.

Table 5.18. LF06, Laboratory Analyses

		Groundwater				Soil		Surface Water
Constituent	Method	1988	1990	1993	1994*	1988	1990	1988
Purgeable halocarbons	8010	X	X	X	X	--	--	X
Purgeable aromatic compounds	8020	X	X	X	X	--	--	X
Volatile organic compounds	8240	--	--	--	--	X	X	--
Semivolatile organic compounds	8270	X	--	X	X(a)	X	X(b)	X
Pesticides and polychlorinated biphenyls	8080	--	--	--	X	--	--	--
Total petroleum hydrocarbon	E418.1	X	--	--	X(c)	X	X	X
Arsenic	7060	X(d)	--	X	X(e)	--	--	X(d)
Lead	7421	X(d)	--	X	X(e)	--	--	X(d)
Mercury	7470	X(d)	--	--	--	--	--	X(d)
ICP metals scan	6010	X	--	X	X(f)	--	--	X
Total dissolved solids	E160.1	X	--	--	X(g)	NA	NA	X
Common anions	E300	X	--	--	X	NA	NA	X
Nitrogen	E353.2	X	--	--	X(h)	NA	NA	X

(a) Method 8070 used.
(b) Soil boring samples only.
(c) Method AK102 used.
(d) Total and dissolved analysis performed.
(e) Method 6020 used.
(f) Method 6020/6010 used.
(g) Method 160.1 used.
(h) Method E3000 used.
* = data used in risk assessment.
X = Analyzed.
-- = Not analyzed.
ICP = inductively coupled plasma.
NA = not applicable.

Metals (such as arsenic, manganese, mercury, chromium, and others) were statistically compared to background metal concentrations established for the base (U.S. Air Force 1993a, 1993b). Metal concentrations were not found to be significantly different from background. Therefore, metals were not included in the contaminants of concern for the source areas. In the case of lead, any lead values exceeding the regulatory screening limit of 15 μg/L in water were retained as a contaminant of concern. In addition, an effort was made to discriminate the contaminants of concern based on source. In particular, pesticides, such as DDT, chlordane, and dieldrin, are widespread in surface soil samples from OUs 3, 4, and 5. This widespread occurrence is believed to be the result of past sitewide spraying. Only at source area SS35 in OU 4 do soil concentrations clearly exceed those expected from spraying residues. Thus, except for SS35, consideration of pesticides has been referred to the Sitewide RI/FS.

Total petroleum hydrocarbons (TPHs) are discussed in the following sections and compared to Alaska State standards. No risk-based screening values are available for TPH, and, therefore, are not included in the contaminants of concern tables. The components of TPH (benzene, toluene, xylene, naphthalene, gasoline) are, however, included in the risk calculations. Concentrations of the contaminants of potential concern are summarized for each source area in the following text.

5.1.1 Meteorology

Eielson AFB is located in the continental climatic zone that covers interior Alaska. The climate is characterized by large diurnal and annual temperature variations, low precipitation, and low humidity.

Average summer temperatures range between 7 and 16°C (44.6 and 60.8°F). Average winter temperatures range between -26 and -13°C (-14.8 and -8.6°F). The extreme temperatures, since 1944, were 33°C (91.4°F) in June and -53°C (-63.4°F) in January.

Average annual precipitation is 36 cm (14.2 in.), which includes 180 cm (70.9 in.) of snow. Average monthly precipitation ranges from 1.3 to 6.4 cm (0.5 to 2.5 in.), and rainfall is generally highest in July and August. The average pan-evaporation rate is approximately 36 cm (14.2 in.)/year.

5.1.2 Soils

The developed portion of the base consists of three predominant soil types: sand and gravel fill, alluvium, and loess. Operable Units 3, 4, and 5 source areas generally consist of sand and gravel fill and alluvium. All OU 3, 4, 5 source areas are located on the flat (0- to 2-percent slope) alluvial plain. The soils are well-drained with moderate to high permeability (approximately 10^{-1} to 10^{-3} cm/s). A typical composite soil profile follows:

Upper 2-3 m (6.6 to 9.8 ft):

Sand to Sand with Gravel (SP-SW), brown to olive, moist, loose, some silt, 30 to 40 percent fine to coarse sand, 15 to 30 percent 3 to 5 cm (1.2 to 2 in.) gravel.

2-3 to 20+ m (6.6-9.8 to 65.6+ ft):

Sandy Gravel (GW-GP), brown to gray to black, wet, loose, 20 to 30 percent medium to coarse sand, gravel 5+ cm (2+ in.).

LF04 and ST56 are located on upland areas east of the developed portion of the base. Soils on these locations are thin loess overlying quartz-biotite schist bedrock that outcrops at many locations.

The organic content of the soils varies from one type to another. Total organic carbon (TOC) was analyzed to quantify the organic content. TOC values from subsurface soil samples were used to calculate average percentage of organic carbon in the soil. The average value obtained was 0.5 percent of the total weight of the soil. The wide variation in measured TOC values resulted in a standard deviation of 7 percent.

5.1.3 Background Soils

Background soil samples were also sampled and analyzed as part of the 1991 OU 2 effort. A summary of the soils encountered during the August-September 1991 background soil sampling effort is presented in the Operable Unit 2 Remedial Investigation Report (U.S. Air Force 1993a). Soil descriptions include those from the U.S. Department of Agriculture Soil Conservation Service (SCS) and from the Unified Soil Classification System.

On the basis of review of the soil survey conducted by the SCS, as well as the investigation of adjacent Eielson-area soils (Dames & Moore 1986), the three major soil groups sampled should be sufficient to describe the background chemical characteristics for the Eielson AFB vicinity. These groups include background data on several metals, naturally occurring organic materials, and possible human-manufactured compounds (for example, pesticides and PCB). Background soils have been shown to contain metals at concentrations that exceed screening levels. DDT and other pesticides have been widely used at Eielson and are generally found across the site.

5.1.4 Permafrost

Permafrost is discontinuous in the Fairbanks area, representative of the southern boundary of the permafrost in central Alaska. Near Fairbanks, permafrost extends up to 60 m (196.9 ft) below land surface (bls) and may act as an impermeable zone, causing groundwater to move around permafrost zones. The developed portions of Eielson AFB have little or no permafrost in the uppermost 9 m (29.5 ft) of the aquifer.

5.1.5 Groundwater

Only one aquifer is located within the main base. The unconfined aquifer consists of alluvial sand and gravel. It is 61- to 91.4-m (200- to 300-ft) thick and overlies crystalline bedrock (Birch Creek Schist). Within this unit, only the upper 18.3 to 27.4 m (60 to 90 ft) were characterized during this investigation. The aquifer was found to be relatively homogeneous between areas of investigation. The layering of materials indicates a greater horizontal than vertical permeability. All of the OUs 3, 4, and 5 source areas, except LF04 and ST56, are located in the flood plain of the Tanana River and are underlain by unconsolidated fluvial and glaciofluvial deposits that contain the uppermost unconfined aquifer. LF04 is located in an elevated area approximately 2 km (1.2 mi) east of the developed portion of the base. The aquifer underlying this source area is apparently contiguous with the aquifer in the lowland area. However, a groundwater discharge boundary may be present at French Creek, which separates LF04 from the developed portion of the base. ST56 is located on Engineer Hill, north of the main developed portion of the base. The uppermost aquifer at ST56 is composed of fracture zones in the schist bedrock.

Since September 1991, water levels have been measured periodically in a sitewide monitoring well network. Measurements were made monthly from August 1992 through August 1993, and less frequently during other periods. Water table elevation contours are based on measurements made in September 1992.

Groundwater is the only source of potable water used at Eielson AFB. This water is supplied by three large-capacity wells of 1000 to 2000 gal/min capacity. The base water supply wells are completed at depths averaging approximately 30.5 m (100 ft). Seven wells are designated to provide water to fight fires on the base and are designed for emergency use only. These wells are plumbed to the water supply system. In addition to the base water supply wells, 41 private wells are within a 4.8-km (3-mi) radius of the base, most of which are located downgradient of the base (north-northwest of the base) in or near the community of Moose Creek (Figure 1.1) and in agricultural areas west of the base (HLA 1991). The city of North Pole is served by a small public water supply system, plus private wells.

The magnitude of the horizontal gradient was calculated for the main base. The average horizontal gradient is approximately 0.001 ft/ft. Data from a pumping test, slug tests, and grain size analyses were used to estimate a hydraulic conductivity of approximately 61 m (200 ft)/day. The direction of groundwater flow within the main base is north-northwest. Locally, groundwater flow is influenced by Garrison Slough, Hardfill Lake, and the pumping of base water supply wells. The direction of groundwater flow appears to be fairly constant year-round. LF04 is on a hillside about 2 km (1.2 mi) from the developed portion of the base. At LF04, the ground surface and the water table elevations are approximately 20 m (65.6 ft) higher than on the developed portion of the base in the French Creek lowlands. The hydraulic gradient at LF04 is much higher than the gradient found in the lowland portion of the base. However, the hydraulic conductivity of the silty sediments is probably at least two orders of magnitude lower than the hydraulic conductivity of the gravel and sand in the lowland area. Flow directions and gradients within the bedrock aquifer at ST56 are not known.

Water levels from nested wells were compared to provide information about vertical hydraulic gradients on the base. The shallow wells generally have a 6.1-m (20-ft) screen interval, beginning near the top of the aquifer, which is approximately 3 m (10 ft) below ground surface. The intermediate wells generally have a 3-m (10-ft) screen interval, beginning at approximately 9.1 m (30 ft) below ground surface. Pressure head differences between the shallow and intermediate wells were smaller than the potential error of the instruments. Therefore, the vertical gradient is negligible.

Seasonal changes in water levels were interpreted using a precipitation hydrography, snowpack data, and temperature data, primarily collected in 1991 and 1992. In general, the aquifer fluctuated uniformly across the site, indicating that similar hydrogeological conditions exist in the upper 30.5 m (100 ft) of the aquifer at all source areas. Typically, the water table reaches its minimum elevation in November. During this period, the discharge from the aquifer to the Tanana River and its tributaries exceeds recharge. In April, the water table typically rises about 0.9 to 1.8 m (1 to 2 ft) and a maximum is observed in the last week of May. This major recharge event coincides with the spring thaw, when runoff from the snowmelt is at a maximum. The water table drops relatively rapidly after the end of May.

5.1.6 Surface Water

Three source areas in OU 3, 4, and 5 are adjacent to surface water bodies. LF03, SS35, and SS37 are all adjacent to Garrison Slough. With the exception of a short period of time during spring runoff, the surface water elevation in the slough is lower than the groundwater elevations, indicating the slough is a *gaining* stream that receives recharge from the groundwater during most of the year.

6.0 Nature and Extent of Contamination at Operable Unit 3

OU 3 includes source areas DP44, WP45/SS57, ST56, and SS61. The source areas are primarily contaminated with solvents. The principal contaminants of concern for the OU 3 source areas include 1) TCE and its associated degradation product DCE, and 2) benzene, toluene, ethylbenzene, and xylene (BTEX). Other substances detected less frequently and at lower concentrations (such as 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethane, polycyclic aromatic hydrocarbons (PAHs), and lead) may be potential concerns. No vinyl chloride was detected in OU 3 source areas.

6.1 Source Area DP44

Source area DP44 is located near the Large Aircraft Maintenance Hangar. As originally defined, DP44 included wastewater disposal leach field from the battery shop (Building 1141) and the area around Building 1138 between the runway taxiway and Flightline Avenue west of the North Street intersection (see Figure 2.1). DP44 was identified as a source area because, in the past, the battery shop and Building 1138 may have discharged waste into a leach field system within the area. However, subsequent investigations have not confirmed the existence of this leach field. Most of the contamination in this source area is located south of the hangar, and is probably related to past jet-engine maintenance activities in the hangar. Identified contaminants of concern are fuel-related compounds and solvents in groundwater and soil.

6.1.1 Soil Contamination at DP44

Soil contaminants greater than EPA risk-based screening levels or background concentrations for DP44 are summarized in Table 6.1. Soil samples were collected and analyzed for the constituents shown in Table 5.1. A summary of soils data for source area DP44 can be found in Appendix A.

Soil contaminants listed in Table 6.1 are PAHs that were found at maximum concentrations in a surface soil sample collected during drilling of Well 44M03. This sample was collected in a gravel parking lot that contained fragments of asphalt. Because the parking lot is in close proximity to the runway, it was routinely maintained by spraying oil for dust suppression. The source of PAHs could be from exhaust from vehicles parked in the lot, exhaust from aircraft on the nearby runway, or asphalt residue. These contaminants are highly sorptive and immobile.

While solvent and benzene contamination was the reason for designating DP44 as a source area, the concentrations of these two constituents did not exceed screening levels. Subsurface concentrations of solvent and benzene were estimated to be sufficiently high to leach into the groundwater to yield concentrations that exceed groundwater screening levels. Therefore, even though solvent and benzene contamination in soils does not exceed screening levels based on direct exposure to the soil, it may be the source of groundwater contamination through the leaching pathway.

In August 1994, 13 soil borings were drilled in the vicinity of Well 44M04 to determine the extent and concentration of chlorinated solvents in soils south of the large aircraft maintenance hangar. Locations for the borings were determined using a soil-gas survey. The soil-gas survey indicated that contaminated soils extended to the west under the aircraft parking ramp. The borings were completed through the vadose zone to the water table, located at approximately 3 m (10 ft) below land surface in this vicinity. Samples were taken at three depth intervals, 0.6 to 1.2 m (2 to 4 ft), 1.2 to 1.8 m (4 to

Table 6.1. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, DP44

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
Anthracene	20	4/1	5500 - 5500	44M03
Benzo(a)anthracene	10	4/3	200 - 48,000	44M03
Benzo(a)pyrene	9	3/2	470 - 18,000	44M03
Benzo(b)fluoranthene	30	4/3	460 - 210,000	44M03
Benzo(g,h,i)perylene	40	4/3	280 - 14,000	44M03
Chrysene	70	4/2	280 - 21,000	44M03
Dibenzo(a,h)anthracene	50	4/1	6500 - 6500	44M03
Indeno(1,2,3-cd)pyrene	50	4/3	270 - 15,000	44M03

6 ft), and 2.4 to 3 m (8 to 10 ft) below land surface. The samples were analyzed for chlorinated solvents and BTEX compounds. TCE and total DCE results are illustrated in Figures 6.1 through 6.3. Low levels (less than screening level) of toluene were detected in some of the soil samples, as shown in Appendix A.

6.1.2 Groundwater Contamination

Groundwater contaminants in samples collected from monitoring wells that are greater than EPA risk-based screening levels or background concentrations for DP44 are summarized in Table 6.2. Groundwater samples were collected and analyzed for the constituents listed in Table 5.1. A summary of the sample concentrations can be found in Appendix A.

During field investigations at DP44 prior to 1994, benzene and TCE were found in the groundwater above their 5-μg/L maximum contaminant levels (MCLs). Toluene, ethylbenzene, and xylene were also detected, but at concentrations below their MCLs. Benzene contamination above 5 μg/L covered an area of approximately 3300 m^2 (3947 yd^2), with Well 44M02 displaying the highest benzene concentration. Groundwater probe data collected in 1988 indicated that benzene concentrations up to 4000 μg/L existed near the top of the water table. Benzene concentrations detected in 1990 had diminished fourfold since the 1988 sampling. By 1992 and 1994, benzene levels decreased to just above the MCL. For details on 1992 and 1994 benzene concentrations at DP44, refer to Figures 6.4 and 6.5. The 1992 data were used in the risk assessment and are reported in Table 6.2 and Appendix A.

Two areas of TCE contamination were detected in the groundwater above the 5-μg/L MCL, including Well 44M03 and Well 44M04, with TCE concentrations above 100 μg/L in Well 44M04. The two sites of TCE contamination appeared to be unrelated and relatively limited, based on groundwater probe results, which showed no detectable TCE between the sites or at adjacent probes or wells. The distribution of contamination near Well 44M04 indicated the source of TCE may be upgradient of DP44.

In August 1994, TCE and total DCE were still present in the vicinity of Well 44M04 in concentrations similar to previous years. These concentrations, as shown in Figures 6.6 and 6.7, were 109 ppb and 121 ppb, respectively. Results from the groundwater probe samples taken during the soil borings are also shown in Figures 6.6 and 6.7. They also show that chlorine solvent contamination extends away from Well 44M04 to the west under the aircraft parking ramp and to the north toward the hangar.

The distributions for TCE and DCE are slightly different. Vinyl chloride has never been detected in any of the groundwater samples from DP44. No groundwater samples are available from underneath the hangar. Wells 44M03, 44M07, and 44M08, to the north of the hangar, show low levels of TCE and DCE contamination. The concentrations in all three wells are below MCLs. It is not known whether this contamination results from a second low-level source or is the leading edge of a plume located underneath the hangar. The total area of TCE-contaminated soils is approximately 6500 m^2 (69,000 ft^2) with a volume of 20,000 m^3 (25,500 cu yd) containing an estimated 3.2 kg of TCE.

All contaminants detected at DP44 were in aqueous form. No free-phase solvent or fuel was encountered.

Table 6.2. Groundwater Contaminants Greater Than Screening Levels, DP44

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Benzene	2	15/2	3.7 - 5.3	44M05
Trichloroethane	1	15/3	1.2 - 2500	44M04

6.2 Source Area WP45/SS57

The photo laboratory and dry well at Building 1183 were designated as Source Area WP45. Building 1183 is located near the main taxiway along the west side of Flightline Avenue (see Figure 2.1). The operational history of the dry well is not known. It was originally believed the dry well was the source of the solvent concentration found at WP45. However, in August 1992, two new wells were added upgradient from the dry well. Contaminant concentrations were higher on the two new wells than in the monitoring well downgradient of the dry well.

The dry well located at the west corner of Building 1183 has not been removed because removal would compromise the structure of the building. Standing groundwater in the well and sludge at the bottom of the well were sampled on April 1993, and the drain leading to the well was plugged with cement. Results indicated low levels of TCE in the water (3 μg/L) and low levels of chromium (1.2 μg/L) and silver (1.9 μg/L) in the sludge. Based on these results, the dry well appears to be a secondary source of groundwater contamination at WP45. The suspected primary source of contamination is currently believed to be a former maintenance shed that was located at the northwest corner of the fire station, Building 1206. No specific information explains the cause of the source of contaminants at WP45. The identified contaminants of concern are solvents in groundwater and soil.

Source Area SS57 is the area surrounding the fire station, Building 1206 (see Figure 2.1). SS57 is considered with Source Area WP45 because they are closely related and the groundwater contamination from the two sites overlap. Soils beneath the pavement in the parking lot of Building 1206 are contaminated with fuel. The primary contaminants of concern in SS57 are fuel-related compounds associated with spills of gasoline and jet propulsion fuel (JP-4) from fuel handling activities.

An independent study of natural attenuation by Utah State University (USU) was conducted concurrently with the remedial investigation at WP45/SS57. A meeting was held 6 July 95, during which USU presented their preliminary findings and modeling of site data collected at WP45/SS57. These findings are presented in Section 16.0, Explanation of Significant Differences.

6.2.1 Soil Contamination

Soil contaminants greater than EPA risk-based screening levels or background concentrations for WP45 are summarized in Table 6.3. No soil contaminants above EPA risk-based screening levels or background concentrations were identified for SS57. Soil samples were collected and analyzed for the constituents listed in Tables 5.2 and 5.3. A summary of the sample concentrations for WP45 and SS57 is found in Appendix A. TCE is the only contaminant listed in Table 6.3 that was detected in subsurface soils. The other contaminants, all PAHs, were found only in surface soils. This is consistent with the fact that the site is adjacent to the runway where jet exhaust containing PAHs is deposited.

Table 6.3. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, WP45

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
Trichloroethane	1	7/2	3300 - 12,000	45SB08-B
Anthracene	1	17/4	88 - 921	45SS05
Benzo(a)anthracene	0.1	22/18	0.2 - 536	45SS05
Benzo(a)pyrene	0.1	22/17	0.2 - 500	45M02
Benzo(b)fluoranthene	0.1	22/17	0.3 - 464	45SS05
Benzo(g,h,i)perylene	0.4	22/15	0.5 - 530	45M02
Dibenzo(a,h)anthracene	0.1	17/14	0.4 - 60	45SS05
Indeno(1,2,3-cd)pyrene	0.3	22/15	0.3 - 530	45M02

TCE and BTEX were detected only in soil boring 45SB08 (completed as monitoring well 45MW08) during 1992. The results indicated that TCE and BTEX concentrations in the soil increased with depth at WP45. Results from soil samples collected at SS57 during the same field season indicate that BTEX contamination is localized at soil boring 57SB02 and decreases with depth.

6.2.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for WP45 are summarized in Table 6.4 and for SS57 in Table 6.5. Groundwater samples were collected and analyzed for the constituents listed in Tables 5.2 and 5.3. A summary of the sample concentrations for WP45 and SS57 is found in Appendix A.

TCE (7200 μg/L) was found in groundwater samples at concentrations that exceed drinking water standards. The extent and concentration of TCE in groundwater is presented on Figure 6.8. TCE groundwater contamination covers an area of nearly 20,000 m^2 (almost 5 acres). The size of the TCE plume is relatively constant, but the maximum concentration of 7200 μg/L in Well 45MW08 has never been confirmed with additional samples. TCE concentrations could be lower since the original analysis because snow removed from the tarmac was disposed on the area immediately west of the well. Infiltrating melt water may have dispersed and diluted the TCE in the groundwater. DCE, a decomposition product of TCE, has also been found at several locations within the TCE plume at concentrations up to 77 μg/L (Figure 6.9). Traces of DCE (< 1 μg/L) have been found in the emergency fire well, Supply Well C, located approximately 45.5 m (150 ft) upgradient of the dry well. Benzene was detected in groundwater samples from WP45 in concentrations exceeding drinking water standards in 1988, 1989, and 1992. Based on the findings of the 1992 investigation, the benzene observed in the groundwater at

Source Area WP45 may have migrated from Source Area SS57 and is not included in discussions of WP45. Vinyl chloride has not been detected in groundwater samples collected from either WP45 or SS57.

Groundwater samples from SS57 show concentrations of benzene (530 μg/L) and toluene (1900 μg/L) that exceed drinking water standards. The benzene is plotted in Figure 6.10. DCE was detected in three groundwater samples with a maximum concentration of 73 μg/L.

All contaminants detected at WP45 and SS57 were in aqueous form. No free-phase solvent or fuel was encountered.

Table 6.4. Groundwater Contaminants Greater Than Screening Levels, WP45

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Trichloroethane	1	12/8	1.3 - 370	45M01

Table 6.5. Groundwater Contaminants Greater Than Screening Levels, SS57

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
1,2-Dichloroethylene	0.5	3/1	5.3 - 5.3	57SB02
Benzene	2	3/2	5 - 530	57SB02
Toluene	2	3/1	1900 - 1900	57SB02

An independent study of natural attenuation by Utah Water Research Laboratory (UWRL), Utah State University, has been conducted concurrently with the remedial investigation at WP45/SS57. A meeting was held 6 July 1995, during which UWRL presented their preliminary findings and modeling of site data collected at WP45/SS57. The soil and groundwater contamination exists at this site in the form of low-level sorbed species and dissolved contaminant mass. Currently, no evidence of residual dense non-aqueous phase liquid (DNAPL) is present within a source area at the site; it also does not appear that any residual fuel material exists in the form of light nonaqueous phase liquid (LNAPL). The contamination is adsorbed and contained or in a dissolved phase and not accessible for source removal or treatment. UWRL focused its study on evaluating the current extent of the dissolved TCE plume, investigating evidence of TCE degradation existing throughout the site in the form of anaerobic dechlorination intermediate products, and evaluating the likelihood of biological mediated reactions, based on mass balance estimates and known stoichiometric relationships for these anaerobic transformation processes.

UWRL field data collection confirmed earlier findings reported by PNL. Low levels of soil contamination (< 1 ppm TCE in all samples), an apparently contained groundwater plume (particularly benzene), no free product, and no vinyl chloride detected through DCE was present. New findings include further evidence of TCE anaerobic dechlorination with ethylene and large distribution of DCE product, significantly lower BTEX than previously reported, and rapid transportation of contaminants in the immediate vicinity of monitoring well 45MW08 (suspected source area).

The relative rate and extent of contaminant migration was evaluated through the use of a conventional 3-dimensional advective/dispersive groundwater model that incorporates groundwater flow, contaminant sorption, and contaminant degradation to describe the downgradient movement within the shallow aquifer over time. Model parameters that were not available or measured at the site were estimated using representative literature values.

The results of the UWRL study suggest that groundwater movement from this site is relatively slow (approximately 18 m/yr [59 ft/yr] pore water velocity, with approximately 6 m/yr [20 ft/yr] retarded TCE groundwater velocity based on measured field data). Additionally, with approximately 9 kg (20 lb) of TCE mass apparently lost in the aquifer over a 2-year monitoring period, it appears that TCE degradation is occurring at a first order degradation rate of approximately 0.00027\d (0.027%/d), yielding a TCE half life of approximately 7 years. With these values of contaminant velocity, apparent degradation rate, and an estimated source configuration based on model calibration, the remaining source of TCE contamination is predicted to be exhausted in another 7 years, with the subsequent groundwater plume generated from this source being attenuated within the aquifer to below regulatory limits of 5 μg/L within 70 years, and within approximately 500 m (1640 ft) of the source.

6.3 Source Area ST56

ST56 (Engineer Hill Spill Site) is an active munitions storage and maintenance compound about 4.8 km (3.0 mi) north-northeast of the main part of the base (Figure 2.1). This compound is a secured area with a fence and guardhouse. Identified contaminants of concern are solvents, particularly tetrachloroethane (PCE), and fuel-related compounds in the ground within the hill. The original source of the contamination could not be found. Groundwater sampled in the lowland surrounding Engineer Hill and surface water and sediment in Lily Lake were not contaminated (see Figure 6.11).

The subsurface geology at ST56 consists of paleozoic quartz-mica schists, phyllites, and quartzite. The bedrock is characterized by a fracture pattern with a distinct orientation and low transmissivity. The supply well was pump-tested during the RI, giving a hydraulic conductivity value of 0.09 m/day. This number suggests an extremely slow transport velocity for any contaminant in the deep aquifer. Permafrost has been encountered at approximately 12 m (37 ft) bls.

6.3.1 Soil Contamination

Two soil samples were collected near the wooden crib in which wastewater from Engineer Hill was discharged (see Figure 6.11). The samples were analyzed for VOCs, SVOCs, and total metals. No soil constituents exceeded EPA risk-based screening levels or background concentrations.

6.3.2 Groundwater Contamination

The only groundwater contaminant greater than EPA risk-based screening levels or background concentrations for ST56 was PCE, as shown in Table 6.6. Groundwater samples were collected and analyzed for the constituents listed in Table 5.4. A summary of the sample concentrations can be found in Appendix A.

Inspection of the Engineer Hill compound, during June 1993, revealed no evidence for large use or release of solvents or petroleum products. No stressed vegetation, oily sheens, unusual odors, refuse, drums, or stained soil were observed at ST56. The septic-system leach field, at the bottom of the hill, has eroded and is exposed. Water flows, at low discharge, into the road. The water has no distinctive odor or color. The septic-system leach field problem will be addressed with the State of Alaska under 18 AAC 72 Waste Water Disposal regulations.

Starting in 1986, groundwater samples were collected on a quarterly basis from the water supply wells at ST56. From 1986 on, a variety of organic compounds have been detected. The most consistently detected analyte in the wells has been PCE. No free-phase solvent contamination has been observed. In 1990, a new well was brought online and was similarly contaminated. Since 1991, ST56 has been supplied with drinking water, brought to the site and stored in tanks. One of the two supply wells has been shut down. Currently, groundwater point of use is restricted to toilets, boilers, and sinks with warning signs posted indicating the water is not for drinking.

Table 6.6. Groundwater Contaminants Greater Than Screening Levels, ST56

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Tetrachloroethane (PCE)	0.5	5/2	13.8 - 25.1	WAD

6.4 Source Area SS61

SS61 is in the center of the developed portion of the base, just north of the water treatment plant pond on Garrison Slough, and is on the east and south sides of the Vehicle Maintenance Shop (Building 3213), as shown in Figure 2.1. The shop was originally built in 1954 and expanded in 1992. The shop has been used solely for vehicle maintenance. Waste oils, solvents, and water from maintenance activities were passed through an oil-water separator. The oil fraction was recovered for reuse. The wastewater was discharged to two dry wells located at the south end of the building. Identified contaminants of concern are fuel-related compounds and solvents in soil and groundwater. The source of the contamination appears to be one of the dry wells. During construction of the addition to Building 3213, both dry wells, along with surrounding contaminated soil, were removed, and the wastewater piping from the building was reconfigured to discharge to the sanitary waste system.

6.4.1 Soil Contamination

Currently, soils in the immediate vicinity of Well 61MW02 at SS61 are contaminated with TCE, cis-1,2-dichloroethylene, and BTEX. These soils provide some continuing source of groundwater contamination, but because wastes were discharged directly into the groundwater via the dry well, it is likely that most of the source for the plume is already in the groundwater.

No soil contaminants greater than EPA risk-based screening levels or background concentrations were identified for SS61. Soil samples were collected and analyzed for the constituents listed in Table 5.5. A summary of the sample concentrations for SS61 is found in Appendix A.

6.4.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for SS61 are summarized in Table 6.7. Groundwater samples were collected and analyzed for the constituents listed in Table 5.5. A summary of the sample concentrations for WP45 and SS57 is found in Appendix A.

The analytical results of groundwater samples collected from the three wells drilled near SS61 indicated that groundwater on the north side of the building addition is free of petroleum contamination, but groundwater near the eastern dry well (near Well 61MW01) is slightly contaminated with TCE (1 μg/L) and petroleum constituents, such as benzene (2.8 μg/L), toluene (6.8 μg/L), ethylbenzene (3.6 μg/L), xylene (26 μg/L), and 1,2-dichlorobenzene (18 μg/L). These concentrations are all less than their corresponding MCLs. These results are consistent with the fact the soil contained no or low concentrations of these same constituents. Groundwater near Well 61MW02 contained significantly higher concentrations of TCE (78 μg/L), toluene (250 μg/L), and xylene (290 μg/L). TCE clearly exceeded the MCL of 5 μg/L. Because of the dilution required to measure these concentrations, the reporting detection limit was increased from 0.5 μg/L to 50 μg/L for both benzene and tetrachloroethane. Concentrations of these two constituents was reported as <50 μg/L.

Table 6.7. Groundwater Contaminants Greater Than Screening Levels, SS61

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Benzene	2	35/2	2.1 - 2.8	61MW01
Gasoline	120	32/4	400 - 2000	61-PS-3A
Trichloroethane (TCE)	1	35/15	1 - 1100	61-PS-3A

In 1994, lead was detected at concentrations above screening levels in water samples collected from wells 61MW01, 61MW02, and 61MW03. Concentrations in unfiltered samples ranged from 15.2 μg/L to 40.4 μg/L, as reported in Appendix A. It is believed that these lead concentrations are due to fine-grained sediment in the samples, because all unfiltered samples had a turbidity of >100 NTU. Only one of the filtered samples contained lead (22.3 μg/L) at greater than the screening level of 15 μg/L. Lead in the other two samples decreased to 1.5 μg/L and less than one μg/L after filtering. The lead detected at SS61 is believed to be associated with the soil and, therefore, immobile.

The data led to an additional investigation of the area, using the microwell technique (Nerney et al. 1994). In this investigation, 20 microwells were placed around the Vehicle Maintenance Shop and in the grass field across Division Street, north of the shop and downgradient of the dry wells.

The results indicate that groundwater just north of the original Vehicle Maintenance Shop is contaminated with TCE and cis-1,2-dichloroethylene at concentrations greater than their MCLs, 5 μg/L and 70 μg/L, respectively (Figures 6.12 and 6.13). Petroleum contamination is also indicated by the presence of TPH-G (Figure 6.10), but no specific BTEX compounds were detected in excess of their MCLs. Based on the assumption that sources for these contaminants are the dry wells on the south side of the building, a contaminant plume appears to extend from the dry well near Well 61MW02, beneath the building, to approximately Division Street. At that point, contaminant concentrations fall below

MCLs, but they can still be detected for another several hundred meters south, extending beneath the grass field across Division Street. The lateral spread of the plume is limited to the footprint of the original vehicle maintenance building.

All contaminants detected at SS61 were in aqueous form. No free-phase solvent or fuel was encountered.

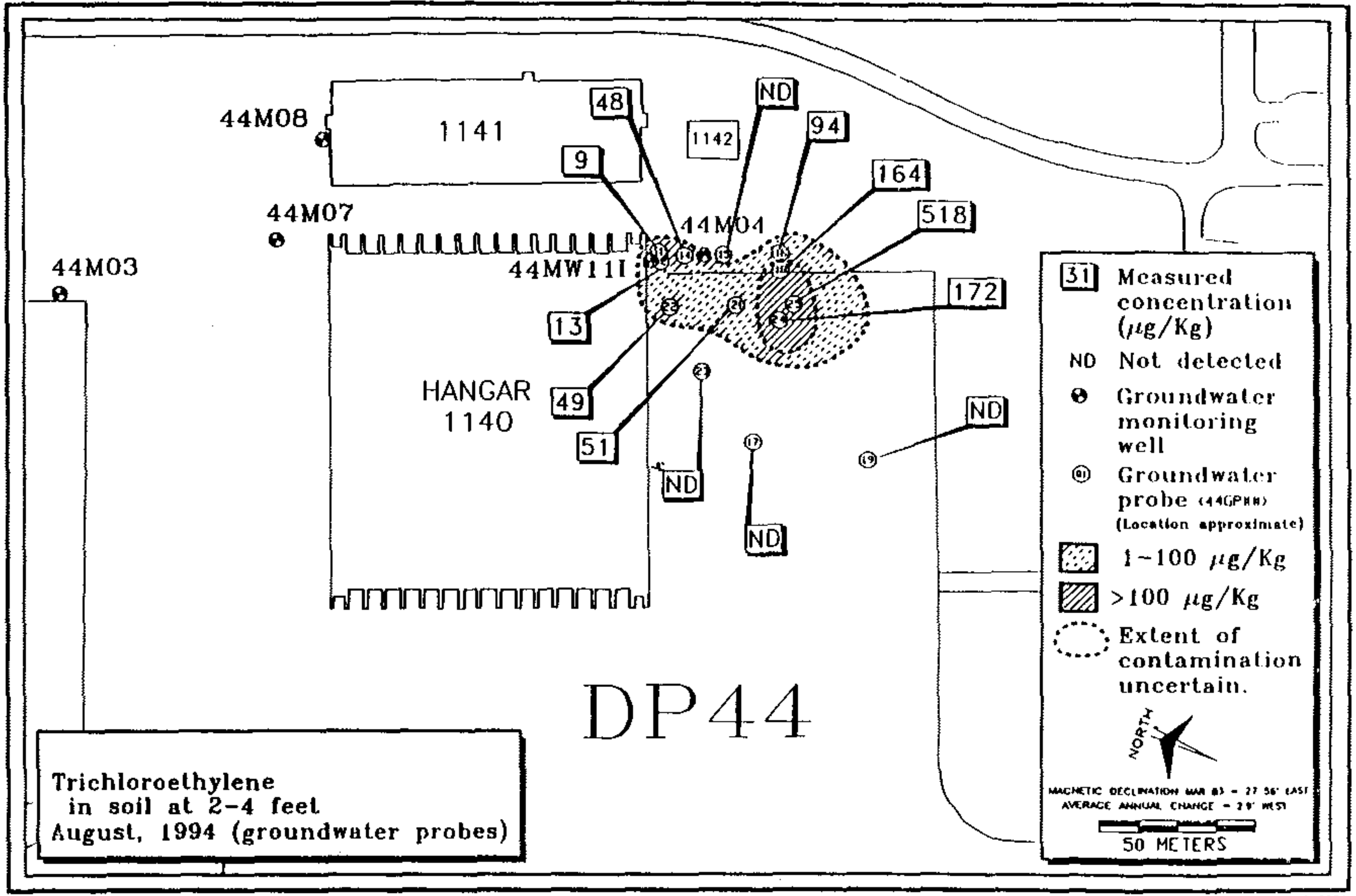


Figure 6.1. DP44 Dichloroethylene in Soils, Depth = 0.06 to 1.2 m (August 1994)

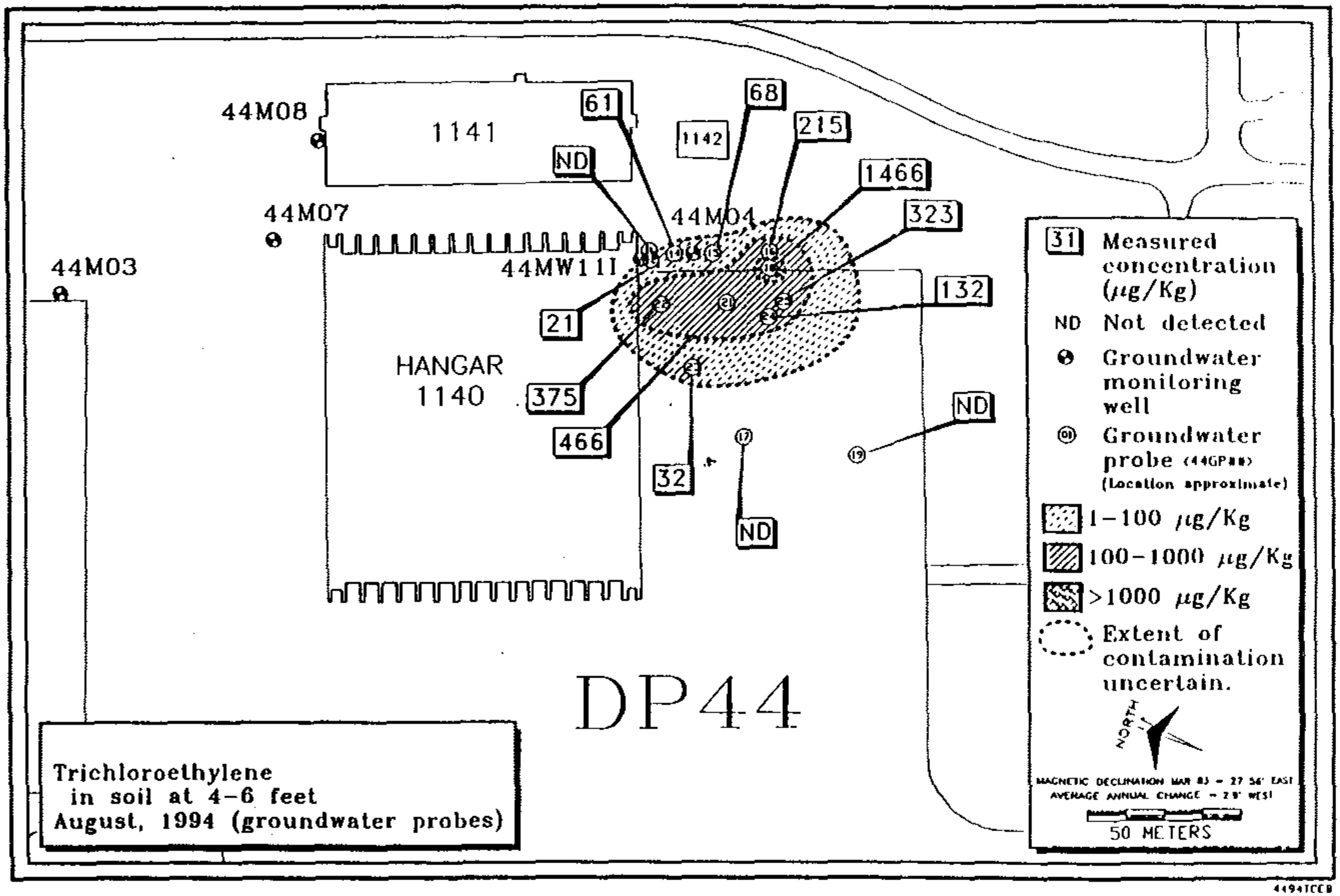


Figure 6.2. DP44 Dichloroethylene in Soils, Depth = 1.2 to 1.8 m (August 1994)

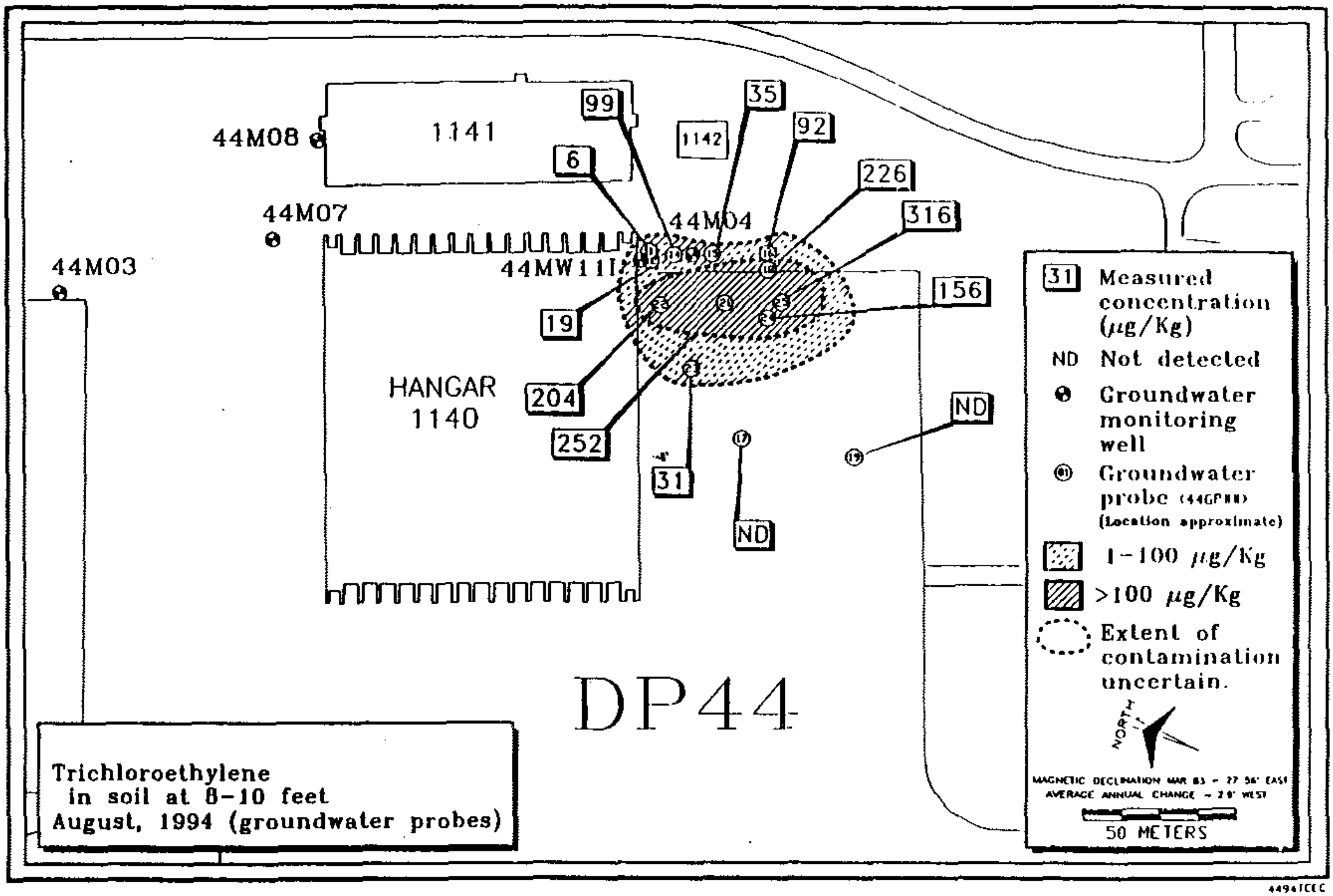


Figure 6.3. DP44 Dichloroethylene in Soils, Depth = 2.4 to 3.0 m (August 1994)

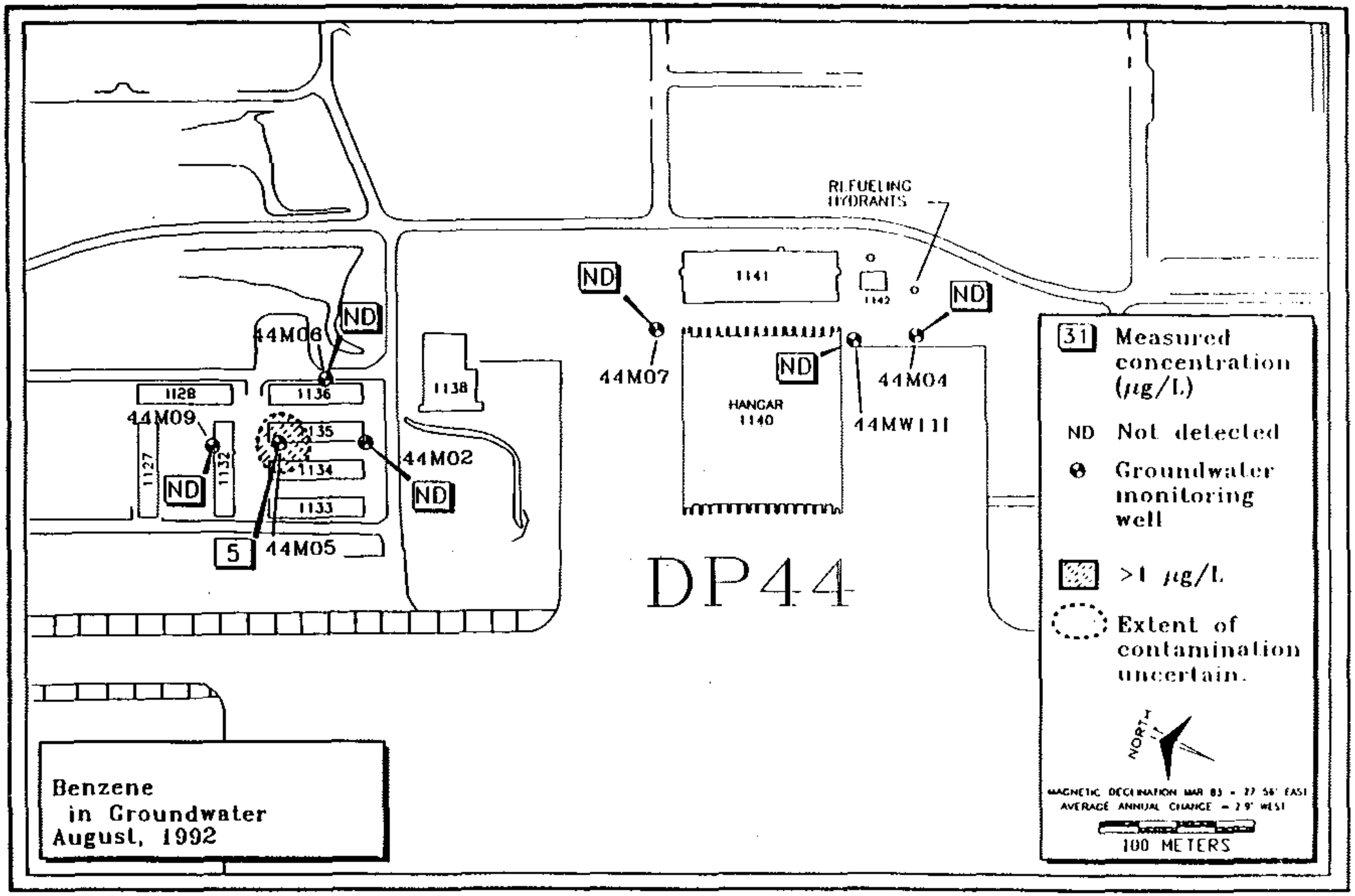


Figure 6.4. DP44, Benzene in Groundwater (August 1992)

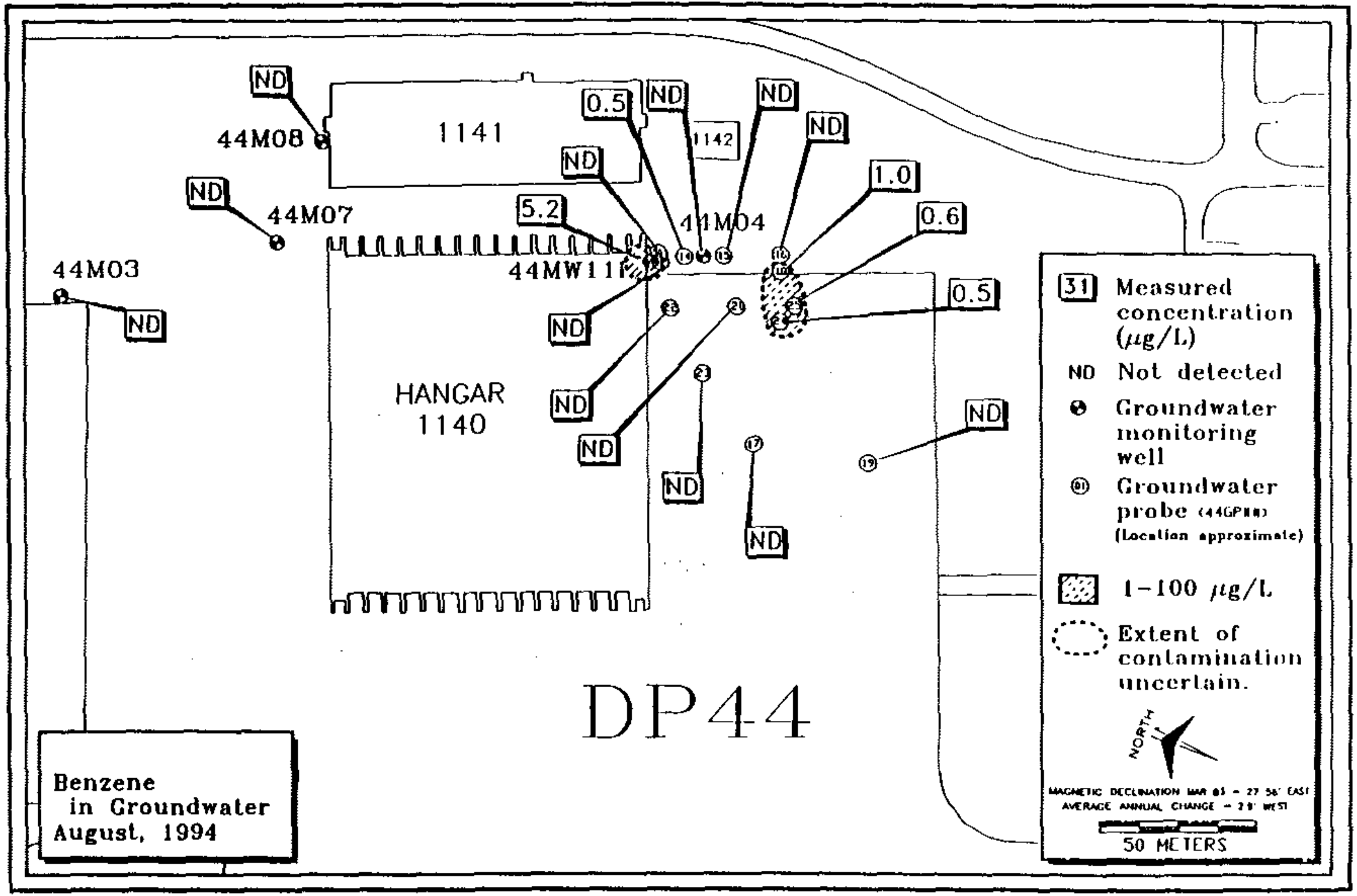


Figure 6.5. DP44, Benzene in Groundwater (August 1994)

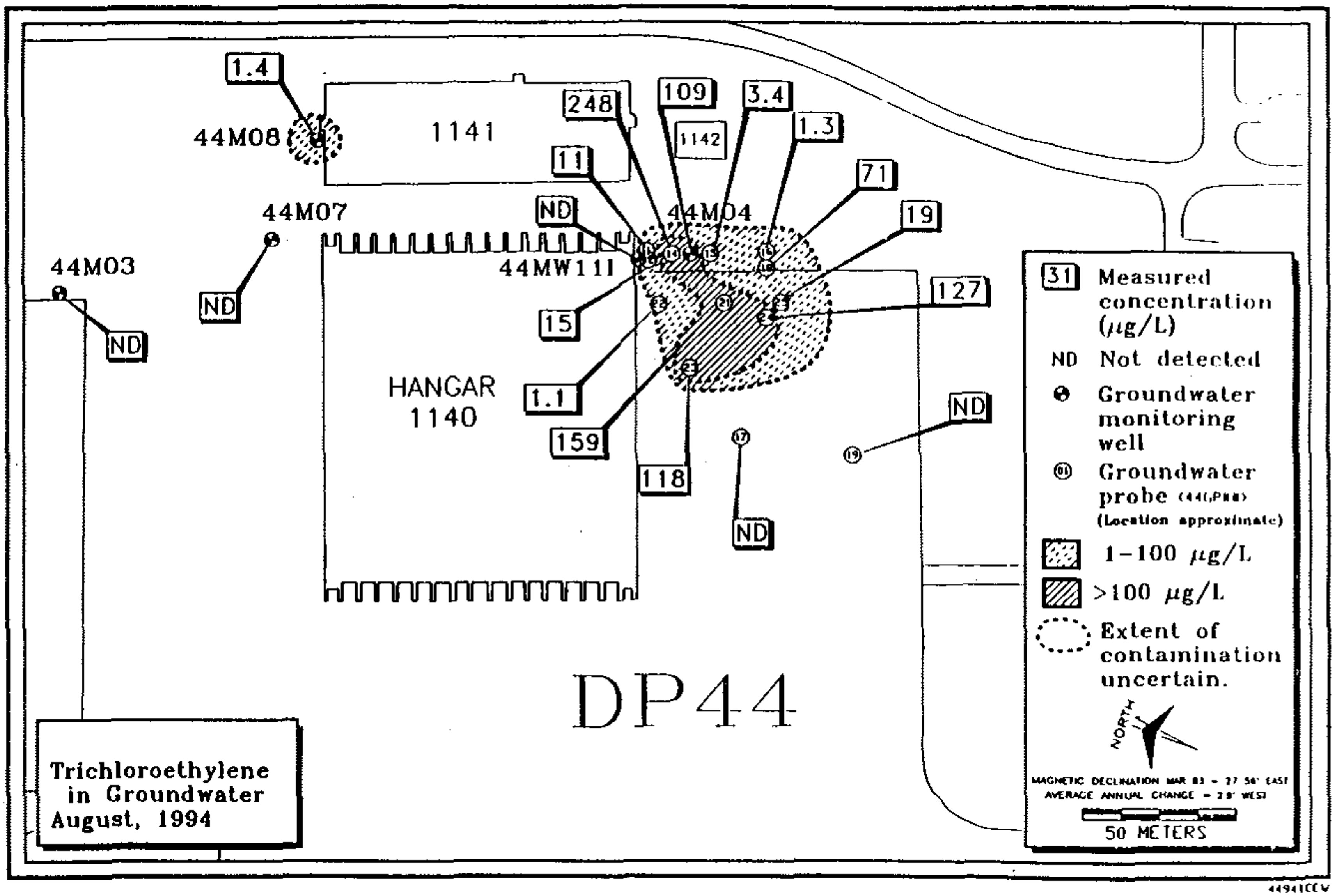


Figure 6.6. DP44, Trichloroethane in Groundwater (August 1994)

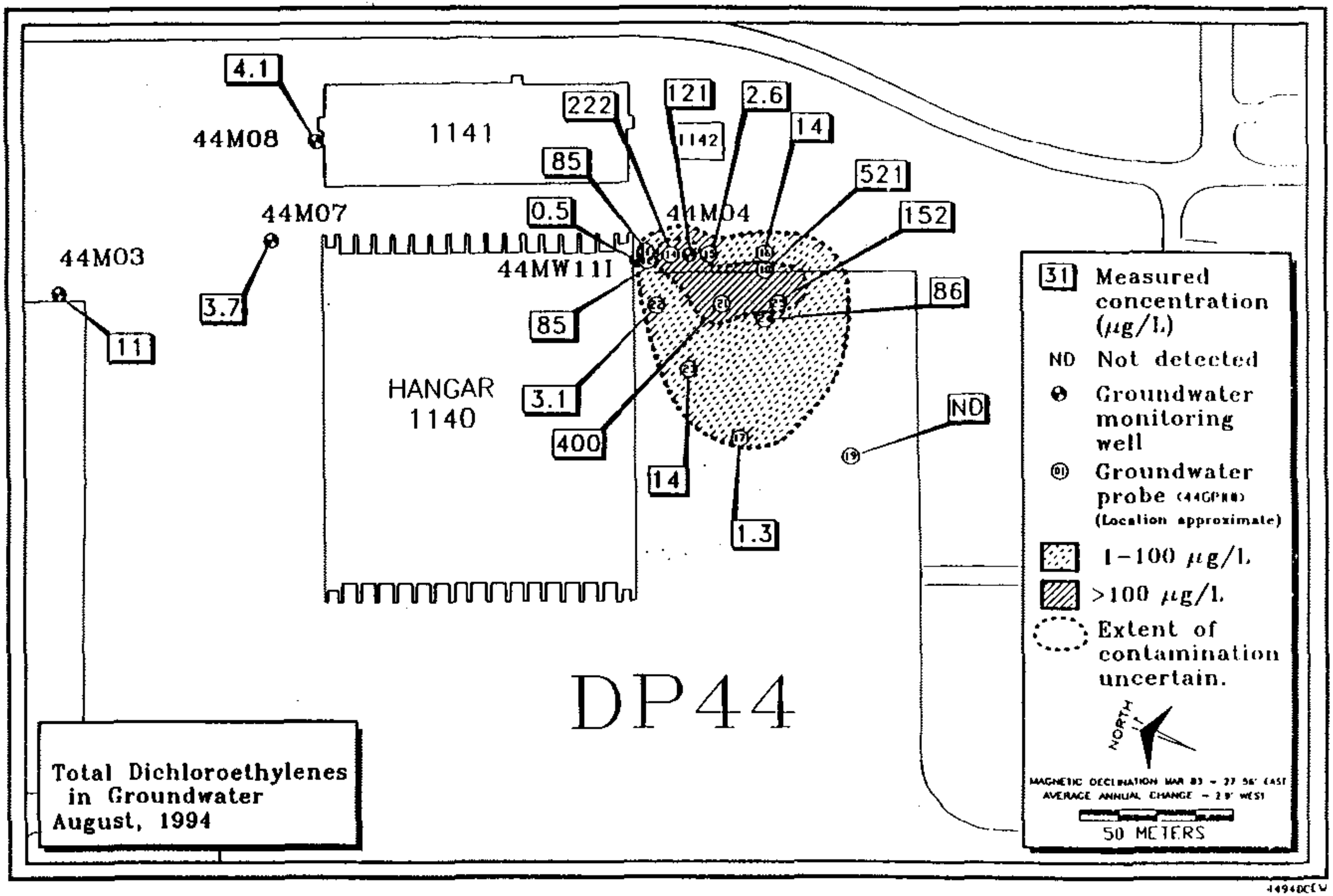


Figure 6.7. DP44, Total Dichloroethylene in Groundwater (August 1994)

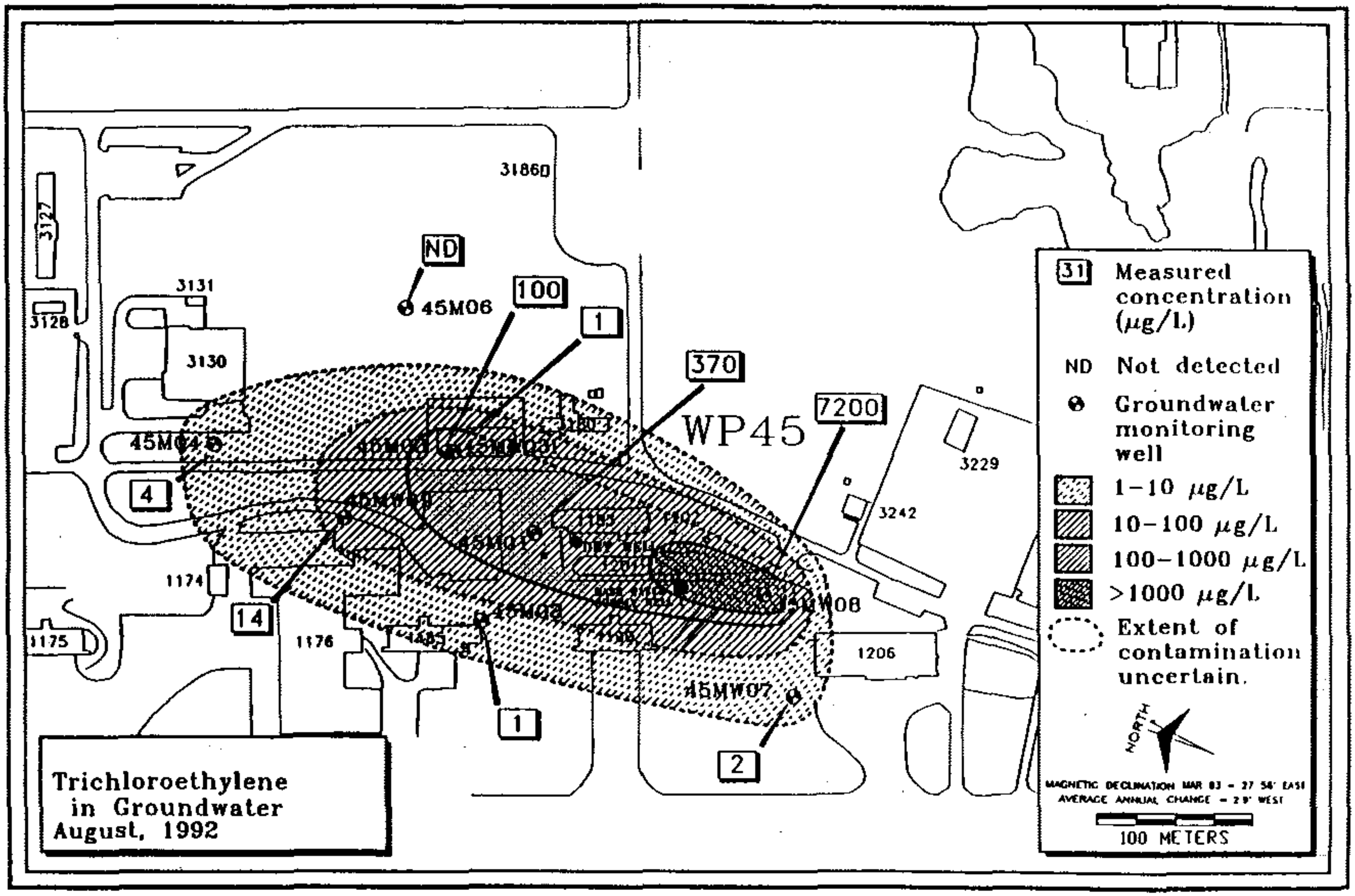


Figure 6.8. WP45, Trichloroethane in Groundwater (August 1992)

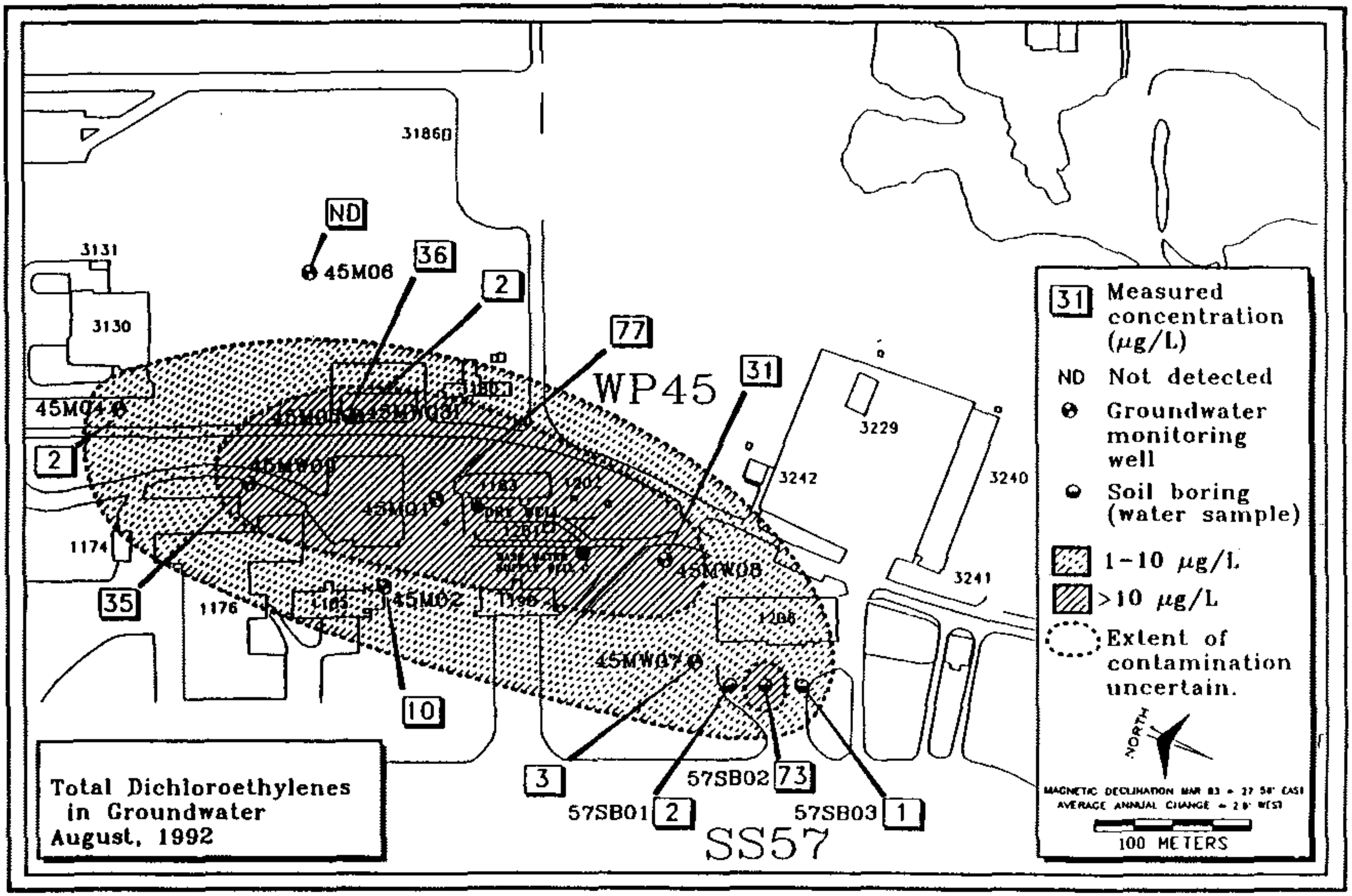


Figure 6.9. WP45, Total Dichloroethylene in Groundwater (August 1992)

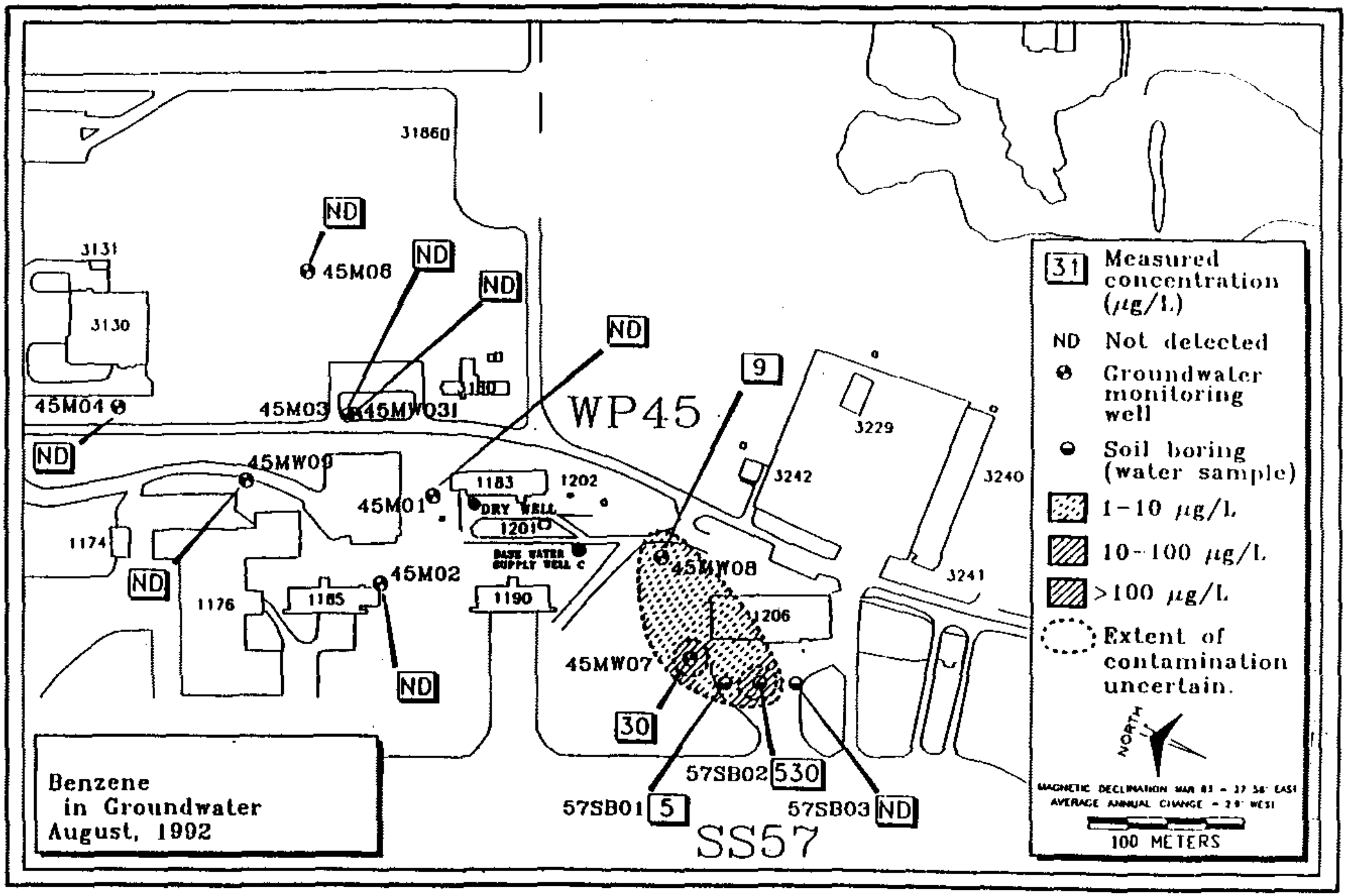
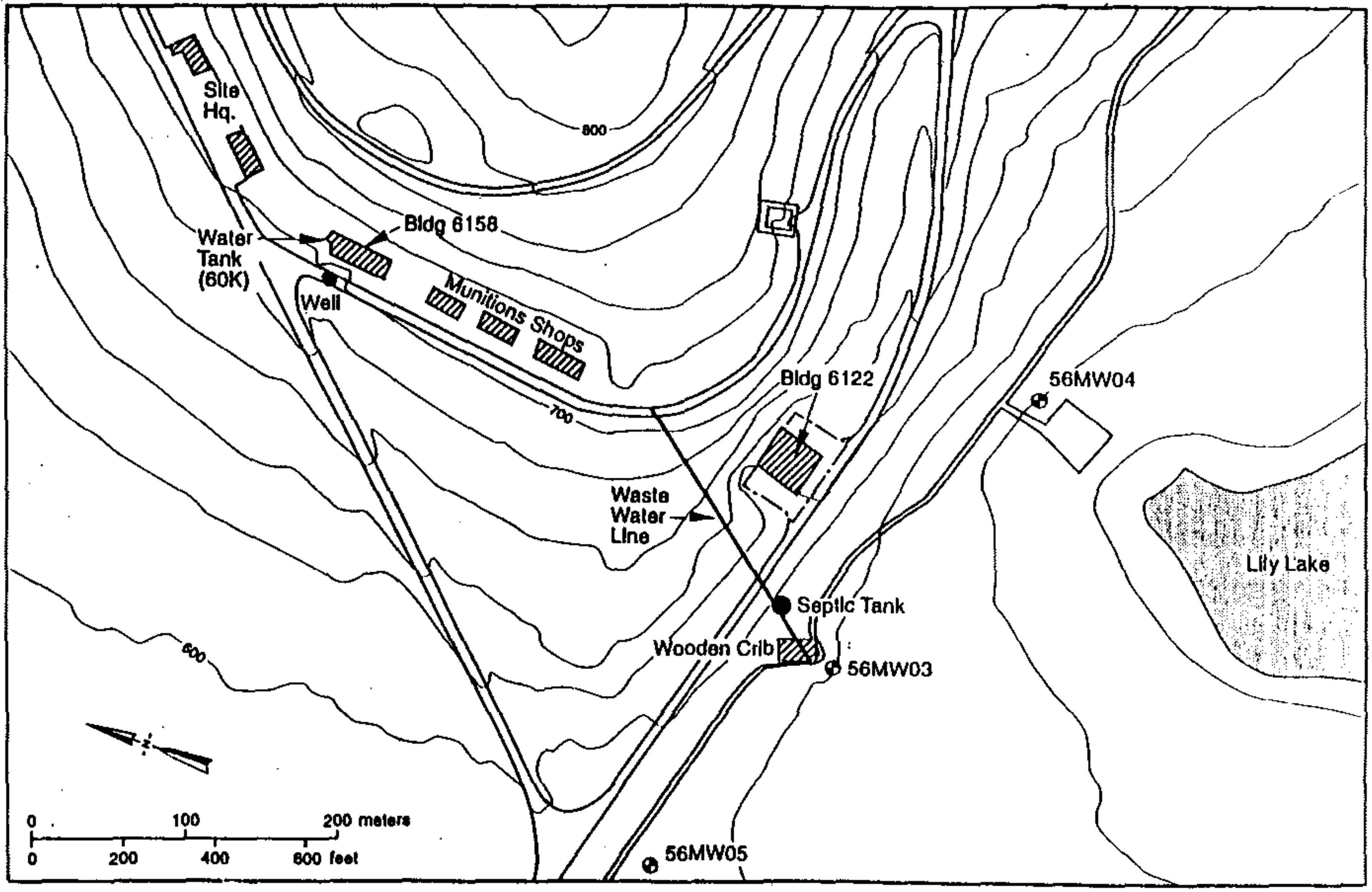
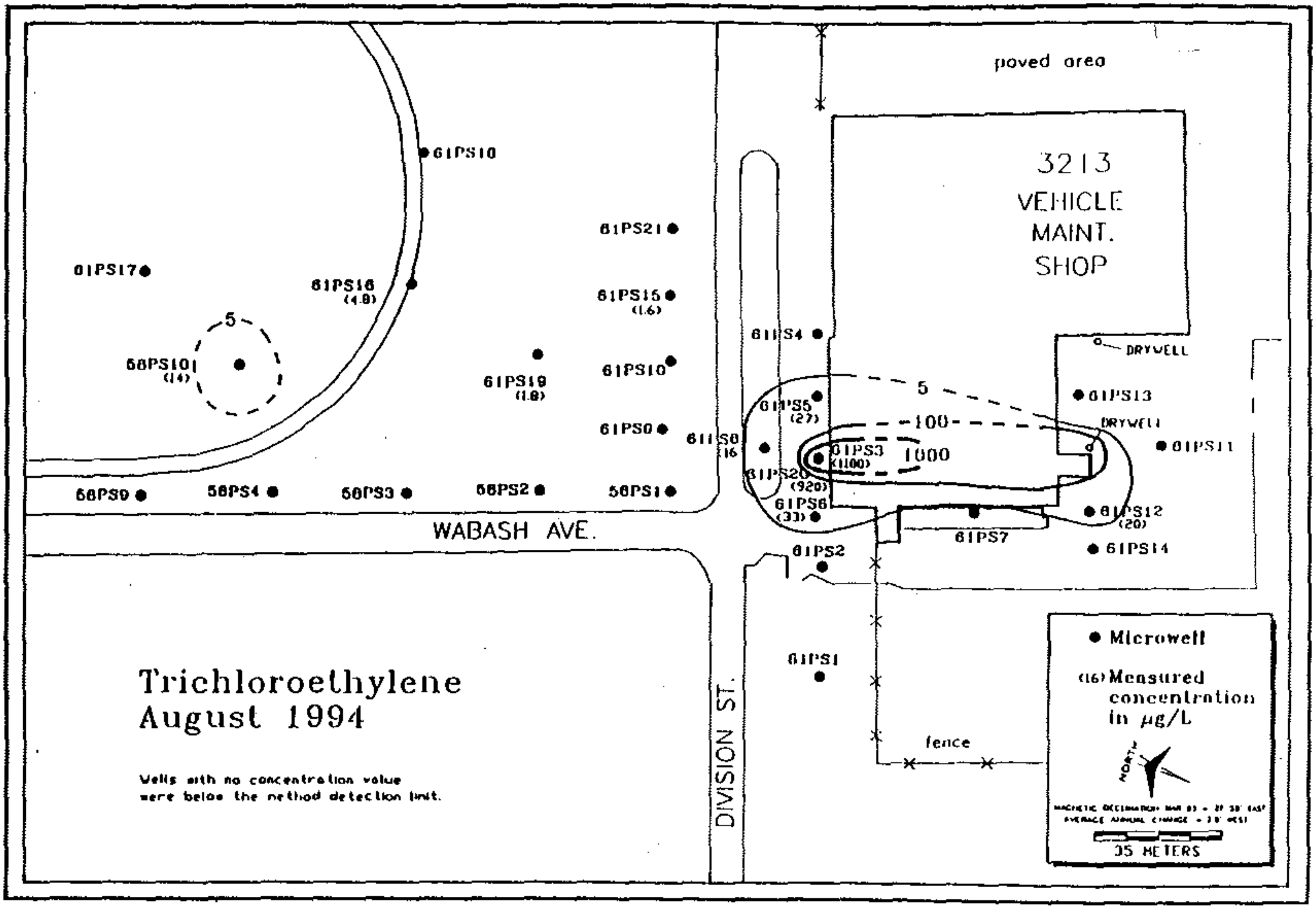


Figure 6.10. WP45, Benzene in Groundwater (August 1992)



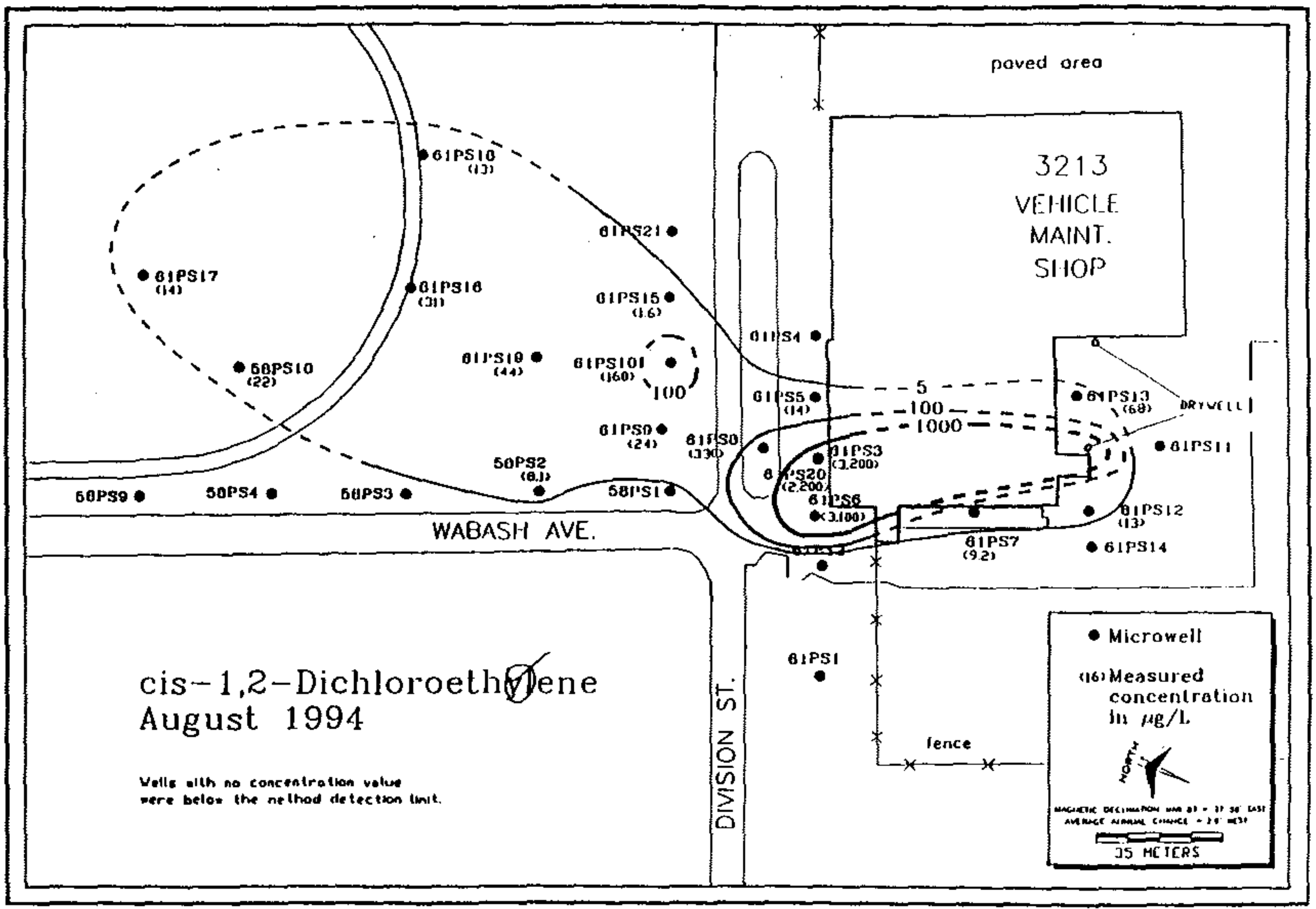
S9501044.3

Figure 6.11. Map of ST56 with Well Locations and Water Table Elevations



Legend: --- Inferred extent of contamination

Figure 6.12. SS61, Trichloroethane in Groundwater (August 1994)



Legend: --- Inferred extent of contamination

Figure 6.13. SS61, Cis-1,2-Dichloroethylene in Groundwater (August 1994)

7.0 Nature and Extent of Contamination at Operable Unit 4

This section discusses the nature and extent of groundwater and soil contamination identified at the Operable Unit 4 (OU 4) source areas DP25, ST27, WP33, SS35, SS36, SS37, SS39/SS63, ST58, and SS64.

7.1 Contaminants of Concern

OU 4 consists of a series of past-practices source areas that were characterized by drum disposal, asphalt-cement handling, road-oil mixing, and sludge disposal operations. Therefore, a variety of contaminants would be expected at these source areas. Because of the nature of the operations, most of the contaminant sources would be expected to be of relatively low volumes (such as drums). However, two of the reported sludge disposal areas, DP25 and ST27, are located within active fuel storage tank complexes, where large volumes of petroleum hydrocarbons are handled.

Any number of chemical components could have been stored in drums. Solvents and fuel hydrocarbons were sometimes used at asphalt-cement handling areas for cleaning and diluting the asphalt cement. Waste oils and fuels were used in road oiling operations. Chemicals that have been detected in previous work at these sites include pesticides (particularly DDT and its decomposition products DDD and DDE); lead and chromium (from paint); total petroleum hydrocarbons (TPHs) and polycyclic aromatic hydrocarbons (PAHs) from asphalt cement; benzene, toluene, ethylbenzene, and xylene (BTEX) from fuels and solvents; and chlorinated hydrocarbons from solvents. Compounds that might be expected, but were not detected in significant quantities, include polychlorinated biphenyls (PCBs) and ketones (paint solvents).

7.2 Source Area DP25

DP25, the E-6 Fuel Storage Tank Area, (shown in Figure 2.1) is located north of Quarry Road, adjacent to the E-11 Fuel Storage Tank Area, ST27. Six 4.78-million liter and two 800,000 L above-ground tanks are enclosed by a fence in a 210- by 340-m (229- by 372-yd) area. A single 16 million-liter above-ground tank is enclosed by a separate fence to the east of the main tank farm area. The fuel storage tanks were installed, with their underground piping and valves, in 1955 or 1956. Until 1992, the E-6 Tank Farm was used for storage of JP-4 jet fuel. Beginning in 1992, the tanks were converted to JP-8 fuel storage. The main fuel-product line feeding the tanks runs along Quarry Road. Weathered sludge from periodic cleaning of fuel tanks was buried in shallow trenches between the fuel storage tanks until 1980 (CH2M Hill 1982). The sludge consisted primarily of water, rust, dirt, and fuel. The trench or burial areas have never been located, despite a search of aerial photographs and old records in 1992. In 1987, a pipeline fuel spill of JP-4 reportedly occurred along Quarry Road adjacent to the source area.

The potential sources of contamination in DP25 are spills and leaks from the fuel storage tanks and their associated piping within the E-6 POL (petroleum, oil, and lubricants) Storage Area. The major contaminants of concern expected from fuel spills would be BTEX and lead. Additionally, the sludge from periodic cleaning of the tanks could be a source of lead contamination.

7.2.1 Soil Contamination

Soil samples were collected from soil borings and analyzed for the constituents listed in Table 5.6. Soil contaminants greater than EPA risk-based screening levels or background concentrations for DP25 are summarized in Table 7.1. A summary of the sample concentrations can be found in Appendix A. Because DP25 is an active tank farm, the area is considered industrial. The 870,000 μg/kg of lead (Table 7.1) at DP25 does not exceed the EPA industrial action level of 1,000,000 μg/kg.

Table 7.1. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, DP25

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
Dieldrin	1	15/1	8 - 8	25TP05
Heptachlor Epoxide	1	15/2	1.4 - 250	25TP01
Lead	N/A	65/65	1800 - 870,000	25SD-1
PCB-1254 (Aroclor)	54	14/2	172 - 613	25TP01

BTEX constituents are curiously absent from soils at DP25, possibly because the water table is shallow at this site, often within two feet of land surface. Leaks in tanks or buried pipelines would have released fuel directly into the groundwater. Soils would be contaminated at the leak site or distributed in a layer over the area covered by the floating fuel. Because these latter soils are near land surface, volatile constituents such as the BTEX compounds could evaporate.

7.2.1.1 Floating Fuel. No floating fuel was detected at DP25 in 1986, but was detected in measurements made from 1988 through 1993. During this period of time, fuel thicknesses in the monitoring wells ranged from no floating fuel to 0.33 m (Table 7.2). The floating fuel samples from these wells were identified as JP-4. The greater thickness of product in Well B-15 in June 1992 may have been related to the increased recharge from spring snowmelt. No floating fuel has been detected

Table 7.2. JP-4 Floating Fuel Thickness, DP25

Monitoring Well	Measurement (m)				
	Oct 1988 SAIC	Oct 1988 HLA	May-June 1992 USAF[(a)]	Aug-Sept 1992 PNL/CH2M Hill	April 1993 PNL
B-1	ND	ND	0	ND	ND
B-4	<0.006	0	ND	0.003	ND
B-15	0.10	0.03	0.33	0.03	Sheen
B-18	0.02	0	ND	0	0.003
53M01	ND	0	ND	0	ND

HLA = Harding Lawson Associates.
ND = not determined.
PNL = Pacific Northwest Laboratory.
SAIC = Science Application International Corporation.
USAF = U.S. Air Force.[(a)]
(a) Informal communication with Julie L. Stringer, May-June 1992.

in measurements at Well 53M01, which is situated within the reported site of a 1987 JP-4 spill from a pipeline break along Quarry Road.

7.2.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for DP25 are summarized in Table 7.3. A summary of the groundwater sample concentrations is presented in Appendix A. Groundwater samples were collected from soil borings and analyzed for the constituents listed in Table 5.6.

Significant lead concentrations were detected in 1988 groundwater samples from wells inside the main fence and ranged from 291 to 362 µg/L (see Figure 7.1). Outside the main fenced area, lead concentrations that exceed the maximum contaminant level (MCL) of 15 µg/L were detected in 1988 in three wells located west of the tank farm and in two wells east of the tank farm. Lead results varied from 1988 through 1993 somewhat erratically but were generally lower in 1993 (Figure 7.2) than in 1988. Lead also appeared to decrease in the downgradient wells. The lead distribution appears to have expanded between 1988 (Figure 7.1) and 1993 (Figure 7.2) only because of the additional monitoring locations in 1993. The source of the lead plume in the monitoring wells to the west of the facility is not known, as lead is expected to be less mobile in groundwater than BTEX. One of the unlocated sludge pits could be the source of this contamination.

In 1988, BTEX was detected in groundwater at a number of the wells within the fenced areas of the tank farm. Significant benzene concentrations in groundwater at the wells in the main fenced area ranged from 46 to 290 µg/L, with the concentration of benzene near the large tank to the east reading 7900 µg/L. Toluene concentrations in three wells in the main tank farm area ranged from 1200 to 34,000 µg/L; near the large tank, the concentration was 24,000 µg/L. Based on these data, the apparent extent of the VOC plumes appeared to be limited to the fenced area, as shown in Figures 7.3 and 7.4.

BTEX was also detected at high concentrations (900 to 4700 µg/L) in 1988 in groundwater at Well 53M01 near the reported 1987 pipeline fuel spill. A hydrocarbon identification test of the groundwater sample showed the source of the contamination to be motor gasoline, although the spill was reportedly JP-4 fuel. VOCs were fairly low (< 10 mg/kg) in the adjacent soil, indicating that most of the product had already volatilized or migrated to the groundwater.

The results from 1992 show that BTEX contamination still existed at DP25 for the two monitoring wells sampled inside the bermed areas; concentrations have decreased by about a factor of 3 between 1988 and 1992. These observations, coupled with the essentially static amount of floating product since 1988, indicate the source of contamination at this site may have already ceased. Groundwater samples collected in April 1993 from downgradient wells indicate that contamination from DP25 has not migrated, in significant concentrations, beyond the bermed walls surrounding the tank farm (see Figure 7.5). Data from a microwell study in 1994, also indicate that BTEX contamination is still confined inside the E-6 tank farm berm (Nerney et al. 1994). No contamination was detected in any of the microwells north of DP25. No evidence exists that any contaminants, except lead, have spread beyond the bermed and fenced area of the facility.

Table 7.3. Groundwater Contaminants Greater Than Screening Levels, DP25

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Benzene	5	38/11	20 - 1700	25B-18
Lead	5	38/18	5.7 - 60	25B-17
Toluene	5	38/9	36 - 8900	25B-18

7.3 Source Area ST27

ST27, the E-11 Fuel Storage Tank Area, (shown in Figure 2.1) is a fence-enclosed complex of five fuel tanks on the south side of Quarry Road approximately 600 m (654 yd) southeast of Hardfill Lake. At present, the E-11 Tank Farm is used for storage of jet fuel (JP-4 until 1992, now JP-8). The 8.72 million-liter above-ground tanks were installed in 1972 and are cleaned at 3- to 6-year intervals. Before 1980, the sludge from cleaning operations, composed of water, rust, dirt, and fuel, was buried in shallow trenches within the storage area. The trench burial areas have never been located, despite a search of aerial photographs and old records in 1992. Since 1980, the sludge has been drummed and shipped off-base for disposal.

The potential sources of contamination in ST27 are spills and leaks from the fuel storage tanks and their associated piping within the E-11 POL Storage Area. The major contaminants of concern expected from fuel spills would be BTEX and lead. Additionally, the sludge from periodic cleaning of the tanks could be a source of lead contamination.

7.3.1 Soil Contamination

Soil samples were collected and analyzed for the constituents listed in Table 5.7. No soil contaminants above EPA risk-based screening levels or background concentrations were identified for ST27. A summary of the soil sample concentrations is presented in Appendix A.

7.3.2 Groundwater Contamination and Floating Fuel

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for ST27 are summarized in Table 7.4. Groundwater samples were collected and analyzed for the constituents listed in Table 5.7. A summary of the groundwater sample concentrations can be found in Appendix A. No floating product was found at ST27 during surveys in 1987, 1988, and 1992. In addition, all of the 1992 VOC and BTEX analyses were below detection at all of the wells in and around ST27 (see Figures 7.3, 7.4, and 7.5.) None of the well samples, either within or downgradient of ST27, has shown any evidence of POL contamination. These tanks were installed in 1972 and have been maintained periodically since that time. It appears that these tanks have better integrity than those at ST10 and DP25, and no fuel leaks have occurred at this site.

A number of the wells within the source area boundary did show low levels of lead contamination. In June 1992, one well (B-13) showed a significant lead concentration (120 μg/L). The high lead results for Well B-13 were not confirmed when the well was resampled on 1993 (Figure 7.2).

Table 7.4. Groundwater Contaminants Greater Than Screening Levels, ST27

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Lead	5	15/9	5.4-120	27B-13

7.4 Source Area WP33

WP33, the effluent infiltration pond, is a 7.7-hectare (19-acre) unlined pond into which treated liquid effluent from the wastewater treatment plant is discharged. It is a major portion of the existing Wastewater Treatment Plant at Eielson AFB (Figure 2.1 and 7.6). The plant is on a separate access road from Central Avenue, about 0.5 km (0.3 mi) northeast of the main gate. The pond has been in use since 1979.

The wastewater treatment plant, built in 1953, currently treats most of the base domestic and operations wastewater. Some operations waste streams are treated by 12 distributed oil-water separators. The average daily flow through the plant in 1982 was 3400 m^3/day (900,000 gal/day) (CH2M Hill 1982). Before 1973, primary treatment was effected through three clarifiers and two sludge digesters. The plant was expanded in 1973 to include secondary treatment at two aeration lagoons and a chlorination system. Until 1979, effluent was directly discharged to Garrison Slough under a National Pollution Discharge Elimination System permit (No. AK-002089-3). This permit requires routine monitoring of discharge waters for sanitary sewer parameters, chemical oxygen demand, and oil and grease. These parameters were frequently above normal, indicating unauthorized POL disposal or releases.

Wastewater entering the plant may have included wastes generated by spent solvents, deicers, and degreasers from shops and other repair facilities disposed of into storm drains, accidental discharges of these and other industrial chemicals, and photo shop and laboratory waste reagents from sinks and floor drains. The wastewater may also have included contaminated wash-down waters from runways, driveways, and roads; fire training pit discharges; dust suppressive oils; excess herbicides; pesticides; PCB; wood preservative containing solutions; spillage; and a variety of household and office supplies discharged through sanitary sewer outflows.

The infiltration pond, WP33, is engineered to discharge groundwater to the vadose zone, thereby disposing of treated wastewater effluent. According to conversations with Eielson AFB staff, the pond appears to be increasing in volume, evidenced by the increase in pond surface area over the last several years. This increased area would suggest that siltation of sediment or organic material has created a less permeable substrate. Groundwater monitoring data indicate that WP33 has not impacted the groundwater quality in the area. Nevertheless, historical data suggest the pond sediments may be contaminated from past practices. It is possible that future changes in the hydrology of the site or the operation of the ponds could expose pond sediments. No soil or groundwater contaminants greater than EPA risk-based screening levels or background concentrations were identified for WP33. A summary of the groundwater sample concentrations for WP33 is presented in Appendix A. Groundwater samples were collected and analyzed for the constituents listed in Table 5.8.

7.5 Source Area SS35

SS35, the Asphalt Mixing and Drum Burial Area, (shown in Figure 2.1) is located in the central part of the base adjacent to Central Avenue, about 0.3 km (0.2 mi) south of the Water Treatment Plant.

SS35 was used as a mixing area from the early 1950s to the late 1960s. Asphalt cement was mixed in a tank and then used for road maintenance. Commingled waste oils and solvents were mixed with contaminated fuels and used for road oiling to control dust. Approximately 200 empty asphalt-cement drums were reportedly disposed of along the banks of Garrison Slough (CH2M Hill 1982). A ground tour of the site showed no evidence of the empty drums or the areas saturated with asphalt cement. It was speculated the drums might have been removed for proper disposal. The area was also apparently used for pesticide mixing and pesticide equipment cleaning operations.

The source area currently is inactive and covered with mowed grass. The only indications of past activities are several areas where asphalt cement and gravel are visible at the surface.

A number of potential sources of contamination at SS35 have been identified, including surface spills of asphalt cement, waste oils, solvents, contaminated fuels, and pesticides from the asphalt-cement mixing operations; pesticide mixing and cleaning operations; residual materials in buried drums; and metal, concrete rubble, and demolition debris remaining in the source area. Soil and groundwater samples were collected (see Figure 7.7) and analyzed for the constituents listed in Table 5.9.

Geophysical studies have been conducted at SS35 to identify potential locations of buried drums and other materials. During the 1988 geophysical investigation, two anomalies (anomaly areas A and B) indicating possible buried drums were identified (HLA 1989). The first anomaly (A) was a 23- by 69-m (25.2- by 75.5-yd) area identified in a location adjacent to Garrison Slough, roughly corresponding to an excavation area identified on historical aerial photographs. The area did not appear to have large numbers of buried drums, but does contain smaller areas concentrated with drums. The second anomaly (B), oriented northwest to southeast near Garrison Slough, may be an abandoned utility, such as a drainage culvert. Two small areas containing asphalt cement were present on the ground surface in this area, and aromatic and chlorinated hydrocarbons were detected near the center of the linear anomaly (B) in a soil gas survey.

It was concluded that metal debris and/or asphalt-cement drums had been disposed of in the trench (HLA 1989). The linear anomaly (B) is referred to as *the trenched area*.

A geophysical survey in 1990 identified a third anomaly (C) in the northern part of the source area extending about 38.1 m (41.7 yd) along the pond shoreline. Partially buried concrete rubble and demolition debris were visible in the brush and trees at the shoreline. It was concluded the area contained buried metal, concrete, and other demolition debris.

The contents of any drums buried at SS35 are generally unknown. In 1989, a number of drums were uncovered during the connection of Building 3460 to the utilidor. The burial site of the drums was located approximately 60 m (66 yd) east of anomaly area C, near the junction of the utilidor from Building 3460 with the Central Avenue utilidor. The contents of one drum uncovered at this time were analyzed for VOCs and semivolatile compounds (SVOCs) and metals. Its analysis is reported in HLA (1990). The compounds detected would be expected to be present in waste oils used in road oiling operations or waste solvent mixtures.

7.5.1 Soil Contamination

Soil contaminants greater than EPA risk-based screening levels or background concentrations for SS35 are summarized in Table 7.5. Surface soils, subsurface soils, and sediments from Garrison Slough were collected and analyzed for the constituents listed in Table 5.9. A summary of the sample concentrations for SS35 is presented in Appendix A.

DDT and its derivatives were found in almost all surface and subsurface soil samples collected in the 1988 and 1990 investigations. The highest concentration observed was 396 mg/kg in a surface soil sample collected at 35SS03, located within anomaly area A near Garrison Slough. High DDT concentrations in surface soil were also observed at 35M01 (32.1 mg/kg), 35M02 (1.6 mg/kg) and two surface soil locations. In all cases, DDT concentrations were higher than the DDD and DDE concentrations. DDT was less than 1 mg/kg in all subsurface soil samples tested. Heptachlor was found in all soil samples tested in 1990 at concentrations less than 1 mg/kg. Chlordane was found in four of seven soil samples collected in 1990 at levels up to 260 μg/kg.

One sediment sample from the slough (35S01) was tested for pesticides in 1988. It was located near the inlet of the pond Garrison Slough forms adjacent to the source area and showed 0.4 mg/kg of DDD. DDT concentrations were lower, at 0.097 mg/kg. In 1990, a sediment sample (62S04) was collected from the slough adjacent to SS35 just upstream of the pond. In that sample, DDT and DDD were 62.4 and 58.6 mg/kg, respectively.

Surface soil samples from SS35 in 1992 were analyzed for PCBs (such as Aroclor), pesticides, and lead. The results from the PCB analyses were at or below the detection limits reported by the analytical laboratory for soil samples. A summary of these sample concentrations is presented on Appendix A.

The surface soil samples from SS35 in 1992 contained detectable concentrations of 4,4'-DDT and derivative products 4,4'-DDD and 4,4'-DDE (Figures 7.8 and 7.9, respectively). The concentrations were highest for the soil samples taken from anomaly area B. The lowest concentrations of 4,4'-DDT, 4,4'-DDD, and 4,4'-DDE were measured in samples from anomaly area C along the pond shoreline. It is estimated that SS35 contains 765 m^3 (1000 cu yd) of contaminated soil covering a 1500 m^2 (16,000 ft^2) area.

Table 7.5. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, SS35

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
4,4'-DDD	1	23/18	0.4 - 58,500	35SS03
4,4'-DDE	N/A	23/21	0.09 - 19,000	35DIR05
4,4'-DDT	20	23/22	4 - 396,000	35SS03
Aldrin	1	4/1	6.2 - 6.2	35M01
Alpha-BHC	10	8/1	17 - 17	35DIR05
Chlordane	2	23/8	3 - 410	35DIR06
Heptachlor Epoxide	N/A	8/1	13 - 13	35DIR05

7.5.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for SS35 are summarized in Table 7.6. Groundwater samples were collected and analyzed for the constituents listed in Table 5.9. A summary of the sample concentrations for SS35 is presented in Appendix A. In 1992, the measured concentrations of PCBs and DDT and its derivative products 4,4'-DDD and 4,4'-DDE were at or below their reported limits of detection.

Table 7.6. Groundwater Contaminants Greater Than Screening Levels, SS35

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
1,2-Dichloroethane	0.5	12/1	3.2 - 3.2	35GP03
4,4'-DDT	0.1	13/2	0.14 - 0.16	35GP02
Benzene	2	12/1	3.5 - 3.5	35GP03
Beta-BHC	0.05	13/1	0.05 - 0.05	35GP01

Groundwater samples from SS35 in 1992 were also analyzed for several other pesticide and organic contaminants. The concentrations of these compounds in all groundwater samples that were analyzed in August-September 1992 from SS35 were determined to be at or below the limits of detection. Groundwater probes installed in the area showed some BTEX, chlorinated solvent, and lead contamination. 1,1 dichloroethylene (1,1 DCE) was found in 17 of 33 groundwater probes, including 6 probes with concentrations exceeding the drinking water standard. 1,1 DCE was not detected in the deeper monitoring wells. Lead was detected at concentrations ranging up to 68 μg/L, but this is likely due to high turbidity of the samples. None of the water samples collected in 1992 from the eight monitoring wells contained lead in excess of the 15 μg/L screening level.

7.6 Source Area SS36

SS36, a drum storage site, is located in the central portion of the base, east of Industrial Drive and south of the base power plant (see Figure 2.1).

SS36 was used as a mixing area for asphalt cement and the road oiling operations from the late 1960s to the mid-1970s. In 1982, approximately 100 drums containing materials, such as waste oils, hydraulic fluid, diesel, JP-4, Stoddard solvent, and methyl ethyl ketone, were stored in this area. At that time, none of the drums were observed to be leaking; however, evidence of petroleum-contaminated soil and a pool of petroleum-contaminated water appeared near the mixing tank used for asphalt cement and waste oils. A number of laboratory analyses were performed on groundwater and soil samples from SS36 and the constituents are listed in Table 5.10. None of the available references indicate that drums may have been buried at SS36.

A paint spill in the northeast corner of the area was reported in 1989 (SAIC 1989a). The soil contaminated from the paint spill was removed in 1992. The paint spill was the source of the high lead and chromium values in this area. The drum storage location and paint spill area are identified on Figure 7.10.

7.6.1 Soil Contamination

No soil contaminants above EPA risk-based screening levels or background concentrations were identified for SS36. A summary of the sample concentrations for SS36 is presented in Appendix A. One surface soil sample showed a lead concentration of 7800 mg/kg which is significantly above the EPA action level for lead in soil. However, this sample was collected directly from the paint spill area prior to removal of the soil.

7.6.2 Groundwater Contamination

No groundwater contaminants above EPA risk-based screening levels or background concentrations were identified at SS36. Groundwater samples were analyzed for the constituents listed in Table 5.10. A summary of the sample concentrations for SS36 is presented in Appendix A.

BTEX and TCE were detected in a soil gas survey and in 14 groundwater probes installed at SS36. However, no volatile compounds were detected in the 1992 groundwater samples collected from three monitoring wells. One groundwater probe showed a lead concentration (44 μg/L), above the EPA action level for lead in drinking water. However, the groundwater probe samples were used as site screening measurements, and are less accurate than the analysis of groundwater samples from the monitoring wells.

7.7 Source Area SS37

SS37, the Drum Storage/Asphalt Mixing Area, is located approximately 90 m (98.4 yd) east of Building 4333, just east of Flightline Avenue, between Quarry Road and Chena Street (as shown in Figure 2.1). The site was used as a mixing area for road oiling operations and a mixing area for asphalt cement from the mid-1970s to 1986. Some drums of miscellaneous liquid wastes were stored at the source area. Their contents included waste oils, diesel fuels, jet fuels (JP-4), and Stoddard solvent (PD-680). The drums have since been characterized, manifested, and disposed through the base hazardous waste handling facility. None of the drums were observed to be leaking during the IRP Phase I investigation; however, the ground surface appeared to be stained with petroleum, oil, and lubricant (POL) (HMTC 1986). None of the available references indicate that drums may have been buried at SS37. An area south of the storage area was used for fire-training exercises from 1976 to 1981. A number of laboratory analyses were performed on groundwater and soil samples from SS37.

Source area investigations in SS37 were conducted in 1984 (Dames & Moore 1985), in 1986, 1987, 1988 (SAIC 1989b), and in 1992 and 1994 (U.S. Air Force, 1995a,b,c). U.S. Air Force (1992, Tables 10.2 through 10.5) summarizes analytical results from all sampling events.

7.7.1 Soil Contamination

No soil contaminants above EPA risk-based screening levels or background concentrations have been identified for SS37. Surface and subsurface soil samples were collected and analyzed for the constituents listed in Table 5.11. A summary of the sample concentrations for SS37 is presented in Appendix A.

7.7.2 Groundwater Contamination

Benzene at a concentration above drinking water standards was detected in monitoring Well 37-2 in 1986 (26 μg/L) and in Well 37-3 in 1987 (15 μg/L) (SAIC 1989a). All four wells at source area SS37 were sampled in 1992 and benzene was detected in all of the wells, with two of the wells showing concentrations above the MCL (10 and 13 μg/L). Traces of free-phase product were found in one well in February 1992, but were not confirmed in the summer of 1992.

By 1994, concentrations of all groundwater contaminants had decreased to below EPA risk-based screening levels or background concentrations at SS37. Groundwater samples were collected and analyzed for the constituents found in Table 5.11. A summary of the sample concentrations for SS37 can be found in Appendix A.

7.8 Source Areas SS39 and SS63

Asphalt Lake (SS39) and the adjacent Asphalt Lake Spill Site (SS63) are located approximately 2 km (1.2 mi) south of the Eielson AFB main gate. The two areas are separated by a gravel access road. Five groundwater monitoring wells (39M01 through 39M05) exist at SS39, and one groundwater monitoring well (53M02) lies approximately 100 m (109.4 yd) southeast (cross-gradient) of SS63.

Asphalt Lake was used as a disposal area for barrels and drums of asphalt cement after runway construction in the 1950s. As these containers deteriorated and leaked, a layer of asphalt cement up to 45 cm (17.7 in.) deep in places covered an area of approximately 4000 m^2 (1 acre). Besides the physical hazard imposed by the asphalt cement, the primary contaminants of concern were PAHs, which were a component of the asphalt cement. During May and June 1992, the asphalt cement, barrels, approximately 2500 drums, 91,750 m^3 (120,000 cu yd) of petroleum contaminated soil, and other debris were removed. A layer of fill dirt approximately 2 m (6.6 ft) deep was placed over the excavated area in June 1992. No record is shown for disposal activities at SS63.

7.8.1 Soil Contamination

The only soil contaminant to exceed EPA risk-based screening levels or background concentrations at SS39 was DDT, as reported in Table 7.7. A summary of the sample concentrations for SS39 can be found in Appendix A. Soil samples were collected from pits, soil borings, and ground surface soil and analyzed for the constituents found in Table 5.12. Sample locations and diesel kerosene sampling results are presented on Figures 7.11 through 7.14.

Table 7.7. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, SS39

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
DDT	1	26/15	1 - 437	39SB02

7.8.2 Groundwater Contamination

No groundwater contaminants above EPA risk-based screening levels or background concentrations have been identified for SS39/63. Groundwater samples were collected and analyzed for the constituents listed in Table 5.12. A summary of the sample concentrations for SS39/63 can be found in Appendix A.

7.9 Source Area ST58

ST58, site of the old Quartermaster service station, is located on the northwest corner at the intersection of Division Street and Wabash Avenue (Figure 2.1). The service station covered approximately 400 m^2 (478 yd^2).

The Quartermaster service station was operated from 1970 to 1988. The service station was a source of petroleum products for private vehicles operated by Eielson AFB personnel and their dependents until 1975, and for Eielson AFB vehicles only after 1975. The service station used four 95-m^3 (25,000-gal) above-ground storage tanks, containing leaded and unleaded motor gasoline (MOGAS) and diesel. Two barrels of motor oil were stored at the service station for customer use.

Eielson AFB staff removed the above-ground storage tanks and above-ground piping in August 1988. Underground piping was left in place. During removal, workers noted evidence of product releases. No analytical work was performed. The surface was covered with a meter (a yard) of fill after the above-ground storage tanks and piping were removed (Liikala and Evans 1995). No spills have been reported at ST58. However, the pipeline that supplied fuel to ST58 was suspected of leaking at the intersection of Industrial Drive and Division Street, east of ST58. In 1993, approximately 532 cu m (700 cu yd) of fuel-contaminated soil was removed from the area most highly contaminated for a composting demonstration and replaced with clean fill material.

Motor gasoline (MOGAS) and diesel stored and used at the Quartermaster service station appears to have been spilled or leaked from the piping and diesel tanks. Some of the volatile components of petroleum products released at the surface may have evaporated. The less volatile components probably seeped into the soil. The less volatile contaminants may have adsorbed to the soils or been dissolved in surface infiltration and carried to the groundwater. Fuel from large spills, if any occurred, may have moved through the vadose zone and formed a floating layer on the water table. Because the primary potential source of contamination (fuel storage tanks) has been removed, the potential source is now any residual contamination in the soil that could be released to the groundwater. Additional volatilization could occur, if the area is excavated.

Potential contaminants of concern are fuel-related organic compounds (BTEX) and lead. A variety of laboratory analyses for geotechnical and chemical parameters have been performed using different methods. Investigations of the site were carried out in 1991 (Shannon & Wilson 1991), in 1992 (Shannon & Wilson 1992), in 1993 (U.S. Air Force 1994b), and in 1994 (U.S. Air Force, 1995a,b,c). Chemical analyses are summarized in Table 5.13.

7.9.1 Soil Contamination

Two soil-gas survey methods were used during June 1993 to identify heavily contaminated soil for use in an ex situ remediation demonstration. Soil samples were collected from 17 test pits, using a backhoe, and analyzed for VOCs, TPH-G, TPH-D, and lead.

The most contaminated soils were found in the central part of ST58 at the 1- to 1.7- and 2.7- to 3-m (4- to 5.5- and 9- to 10-ft) sampling intervals. Soils were contaminated with benzene and TPH (gasoline) in significant concentrations, as shown in Table 7.8. This soil was subsequently excavated for a composting demonstration. Significantly lower BTEX concentrations were found in the 0.1-m (0.5-ft) samples (for example, benzene, 52 μg/kg to detection limit). No chlorinated hydrocarbons were detected in any of the samples (Liikala and Evans 1995).

Table 7.8. Surface and Subsurface Soil Contaminants Greater Than Screening Levels, ST58

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
Benzene	10	51/26	12 - >90,100	8E/5 ft
TPH-G	30,000	60/9	26,000 - 19,900,000	7E/5 ft

Source: Liikala and Evans, 1995; p. 3.21.

7.9.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for ST58 are summarized in Table 7.9. Groundwater samples were collected and analyzed for the constituents listed in Table 5.13. A summary of the sample concentrations for ST58 can be found in Appendix A and in Liikala and Evans (1995).

Investigations conducted during the fall of 1991 and winter of 1992 indicated that benzene concentrations in the groundwater downgradient of source area ST58 were greater than the drinking water standard. Toluene, ethylbenzene, and xylene were also detected.

In April 1993, groundwater samples were collected from the same wells. Benzene concentrations above the drinking water standards were again found in several locations. Toluene and total xylenes were also detected. Gasoline-range petroleum hydrocarbons at a concentration of 200 μg/L were detected in one well. Diesel-range petroleum hydrocarbons, ranging in concentrations from 0.1 to 99 μg/L, were detected in 9 of 12 wells. Samples were analyzed for lead and it was found in concentrations above the EPA action level (15 μg/L) in all of the source area wells.

A follow-on investigation was conducted in the fall of 1994. Lead and benzene concentrations in the groundwater remain above the drinking water standard. The extent of benzene and lead contamination is shown in Figures 7.15 and 7.16.

All contaminants detected at ST58 were in aqueous form. No floating product was encountered, but it is likely that past fuel releases resulted in transient product plumes that have since dissipated after the service station was closed and the buried supply pipeline removed from service.

Table 7.9. Groundwater Contaminants Greater Than Screening Levels, ST58

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Benzene	5	13/6	3.7 -180	58MW08
Gasoline	2000	14/1	261,000 - 261,000	58MW09
Lead	5	14/13	35 - 180	58MW12

7.10 Source Area SS64

SS64, the Transportation Maintenance Drum Storage Area, is located in the center of the developed portion of the base, just north of the Water Treatment Plant pond on Garrison Slough, on the west side of the Vehicle Maintenance Shop (Building 3213) (Figure 2.1). SS64 and an area south of Building 3213 (officially part of SS61) were used for an unspecified number of years as a storage and staging area for drums containing hazardous materials and waste. Drums collected from routine base operations and cleanup were stored at this area until they were shipped for disposal.

In 1986, the EPA found 550 208-L (55-gal) drums labeled methanol, paint waste, lacquer, thinners, oils, acids, and asphalt at SS64. These drums were in poor condition and leaking. In 1987, the EPA reported that additional drums had been brought to SS64 since the 1986 survey. Approximately 160 drums were labeled as paint materials, and 300 drums were labeled as solvents including methyl ethyl ketone and cyclohexylamine. Six 322-L (85-gal) overpack drums were labeled as PD-680 solvent and paint thinner. Other inspection reports indicated that drums that were in other source areas during previous compliance inspections had been transferred to SS64. In 1989, the approximately 900 drums from SS64 were disposed of by base Hazmat personnel. At that time, stained soils were excavated and removed from SS64.

7.10.1 Soil Contamination

The drums stored at SS64 leaked and were the source of soil contamination. The locations of the leaking drums are not known, but they are assumed to have been located randomly, each producing a discontinuous spot of contamination. The contents of drums leaked onto the soil and then either evaporated, leached into the subsurface via precipitation, or remained on the surface soils as stains. In 1989, the last drums were removed, eliminating that source. At that time, surface spills were cleaned up, contaminated soil removed, and the area was graded and gravel added to prepare it as a parking lot. Because of the graveling and grading activities at SS64, surface soil sampling was not performed. Because contaminated soils were removed in 1989, subsurface soil sampling was not performed.

7.10.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for SS64 are summarized in Table 7.10. Samples were collected and analyzed for the constituents listed in Table 5.14. A summary of the sample concentrations for SS64 is presented in Appendix A.

The objective of the sampling was to check groundwater beneath the area where drums were stored for constituents that were contained in the drums. Groundwater was sampled to determine if drum contents reached the water table.

The only contaminants of concern that were detected were TCE, tetrachloroethene, and trans-1,2-dichloroethene. These constituents were detected only in Well 64MW01, in the downgradient position, at concentrations less than MCLs, but greater than the risk-based screening levels. Because of the close proximity of SS61 where elevated concentrations of these constituents were detected, this measurement may indicate that groundwater in this area is impacted by SS61.

Table 7.10. Groundwater Contaminants Greater Than Screening Levels, SS64

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
Tetrachloroethene (PCE)	0.5	4/2	0.82 - 1.7	64MW01
Trichloroethene (TCE)	0.5	4/2	0.6 - 2.7	64MW01

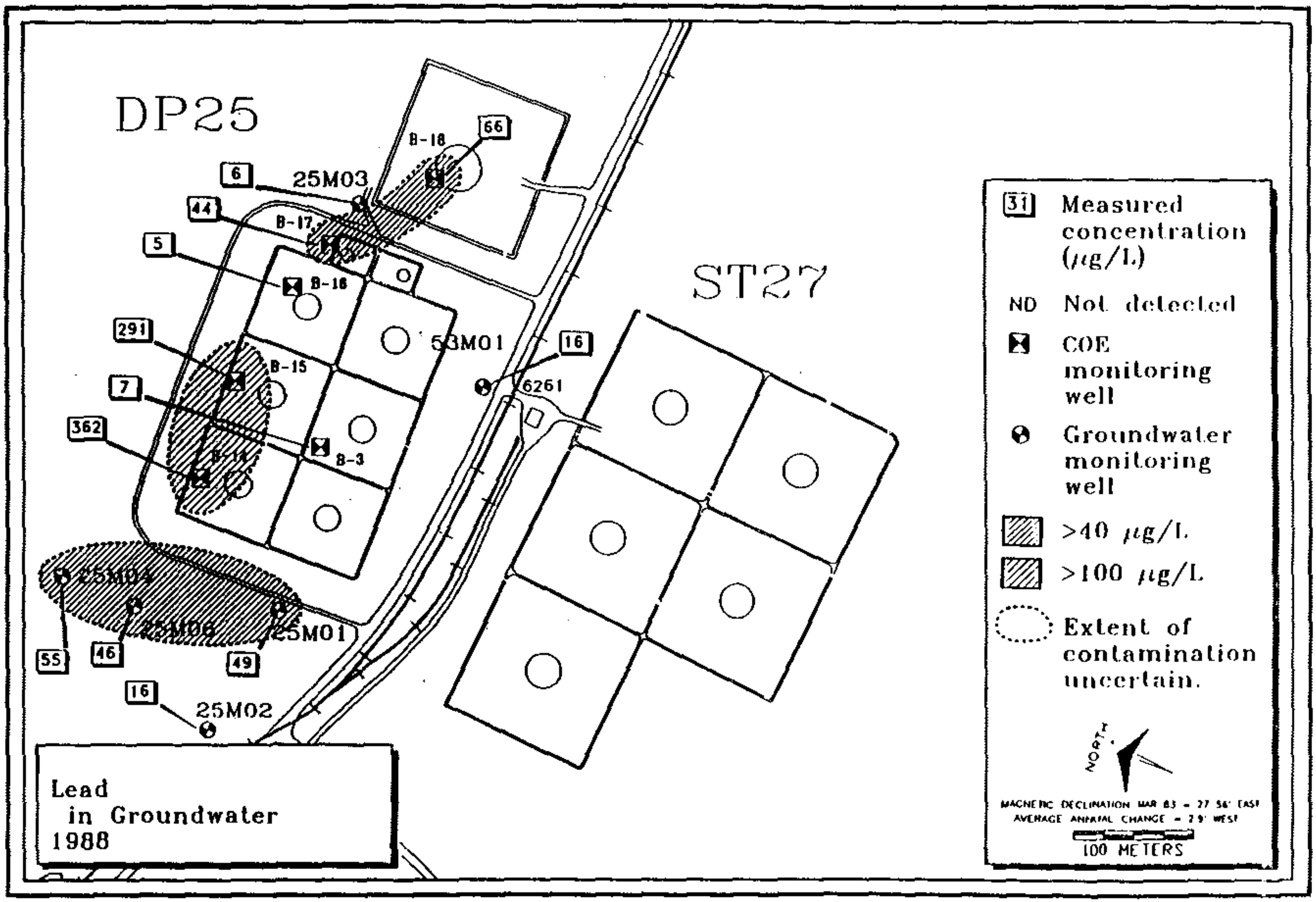


Figure 7.1. DP25, Lead in Groundwater (1988)

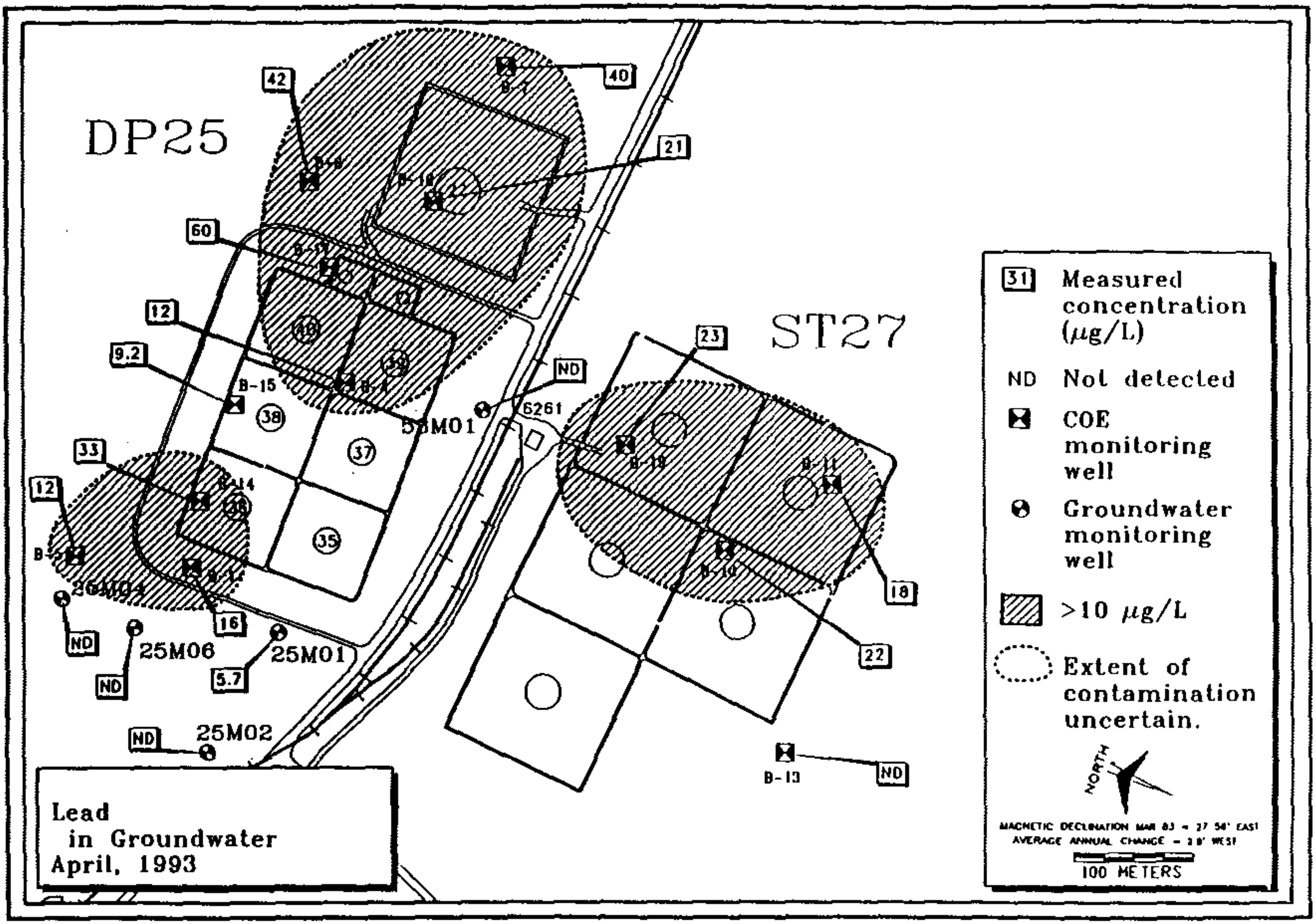


Figure 7.2. DP25, Lead in Groundwater (April 1993)

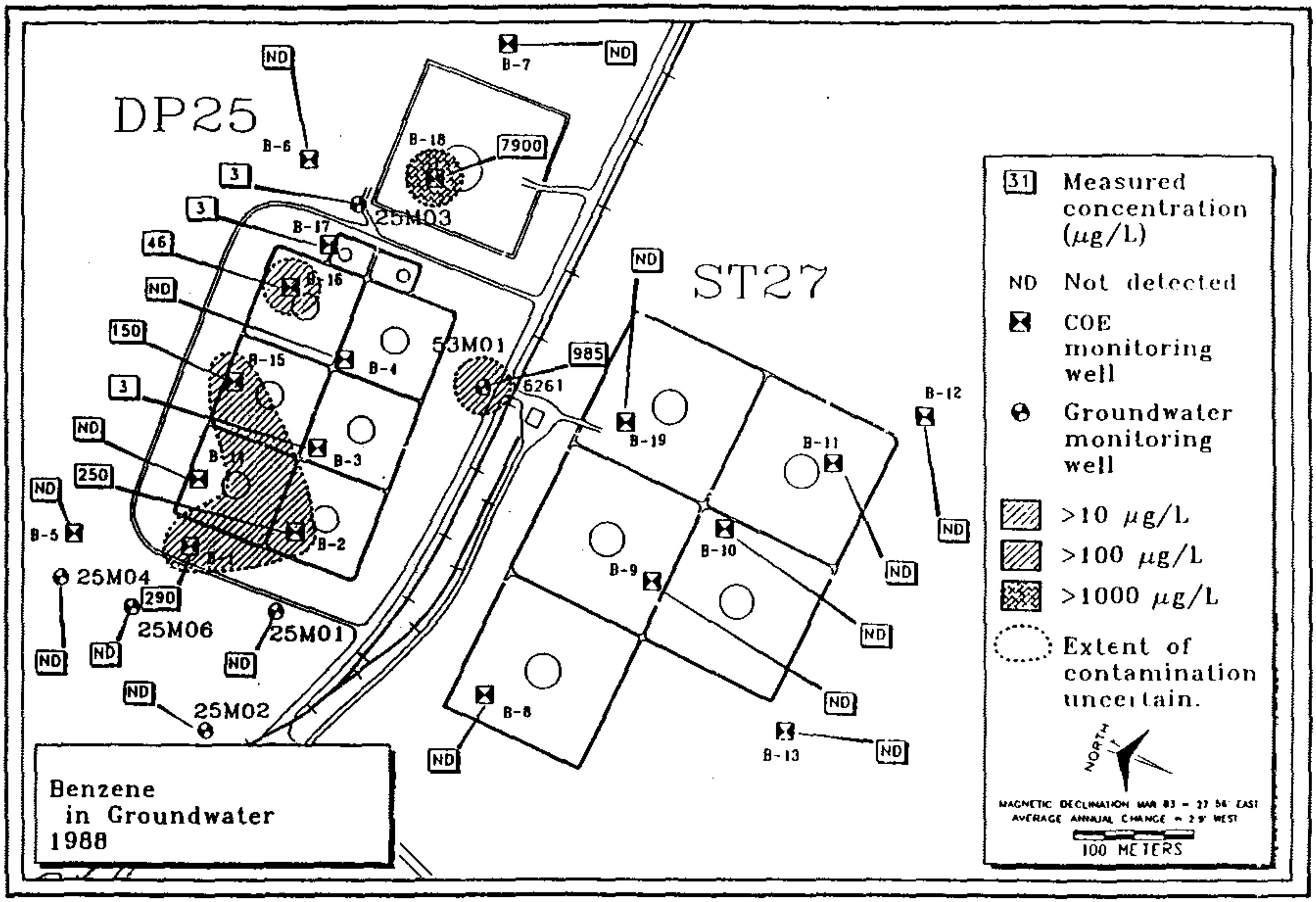


Figure 7.3. DP25, Benzene in Groundwater (1988)

and an additional casing for well

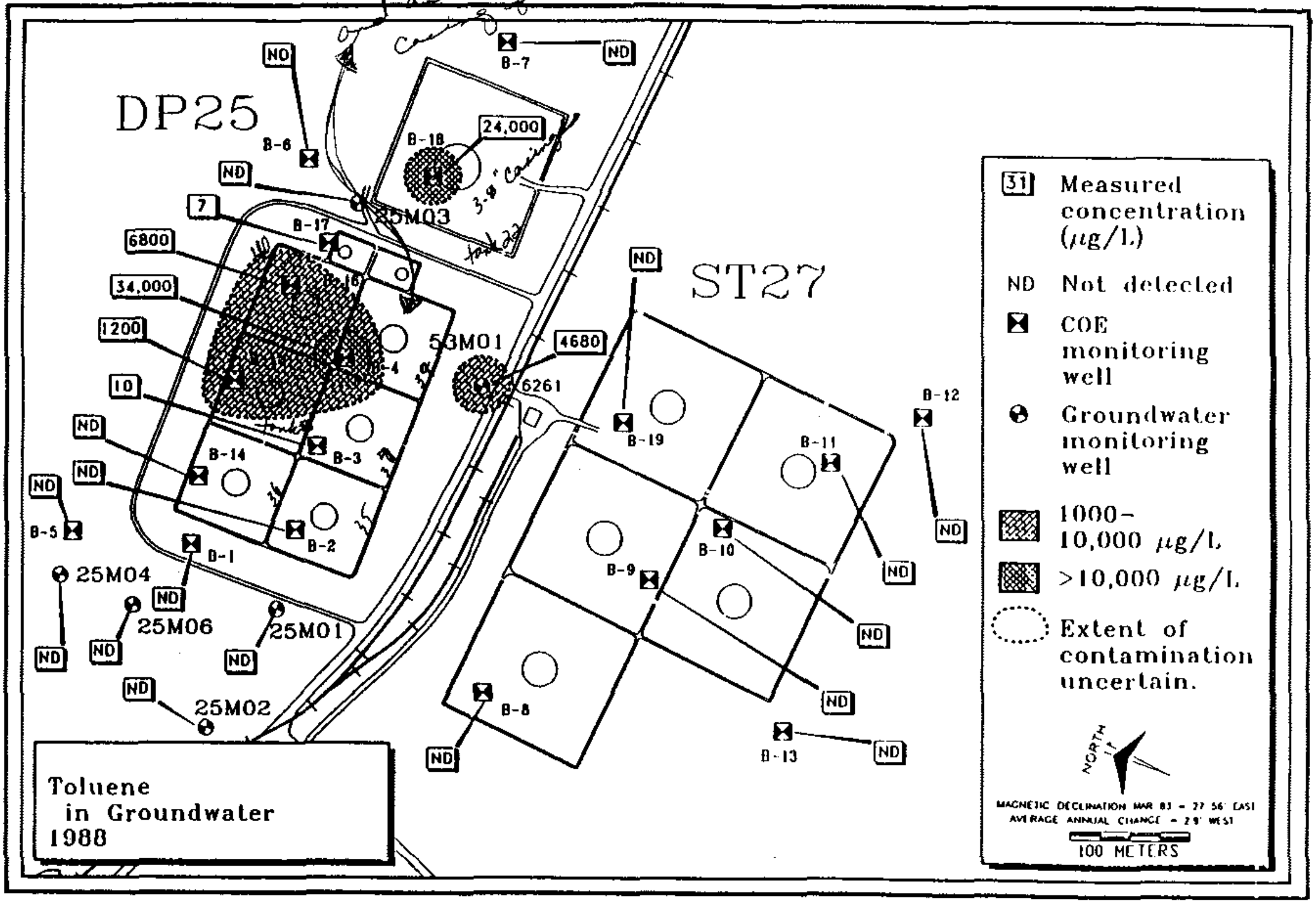


Figure 7.4. DP25, Toluene in Groundwater (1988)

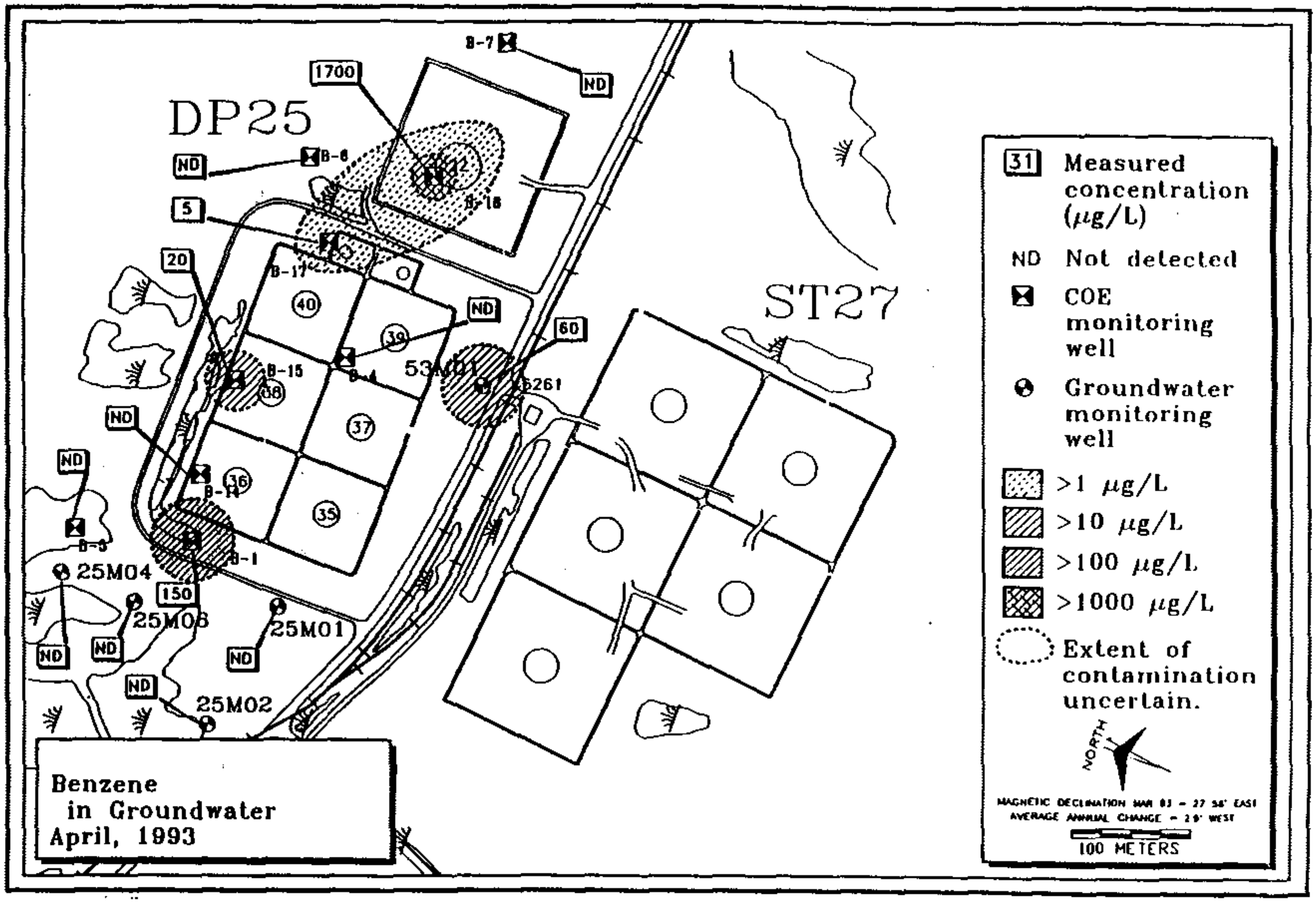
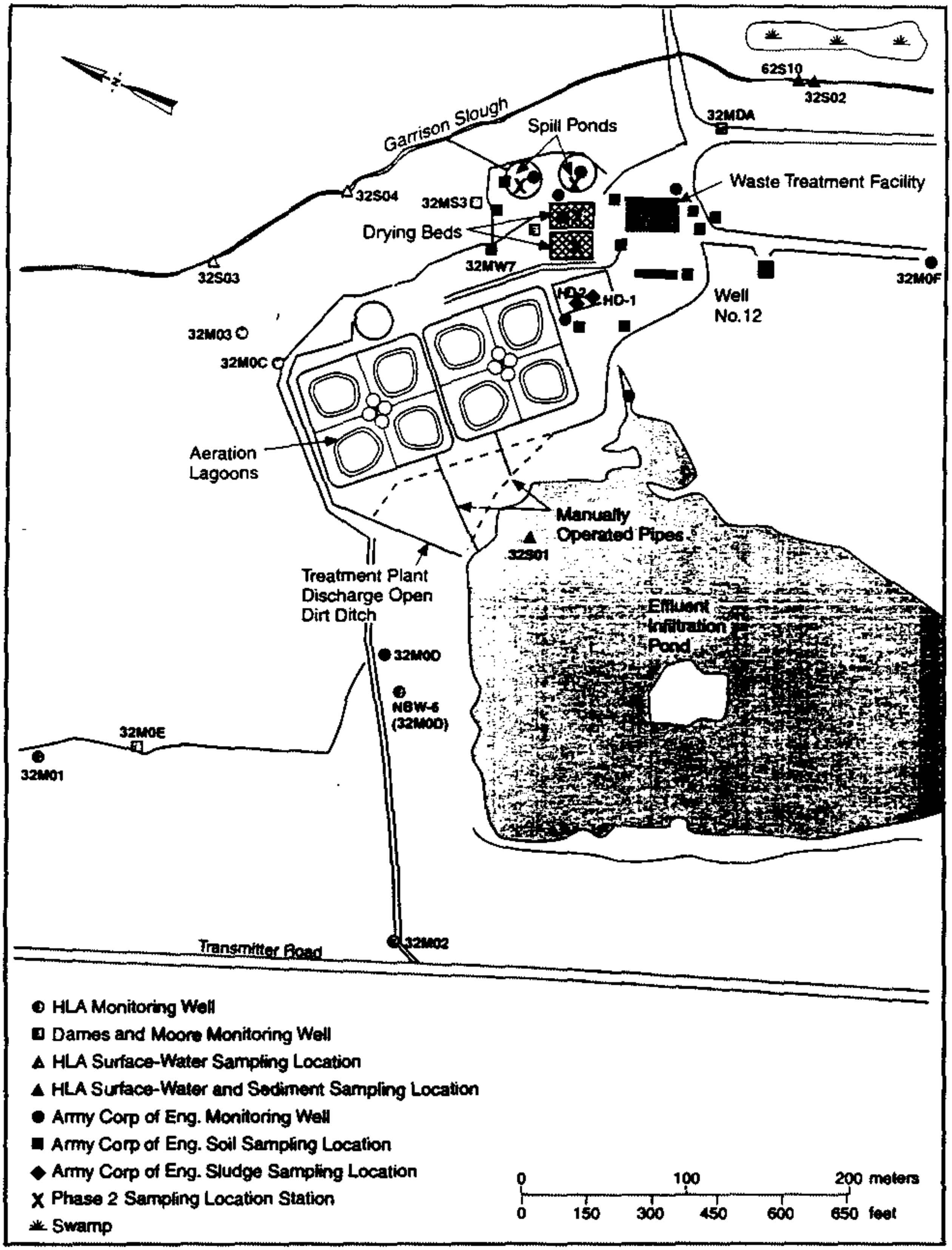


Figure 7.5. DP25, Benzene in Groundwater (April 1993)



S9306040.1

Figure 7.6. WP33, Site Map

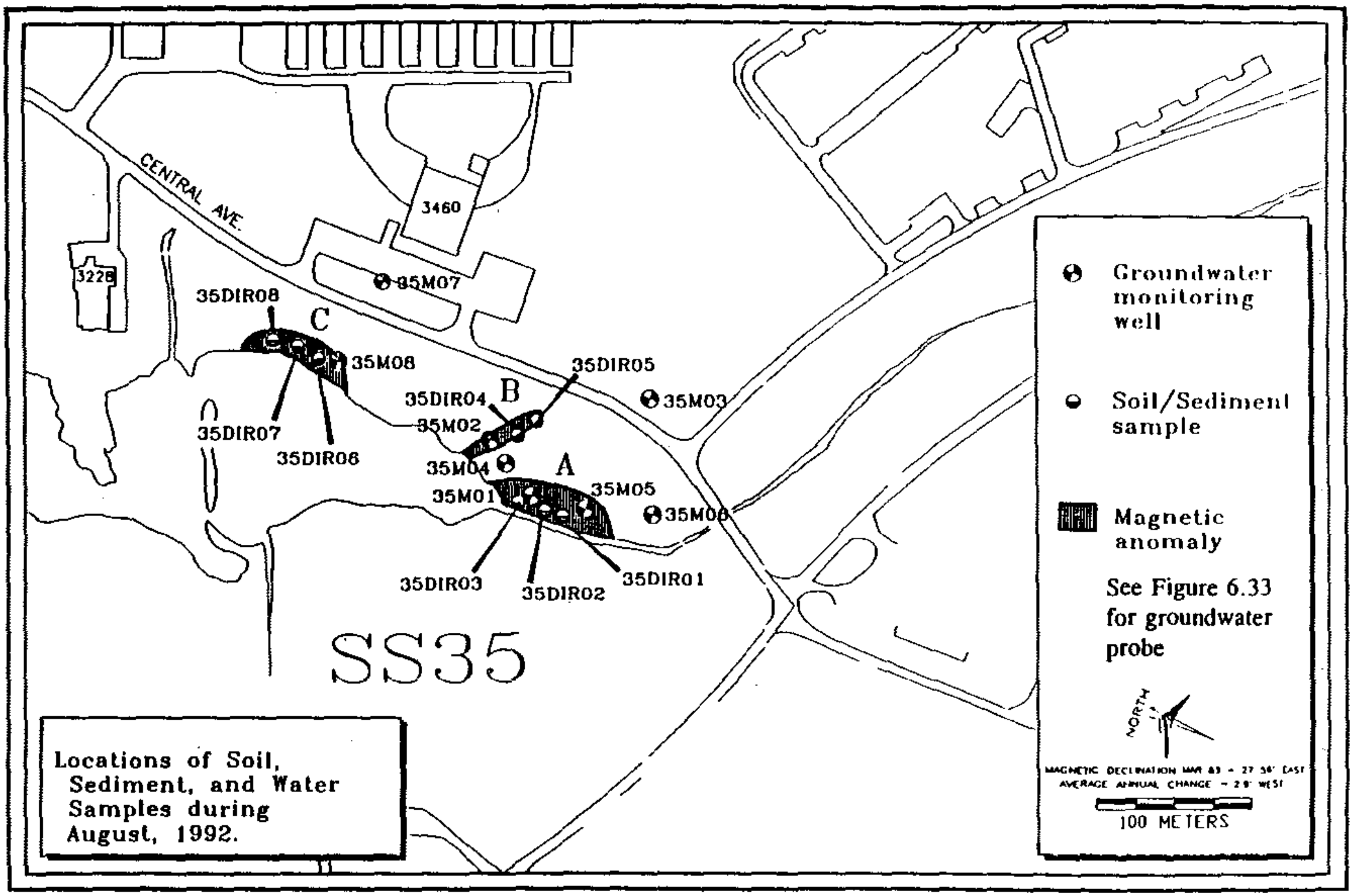


Figure 7.7. SS35, Locations of Soil, Sediment, and Water Samples during August, 1992

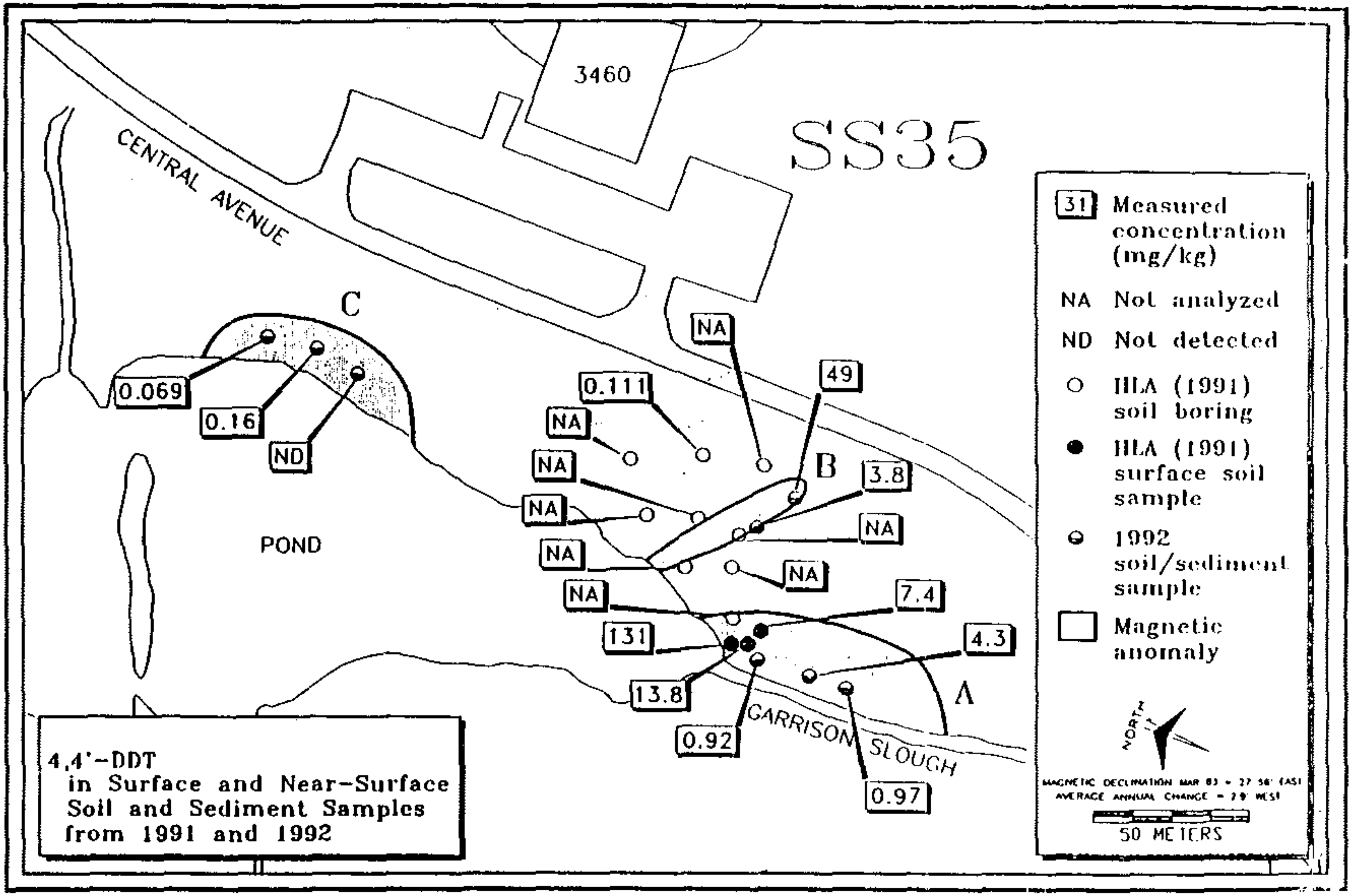


Figure 7.8. SS35, DDT in Surface and Near-Surface Soil and Sediment Samples (1991 to 1992)

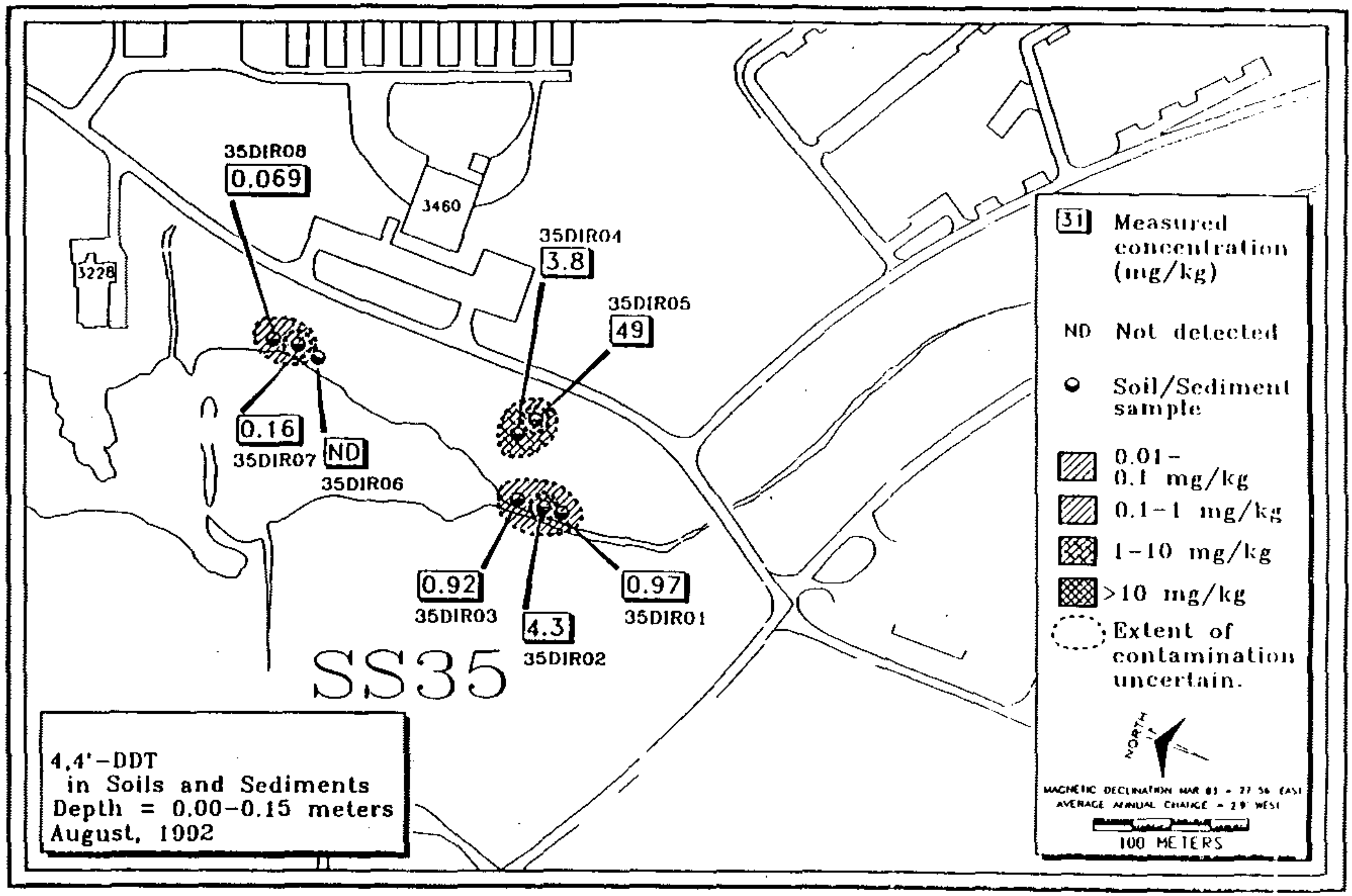


Figure 7.9. SS35, 4,4'-DDT in Soils and Sediments Depth = 0.00-0.15 meters (August 1992)

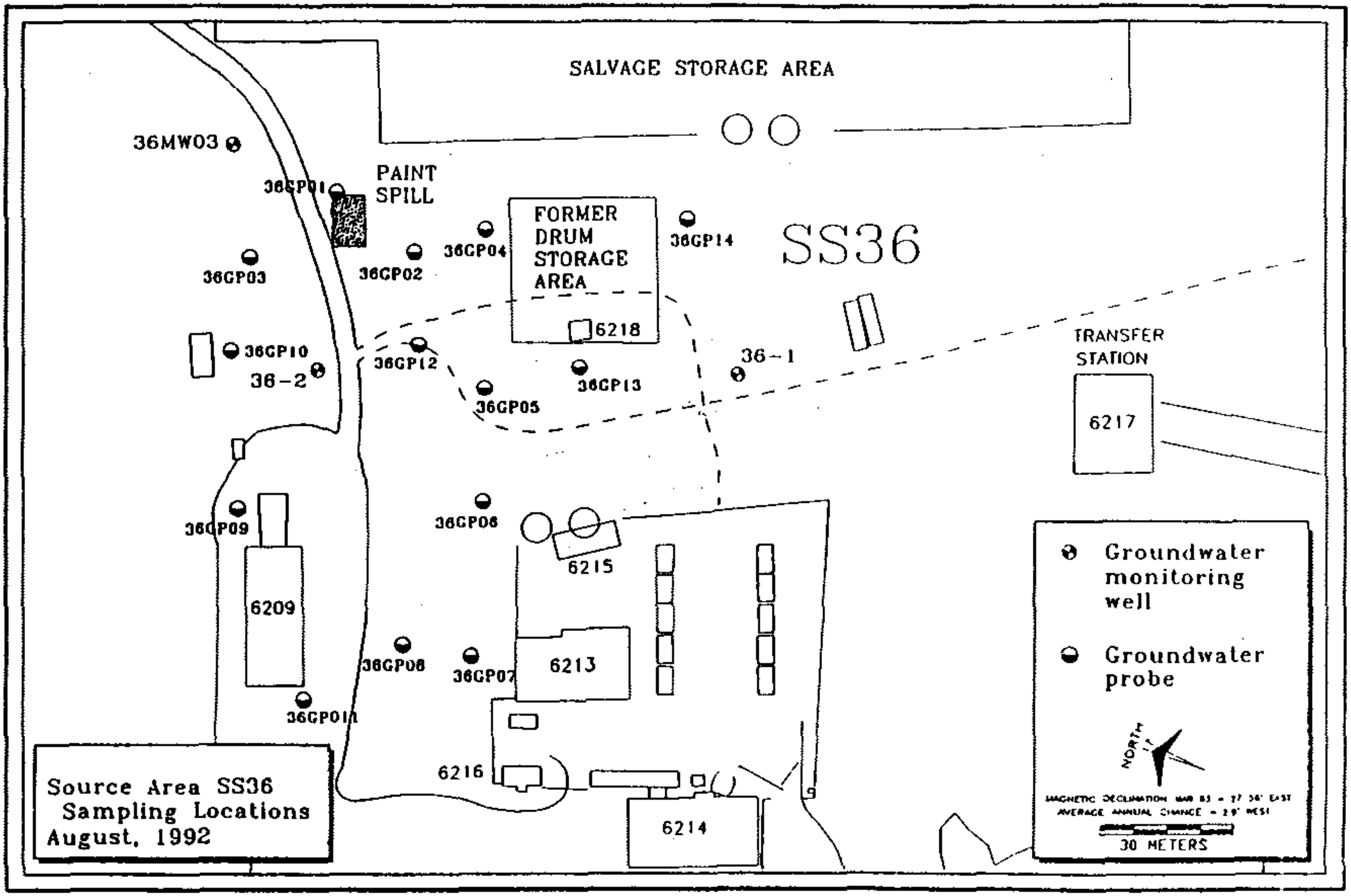


Figure 7.10. SS36, Sampling Locations

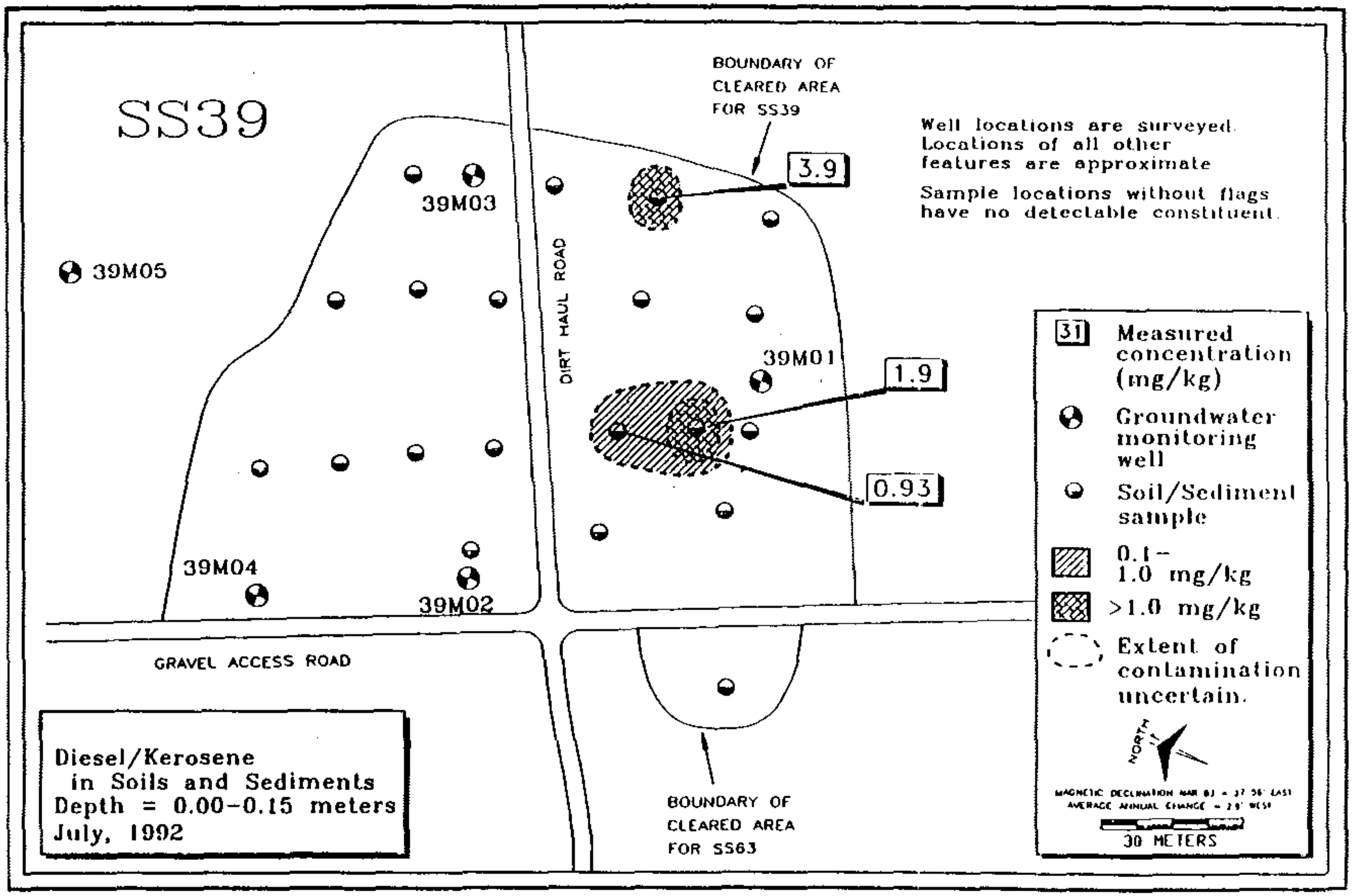


Figure 7.11. SS39, Diesel/Kerosene in Soils and Sediments Depth = 0.00-0.15 m (July 1992)

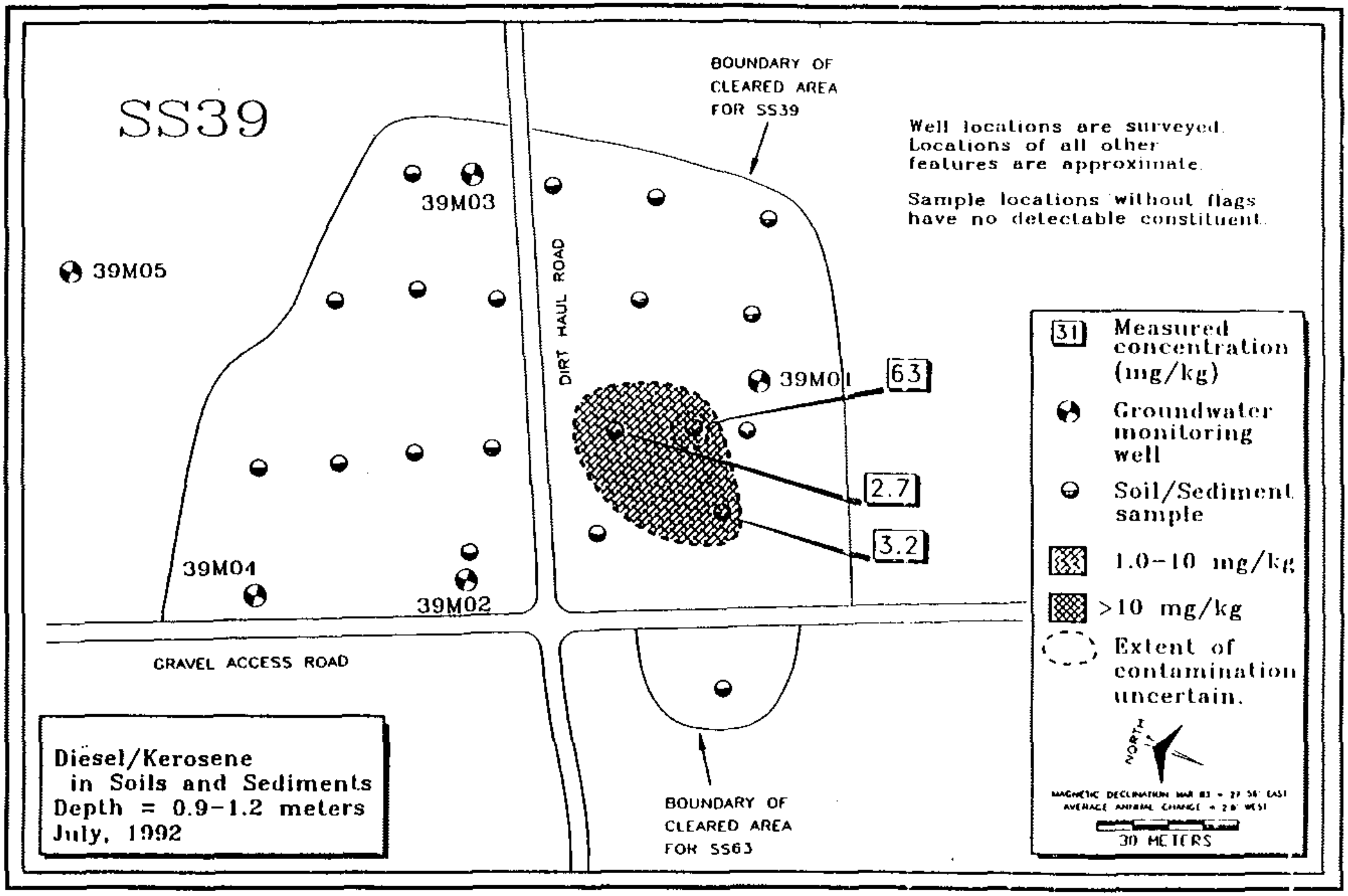
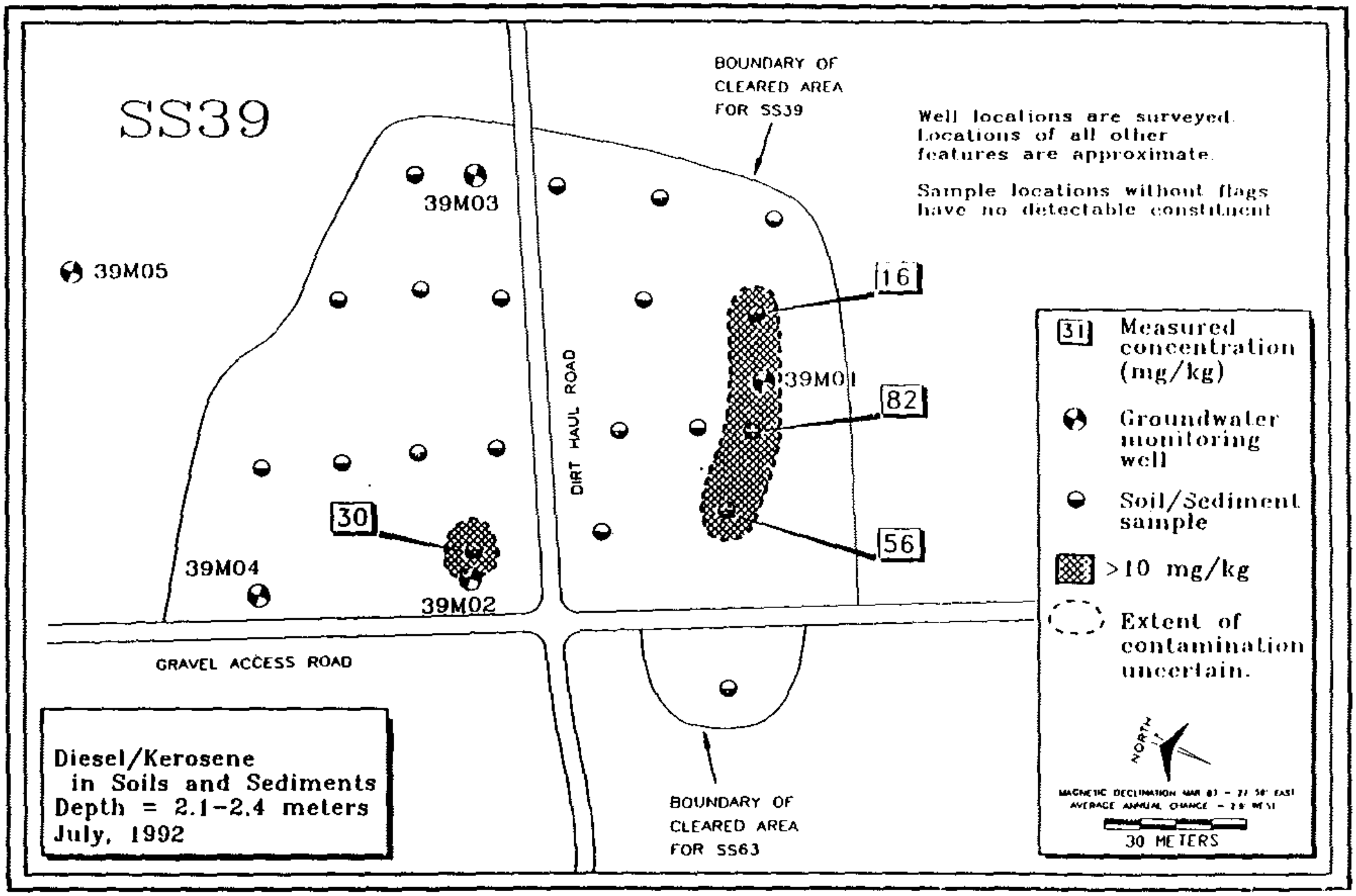


Figure 7.12. SS39, Diesel/Kerosene in Soils and Sediments Depth = 0.9-1.2 m (July 1992)



Well locations are surveyed. Locations of all other features are approximate.

Sample locations without flags have no detectable constituent

Figure 7.13. SS39, Diesel/Kerosene in Soils and Sediments Depth = 2.1-2.4 m (July 1992)

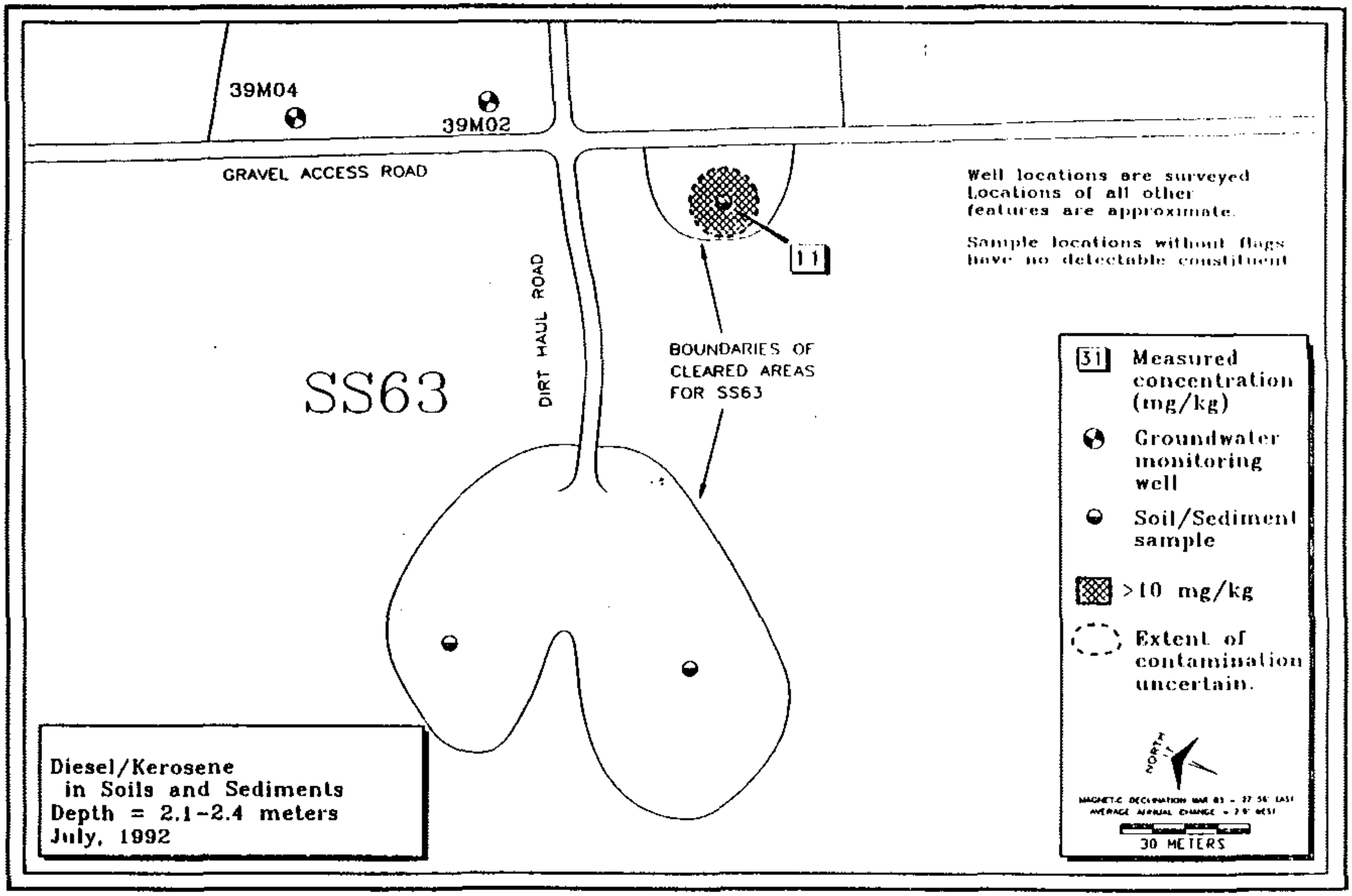


Figure 7.14. SS63, Diesel/Kerosene in Soils and Sediments Depth = 2.1-2.4 m (July 1992)

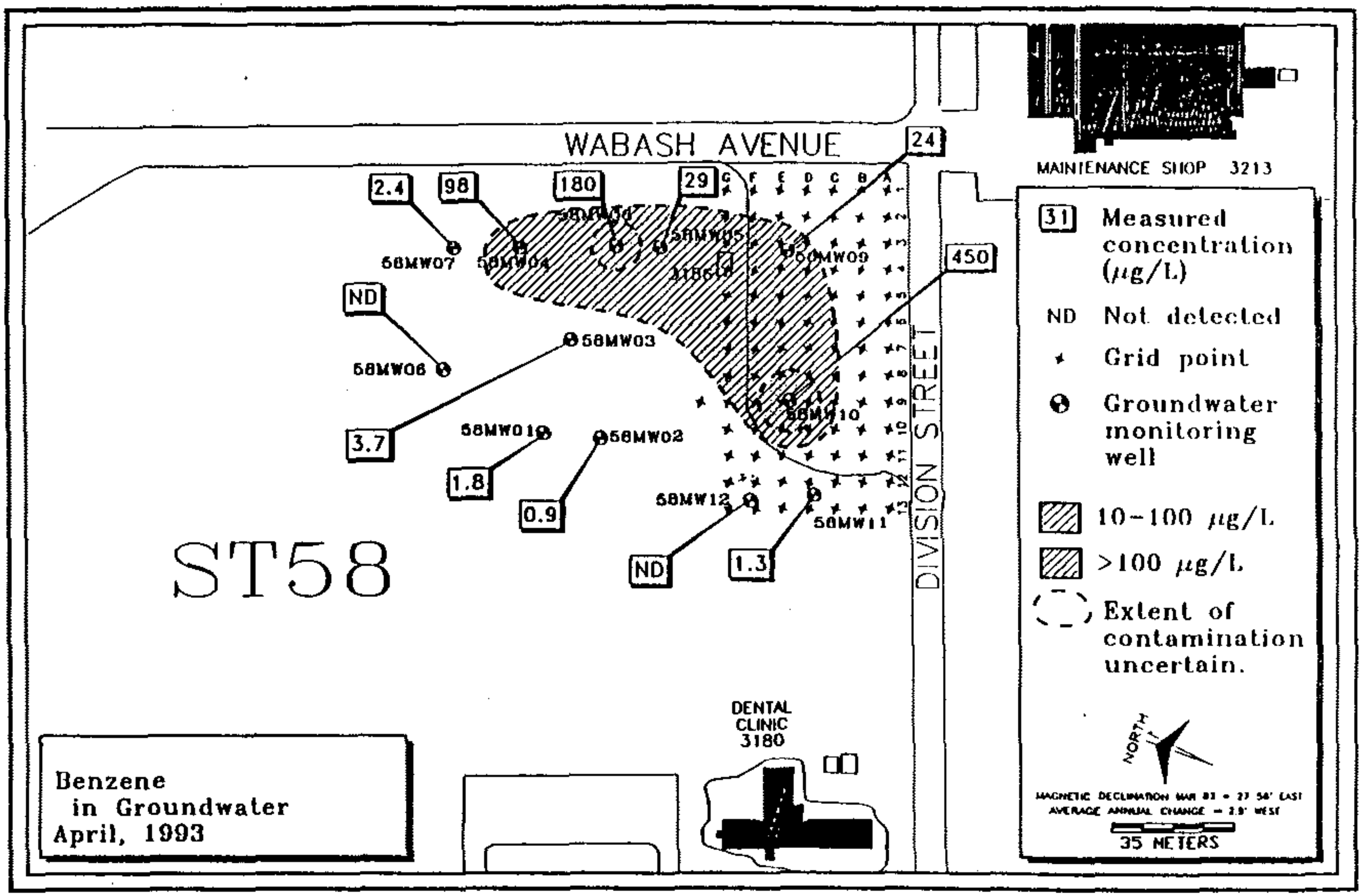


Figure 7.15. ST58, Benzene in Groundwater (April 1993)

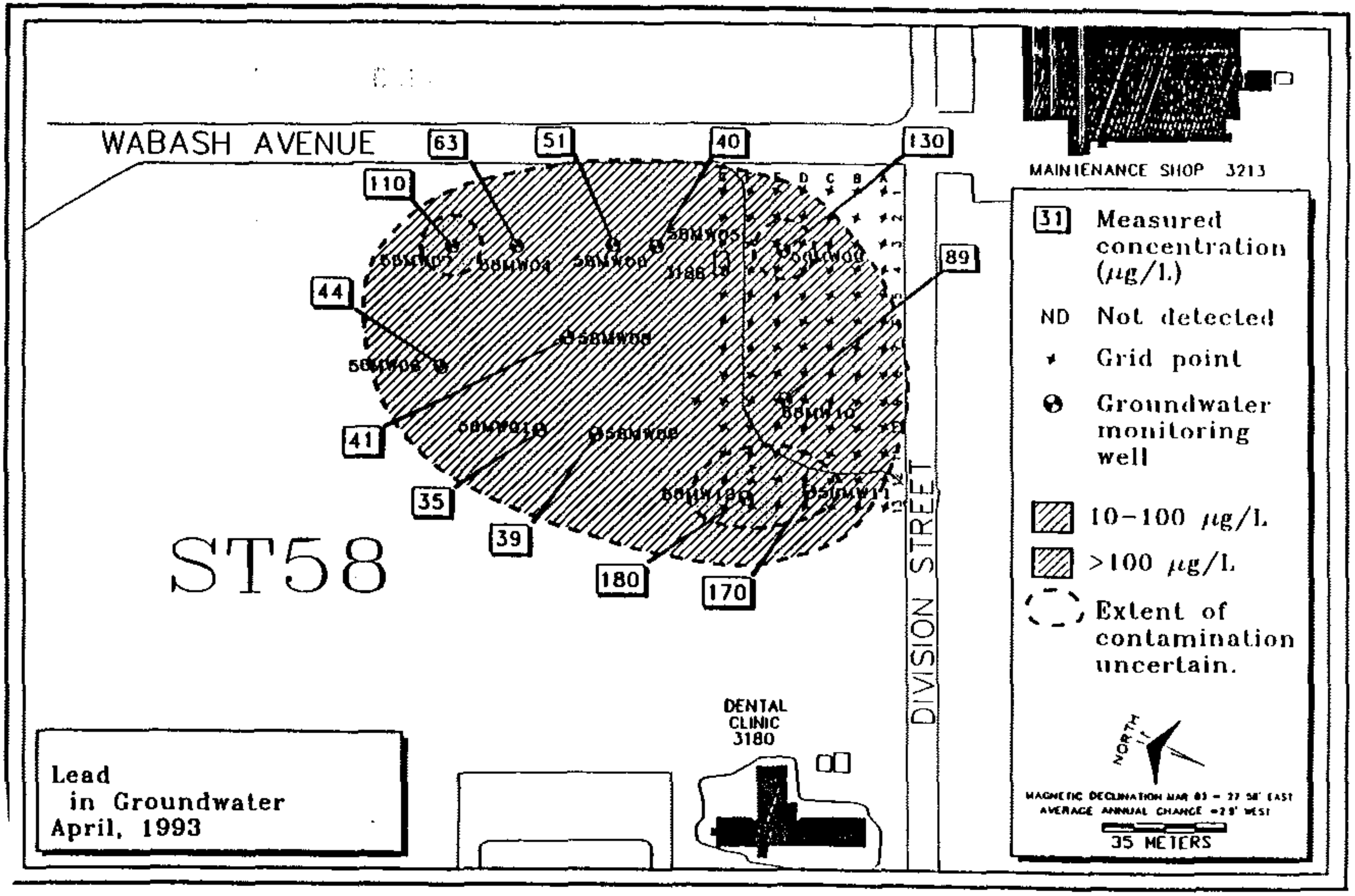


Figure 7.16. ST58, Lead in Groundwater (April 1993)

8.0 Nature and Extent of Contamination at Operable Unit 5

This section discusses the nature and extent of groundwater and soil contamination at source areas in Operable Unit 5 (OU 5). OU 5 includes LF02, LF03, LF04, and LF06, which are landfills. FT09, a former fire-training area, is located on LF03 and included in OU 5.

8.1 Contaminants of Concern

The contamination detected and characterized at the OU 5 source areas is primarily a result of land disposal practices. In addition, contamination caused by the burning of aviation fuels is present at FT09. Contaminants of concern in groundwater at LF03/FT09 include the volatile organic compounds (VOCs) benzene and vinyl chloride. Contaminants of concern in soil include total petroleum hydrocarbons (TPHs) and polycyclic aromatic hydrocarbons (PAHs) resulting from the incomplete combustion of fuel used in fire-training exercises. Contaminants of concern at LF02 and LF06 include metallic and nonmetallic elements.

8.2 Source Area LF02

LF02 is an abandoned, approximately 6-acre (2.4 hectares) landfill located about 0.8 km (250 ft) northwest of the intersection of Manchu Road and Gravel Haul Road on the banks of French Creek, a tributary of Moose Creek (Figure 2.1). LF02 is about 122 m (133.4 yd) west of Bear Lake, a 370-m^2 (3980-ft^2) surface water body. A gravel road provides access from Gravel Haul Road. LF02 boundaries were located through a surface electromagnetic survey (HLA 1989). The minimum distance from the site to French Creek is about 6 m (6.6 yd) (Figure 8.1).

LF02 was used as the primary base landfill from 1960 to 1967 and received domestic and base operations waste. Refuse was burned from 1960 until 1964, when this practice was discontinued. Burial of refuse continued until 1967, when the landfill was closed and capped. Capping material included soil and fly ash from the base power plant. The cap was graded and has been maintained since closure; it appears to be in good condition in the center of the landfill. At the edges, debris is scattered on the surface, including miscellaneous household items, paper trash, metal and glass fragments, scrap lumber, and construction debris. The area has been used as a snow removal disposal area, and for at least 9 months of the year, a layer of scraped snow and ice overlies the cap. This snow layer is piled 6- to 9-m (20- to 30-ft) deep on the margins of the landfill and somewhat less near the center. During annual breakup, the snow melts and an unknown amount of water infiltrates the landfill.

8.2.1 Soil Contamination

No soil contaminants were present in LF02 soils in excess of EPA risk-based screening levels or background concentrations. A summary of sample concentrations is presented in Appendix A. Soil samples were collected and analyzed for the constituents listed in Table 5.15.

8.2.2 Groundwater Contamination

No groundwater contaminants were present in excess of EPA risk-based screening levels or background concentrations. Groundwater samples have been collected and analyzed for the constituents listed in Table 5.15. A summary of sample concentrations is presented in Appendix A.

8.3 Source Area LF03/FT09

LF03 is located east of the south end of the runway and north of the refueling loop (see Figure 2.1). FT09 is located within the west-central part of LF03. LF03 and FT09 are approximately 39.5 hectares (98.8 acres). LF03 was used as the main base landfill from 1967 to 1987. The landfill received household garbage, scrap lumber and metal, construction debris, concrete slabs, empty cans and drums from flightline industrial shops, and possibly waste oils, spent solvents, and paint residues and thinners. The six trenches on the east side of the landfill received most of the waste after 1980. The landfill excavation reportedly extended below the water table. The landfill boundaries were established by geophysical surveys performed by HLA in 1988 and 1989. Potential sources of contamination include the leaching of landfill debris by groundwater, and subsurface soil and groundwater contamination by leaks from buried drums or cans. Because of the large number of potential contaminant sources on a landfill, samples were analyzed for a variety of constituents, as shown on Table 5.16.

Fire-training exercises at FT09 occurred from 1955 to 1989 and involved burning waste oils, contaminated fuels, and spent solvents. Procedures used during the most recent exercises involved saturating the ground with approximately 20,000 L of water, applying fuel, burning the fuel for 30 seconds, and extinguishing it with foam. A mixture of 2000 to 4000 L of clean JP-4 and up to 800 L of contaminated JP-4 was used in these exercises. Fire-training exercises were conducted at least twice per month. Expected contaminants from FT09 include fuel-related compounds (BTEX) and chlorinated solvents. The mock jet was removed in 1994. A new lined fire training facility is currently under construction.

8.3.1 Soil Contamination

Soil contaminants greater than EPA risk-based screening levels or background concentrations for LF03/FT09 are summarized in Table 8.1. A summary of sample concentrations for LF03/FT09 is presented in Appendix A. Soil samples were collected and analyzed for the constituents listed in Table 5.16.

Sample results delineated several areas of soil with TPH concentrations greater than 100 mg/kg. An area of surface contamination approximately 30 by 60 m (98.4 by 196.9 ft) was delineated near a mock-up jet fighter used for fire-training exercises. An area of subsurface contamination was identified west of the mock-up jet, at a depth of approximately 1 to 2 m (3.3 to 6.6 ft) bls, which is just above the water table. The subsurface TPH contamination may be the result of fire-training activities (such as spilled fuel) or leakage from landfill debris.

As a result of the TPH survey, samples were collected adjacent to the former site of the mock-up jet. PAHs were detected in all of these samples at concentrations ranging from 75 to 410 mg/kg. The greatest number of PAHs was detected in surface soil sample 03SYS05, at the west end of the mock-up jet. In addition, kerosene was detected in all but one sample. Naphthalene and 2-methylnaphthalene,

Table 8.1. Soil Contaminants Greater Than Screening Levels, LF03/FT09

Chemical	Detection Limit (μg/kg)	Analyzed/ Detected	Concentration Range (μg/kg)	Location of Maximum
1,2 Dichloroethylene	100	10/1	300 - 300	03M02
Benzo(a)anthracene	660	9/2	84 - 181	03SYS05
Benzo(a)pyrene	660	9/3	79.1 - 200	03SYS05
Benzo(b)fluoranthene	660	9/3	83 - 250	03SYS05
Benzo(ghi)perylene	660	9/1	200 - 200	03SYS05
Indeno(1,2,3-cd)pyrene	660	9/1	200 - 200	03SYS05
Kerosene	N/A	10/10	48 - 1,590,000	03SS09

which are commonly found in JP-4 fuel, were detected in two samples. The presence of these compounds may be attributed to incomplete combustion of fuel used in fire-training exercises.

8.3.2 Groundwater Contamination

Groundwater contaminants greater than EPA risk-based screening levels or background concentrations for LF03/FT09 are summarized in Table 8.2. A summary of the groundwater sample concentrations is presented in Appendix A.

Table 8.2. Groundwater Contaminants Greater Than Screening Levels, LF03/FT09

Chemical	Detection Limit (μg/L)	Analyzed/ Detected	Concentration Range (μg/L)	Location of Maximum
1,4-Dichlorobenzene	10	79/2	64 - 82	03M08
Benzene	1	22/4	1.7 - 20	03M08
Tetrachloroethane (PCE)	0.5	22/1	53 - 53	03M08
Trichloroethane (TCE)	0.5	22/6	0.64 - 150	03M08
Vinyl chloride	0.5	22/5	0.54 - 17	03M08

Sampling results, prior to 1994, indicated the presence of VOCs in groundwater at LF03/FT09 (see Figure 8.2). Leakage from a subsurface JP-4 fuel pipeline approximately 76 m (83 yd) upgradient of Well 03M13 had been cited as a possible source of benzene contamination; however, no toluene, ethylbenzene, or xylene were detected in samples with the highest benzene concentrations. No floating product was encountered. The presence of benzene without the other fuel-related VOCs is characteristic of the leading edge of a plume from an upgradient source because benzene is more mobile than the other constituents. Another possibility is the benzene plume may have originated from a source in the fire-training area. Solvents were also detected in groundwater at LF03, prior to 1994.

Groundwater sampling results in 1989 delineated plumes of trichloroethane (TCE) near Well 03M08 and vinyl chloride near Well 03M01. TCE was not detected in samples collected downgradient of Well 03M08 and, therefore, is probably caused by a localized leak from landfill debris. The plume appeared to have originated near Well 03M01 and extended to the north, toward Garrison Slough.

These solvents were most likely derived from leaking containers of spent solvent in the landfill. Low concentrations of solvents were also detected in the 1992 groundwater samples.

By the time of the sampling event in August 1994, benzene and chlorinated solvents were below MCLs (and in many cases below detection limits) in all wells in LF03/FT09 and SS37, except for Well 03M08 (see Figures 8.2 through 8.5). This well contained relatively high concentrations of a number of contaminants (see Table 8.2), including 4-methyl phenol (p-cresol), dichlorodifluoromethane (Freon-11), and trichlorofluoromethane (Freon-12). Analyses were not reported for Well 03M08 in a previous investigation by HLA (1989) because of analytical difficulties. Well 03M08 was not sampled in 1992. This well is located in the eastern portion of LF03 in the area of the waste trenches, which were used after 1980.

Contaminated groundwater from LF03/FT09 has not migrated beyond the landfill boundaries.

8.4 Source Area LF04

LF04 is located approximately 5 km (3 mi) east-northeast of the south end of the runway (see Figure 2.1) and covers an area of greater than 100,000 m^2 (24.7 acres) (HLA 1989). LF04 reportedly received general refuse, small quantities of waste oil and spent solvents, and possibly small amounts of munitions and spent cartridges. A number of laboratory analyses were performed on groundwater and soil samples from LF04. The Army originally used the site to store ammunition in bunkers. Access to LF04 is currently restricted because of its designation as an emergency ordnance demolition area, where small munitions are incinerated in a burning kettle. Geophysical surveys conducted by HLA in 1988 and 1989 established the approximate boundaries of the landfill.

No significant surface or subsurface contamination has been detected at LF04. Small areas of TPH have been detected at concentrations of less than 250 mg/kg. No TNT or RDX compounds, resulting from ordnance activities, have been detected. Under a separate federal program, the Air Force has submitted a closure plan for the ordnance area at LF04 under RCRA, Section 3008(a).

8.5 Source Area LF06

LF06, the old landfill, is located near the central power plant just south of the power plant cooling pond on the eastern side of the main developed portion of Eielson AFB (Figure 2.1). The landfill is approximately 348 m (1000 ft) north of Hardfill Lake (Figure 8.6). From 1959 to 1963, LF06 was used as a secondary landfill to the original base landfill (LF01, used in the 1950s) and the old base landfill (LF02, used from 1960 to 1967). The landfill has been covered with a loose sand cover that is maintained by periodic grading.

LF06 reportedly received large construction and metal debris and smaller quantities of general refuse (such as wood, empty drums, and paint containers) from the flightline industrial shops (CH2M Hill 1982). Because most of the base refuse would have been disposed at other sites, only small quantities of waste paint, thinners, and spent solvents were assumed to have been present as drum residuals at LF06. Also, other liquid wastes, such as spent solvents, would likely have been disposed only in 1959, because beginning in 1960, refuse disposed of in LF02 was first burned and then buried. Therefore, only small quantities of these wastes are assumed to have been disposed in LF06.

8.5.1 Soil Contamination

No contaminants were present in LF06 soils in excess of EPA risk-based screening levels or background concentrations. A list of analyses for samples collected at LF06 is presented in Table 5.18.

8.5.2 Groundwater Contamination

The results of a 1994 investigation confirmed the findings of previous investigations; the landfill does not appear to be adversely impacting groundwater in the vicinity. No VOC, SVOC, pesticide, PCB, or TPH constituents were detected in groundwater samples from the four wells sampled.

No contaminants were present in LF06 groundwater in concentrations in excess of EPA risk-based screening levels or background concentrations. A list of analyses for groundwater samples collected at LF06 is presented in Table 5.18. A summary of sample concentrations is found in Appendix A.

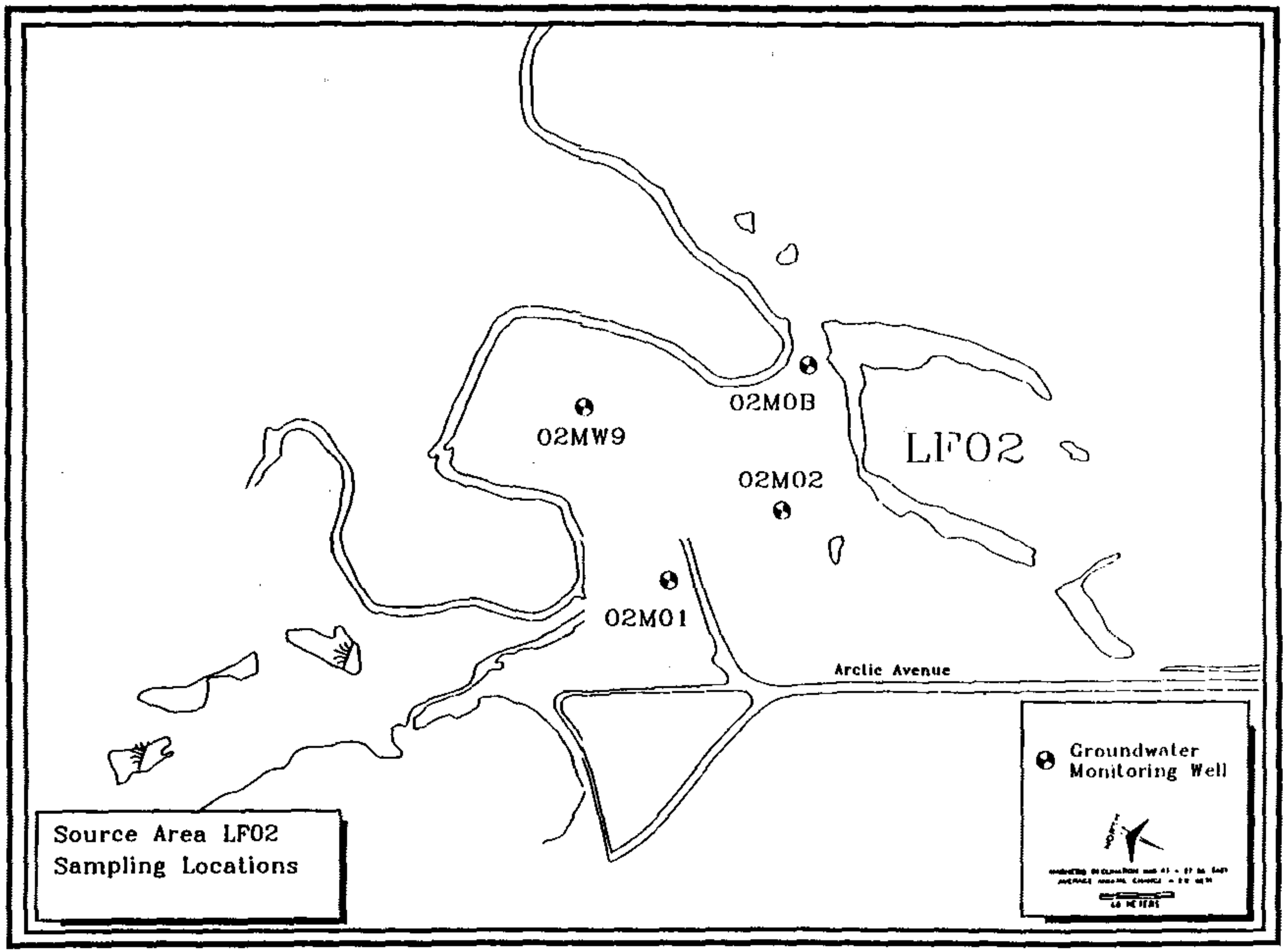
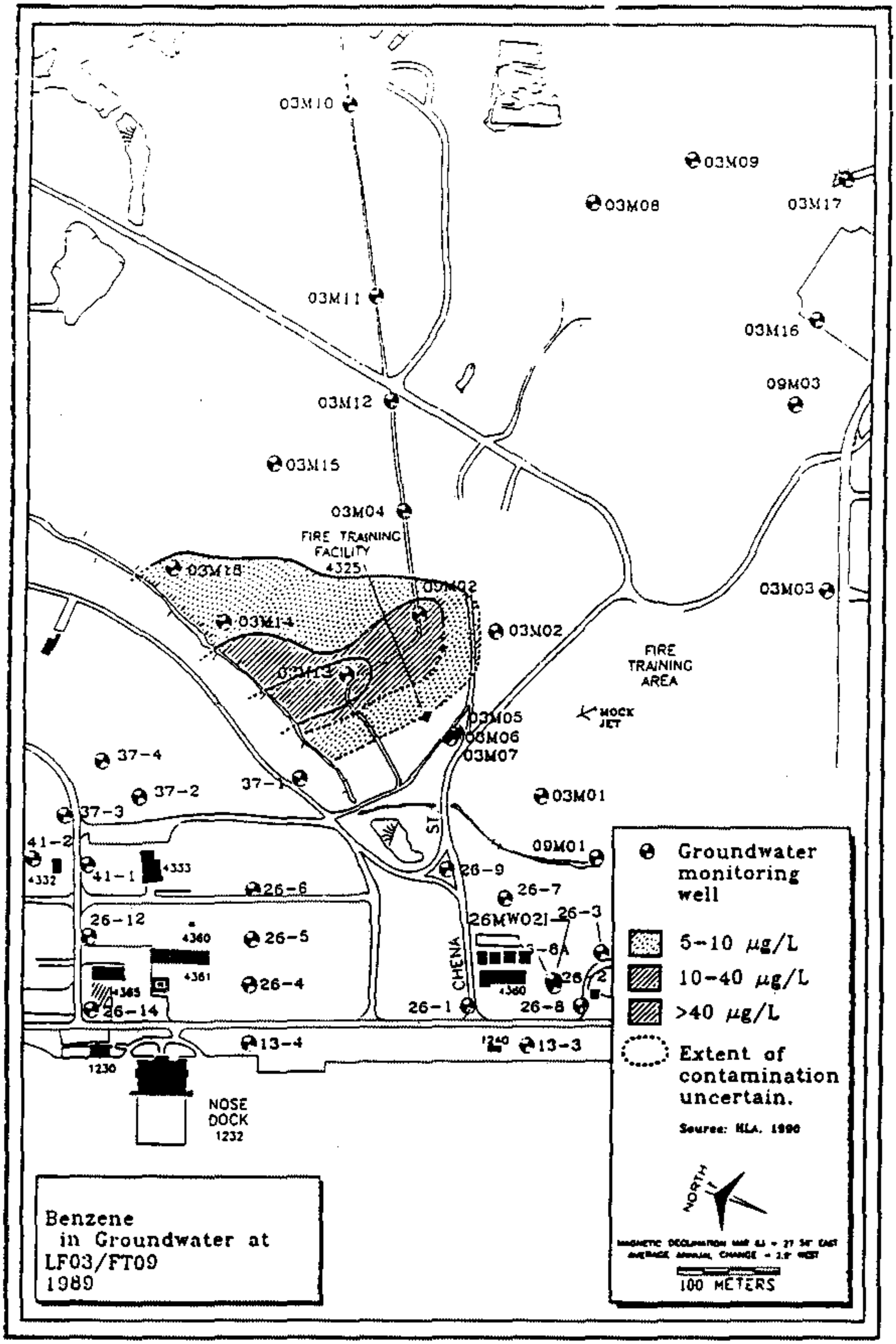


Figure 8.1. LF02, Sampling Locations



Source: HLA, 1990

Figure 8.2. LF03/FT09 Benzene in Groundwater, 1989

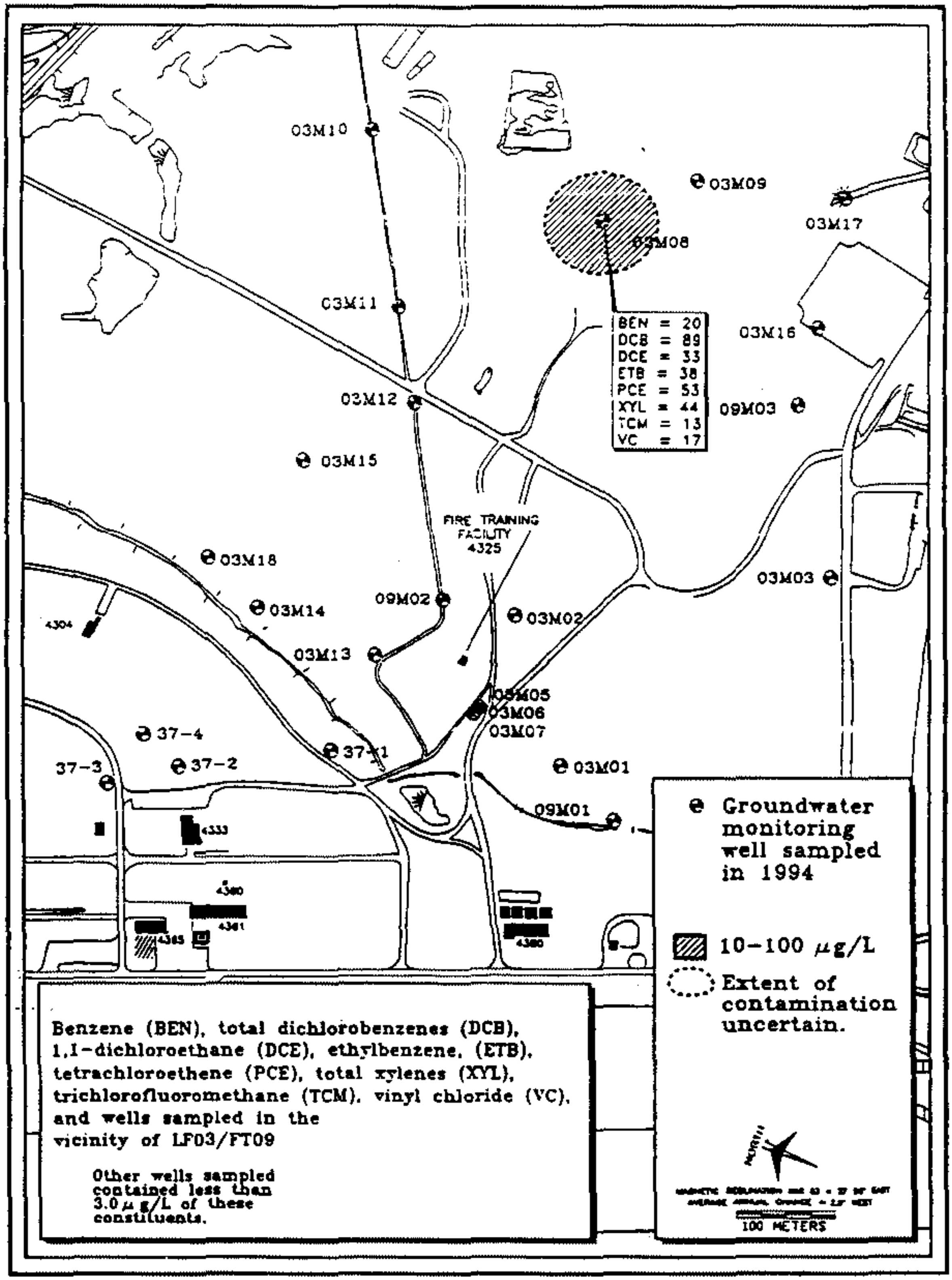
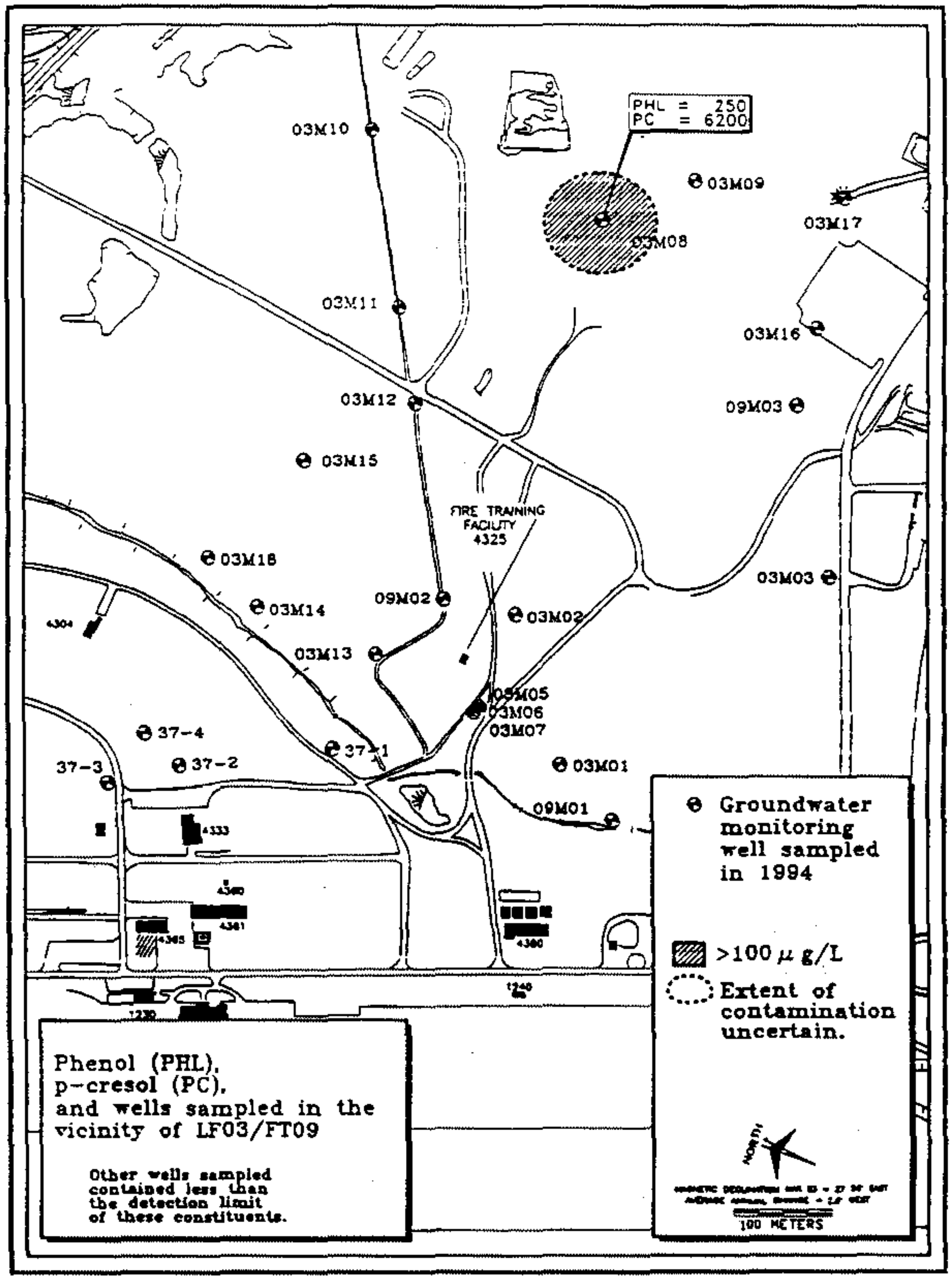


Figure 8.3. LF03/FT09 Benzene and Other Contaminants in Groundwater, 1994



Phenol (PHL),
p-cresol (PC),
and wells sampled in the vicinity of LF03/FT09

Other wells sampled contained less than the detection limit of these constituents.

Figure 8.4. LF03/FT09 Phenol and PC in Groundwater, 1994

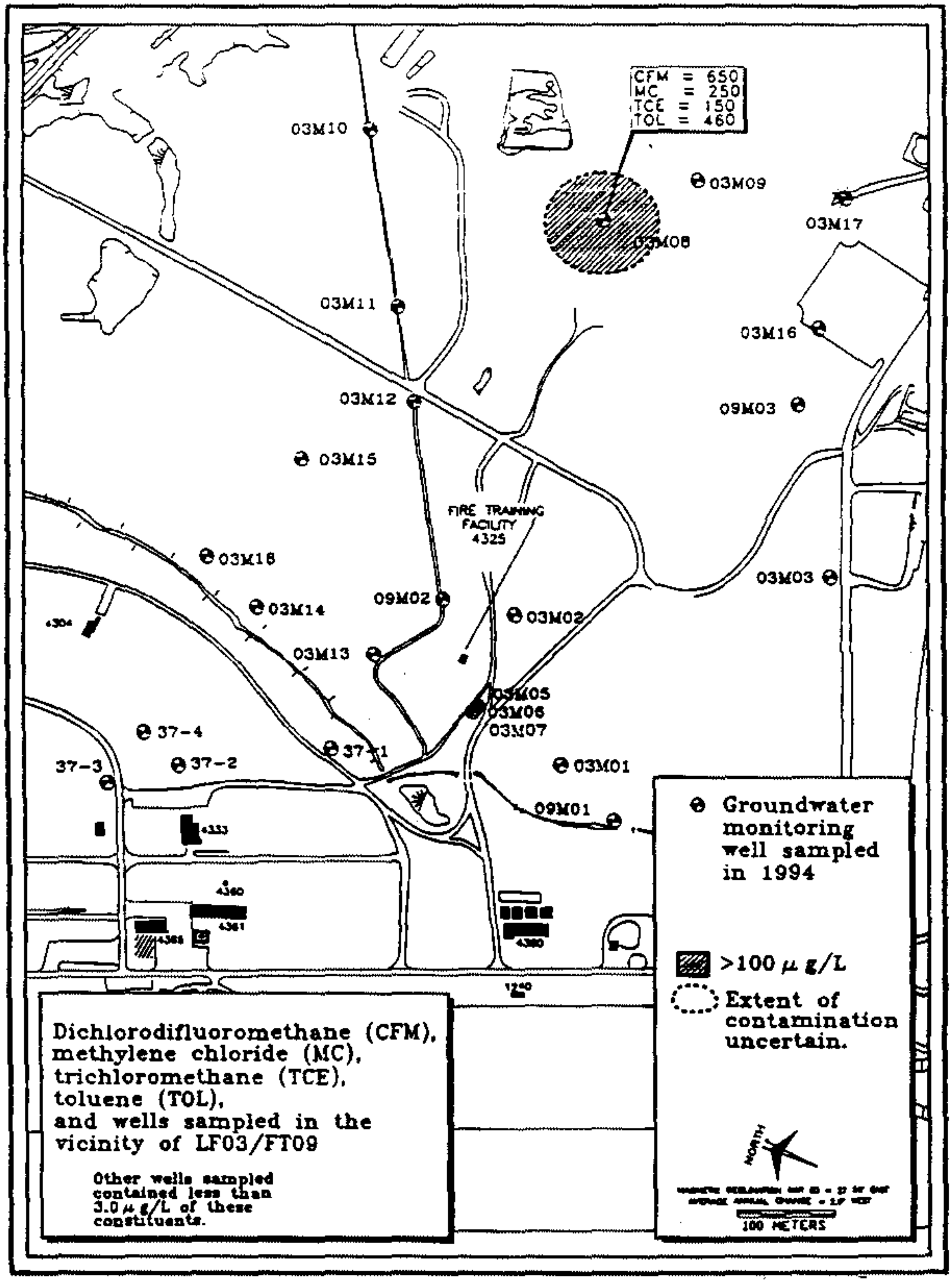


Figure 8.5. LF03/FT09 Miscellaneous Contaminants in Groundwater, 1994

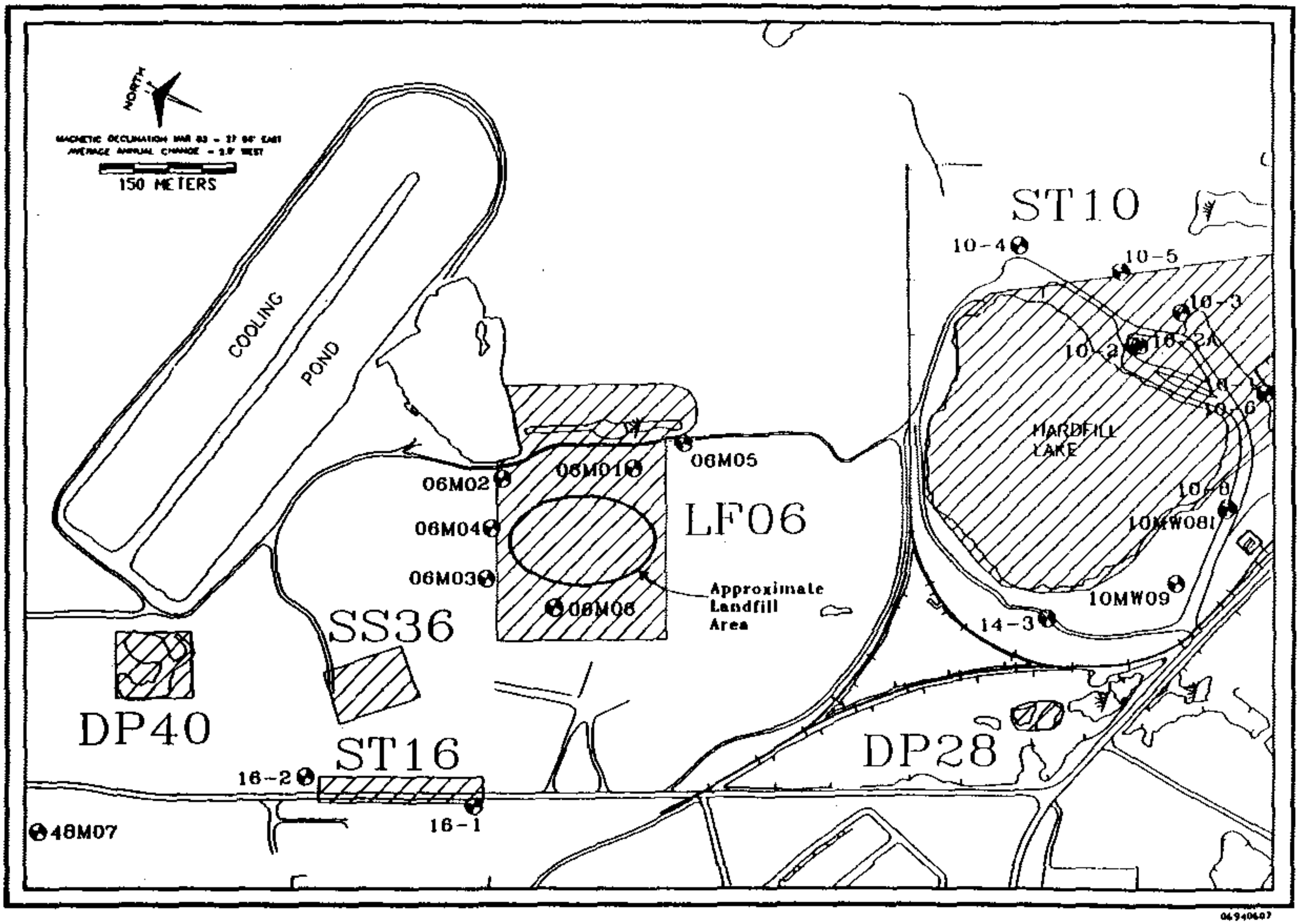


Figure 8.6. Map, LF06

9.0 Summary of Operable Unit Risks

9.1 Human Health Risks

The objective of the baseline risk assessment (BLRA) was to characterize the current and potential threats to human health and the environment. The results helped establish remedial action objectives necessary to develop remedial alternatives in the feasibility studies (National Contingency Plan 40 CFR 300). The BLRA evaluated risks at Eielson now and into the future. Consistent with EPA guidance, the BLRA assumes that without cleanup measures, the identified source areas will remain in their present states of contamination.

The Alaska Department of Environmental Conservation (ADEC), U.S. Air Force, and the U.S. Environmental Protection Agency (EPA) have agreed to follow the guidelines for federal facilities under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), 40 CFR Part 300, Section 120. The health risk assessments are based on the following EPA guidance:

- Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Part A (EPA 1989a)
- Exposure Factors Handbook (EPA 1989b)
- EPA Region 10 Supplemental Risk Assessment Guidance for Superfund (EPA 1991a)
- Standard Default Exposure Factors (EPA 1991b)
- Guidance on Risk Characterization for Risk Managers and Risk Assessors (EPA 1992).

9.1.1 Source Evaluation Report Areas

Contamination within the Source Evaluation Report (SER) sites, LF01, WP32, and DP55, was analyzed by a conservative screening risk assessment that compared the maximum concentration of each contaminant detected at the source area to a conservative risk-based concentration using EPA standard default exposure factors for a residential scenario. The target risks used for the conservative screening were chosen based on the lower end of the 10^{-4} to 10^{-6} risk range specified in the NCP. This screening approach assumes that if no single sample exceeds a concentration representing a human health risk concern, total exposure to the contaminant from the source area will not be of concern. Based on this assumption, no further action is required for areas where maximum concentrations detected were $\leq 10^{-6}$ cancer risk for water, $\leq 10^{-7}$ cancer risk for soil, and ≤ 0.1 hazard quotient. No contamination at source areas LF01, WP32, or DP55 exceeded the screening levels; thus, further risk assessment was not necessary for these SER areas.

9.1.2 Operable Unit 3, 4, and 5 Source Areas

As presented in the three previous sections of this ROD, the OUs were grouped according to their use and the chemical contaminants detected:

- OU 3 -- cleaning and maintenance of equipment (DP44, WP45, ST56, SS61), refueling (SS57)
- OU 4 -- pesticide storage and mixing (SS35), mixing and storage of asphalt (SS35, SS36, SS37, SS39/SS63, SS64), fuel tank farms (DP25, ST27), auto refueling (ST58), waste effluent ponds (WP33)
- OU 5 -- former landfill areas, including a fire-training area (LF02, LF03/FT09, LF04, LF06).

9.2 Site Data, Screening, and Identification of Contaminants of Potential Concern

The environmental data used in the BLRA was collected in the CERCLA Remedial Investigation and Feasibility Studies (RI/FSs) (SAIC 1988, 1989b; HLA 1989, 1990, 1991; U.S. Air Force 1993a,b,c). Fuel- and solvent-related organic chemical contamination of the groundwater and soil was found at specific source areas that resulted from the dispensing or use of

- petroleum, oil, or lubricants
- industrial (cleaning) solvents (electronic and other equipment repair)
- paint products
- asphalt cement materials
- acids and bases (with storage batteries)
- other miscellaneous contaminants.

U.S. Air Force sampling results collected in 1991 and 1992 established background concentrations for inorganic chemicals in soil and water media. The elevated concentrations of inorganic chemicals in soil and water, including arsenic and manganese, are considered intrinsic in the Fairbanks region and are not considered to relate to base activities. Nevertheless, risks were determined for all measured chemicals that are not considered to be common laboratory contaminants (such as, acetone, chloroform, methylene chloride, and phthalates).

The BLRA used data collected in 1992 to 1994 for groundwater, and data from 1986 to 1994 for soils and other media. Groundwater data collected before 1992 is not considered to be representative of current conditions. Concentrations of contaminants in the soils are not believed to have changed significantly between 1986 and 1994.

For some source areas and for several media, it was necessary to estimate chemical concentrations using fate/transport modeling, either because samples were not collected or because concentrations at points of human contact (exposure) were not available. For example, specific chemicals in garden vegetables were not measured, but have been estimated from appropriate soil concentration data.

Table 9.1 lists all contaminants of potential concern that were analyzed with the mean, maximum, and reasonable maximum exposure (RME) concentrations that were used in the assessment. Data provided in Table 9.1 include the values taken as half the detection limits. The RME value is either the upper 95th confidence interval (CI) of the mean or the maximum value, if the CI exceeded the maximum concentration value. If measured concentration data were not available, the RME values were estimated using modeling, as described in the BLRA. The RME value was used in the BLRA to estimate human intake of contaminants for risk assessment. The exposure point concentration (the upper 95th confidence interval on the mean or the maximum value, as appropriate) is the maximum concentration value that is expected for human contact.

All positively identified chemicals were screened to determine whether their concentrations and toxicity potentials exceeded EPA-established risk levels (EPA 1991b). Any chemicals with maximum concentrations that triggered cancer risk levels greater than one in 10^{-6} for water or one in 10^{-7} for soils, or noncancer hazard quotients (HQs) greater than 0.1 are presented in Tables 9.2a and 9.2b. Screening levels were set below toxicity thresholds to ensure the combined actions of chemicals are neither excluded in the calculations nor underestimated in the determination of net adverse health potentials in humans.

The chemicals of potential concern that result from the screening by source area and media are presented in Table 9.2a for carcinogens and Table 9.2b for noncarcinogens. The classes of chemicals detected in OUs 3, 4, and 5 were fuel-related [benzene, toluene, ethylbenzene, and xylene (BTEX), kerosene, and lead]; residuals from asphalt paving [kerosene, polycyclic aromatic hydrocarbons (PAHs)]; pesticides; chlorinated cleaning solvents; and paint-related compounds.

The screening process described previously allowed for identification of contaminants of concern above the EPA-established risk levels. This screening process was not used, however, to limit the number of contaminants carried through the quantified risk assessment; all of the contaminants listed in Table 9.1 as contaminants of potential concern were retained for further risk evaluation. All data was available in electronic form; therefore, it was a more straightforward process to run all data through the computerized spread sheets than to revise the database and remove contaminants that do not contribute significantly to the total risk.

9.3 Exposure Assessment

9.3.1 Conceptual Site Model

An exposure assessment evaluates the potential for human contact with chemicals of concern present at, or migrating from, a source area. At Eielson, human exposures occur as a result of contact with organic chemicals (including pesticides, asphalt, and fuel mixtures) and inorganic chemicals.

The goal of the assessment is to appropriately combine the exposure point concentrations with land use/population scenarios to calculate chemical intake or dose due to human contact with contaminants. The calculated doses were then combined with toxicity data to characterize health risks.

Chemicals may migrate along pathways from sources to points of human contact (such as exposure). Included as part of the pathway assessment are the contaminant sources, the environmental media (such as soils, groundwater, and air), the routes of contact (such as oral ingestion, dermal contact, and inhalation), and the contact itself. If contact is not made, exposure does not occur and the pathway is not complete. The completed pathways of concern at specific source areas within the OUs were evaluated quantitatively to provide numerical estimates of potential exposures, which were then used to estimate human health risks.

The exposure cases or scenarios evaluated for a given source area depend on the populations potentially exposed and on the current and potential land use at Eielson. In this assessment, a residential scenario is evaluated to consider potentially exposed future users who could spend 30 years on-site. This scenario, which includes children, who may be the most sensitive subpopulation to be exposed, is generally the most conservative case. The residential exposure scenario is evaluated for OUs 3, 4, and 5 to determine potential risks in the unexpected event of base closure. The current land use as a military base is not expected to change in the foreseeable future. Other populations of concern are current military and civilian workers; and commercial workers who could be exposed in the future, if the base is converted to civilian use.

The conceptual model of pathways and exposures evaluated for current use, future use, and recreational scenarios is outlined in Figure 9.1.

9.3.2 Exposure Factors

To ensure consistency in the risk assessment process, the EPA's Superfund program has developed standard default exposure factors for selected exposure pathways. Standard default factors are considered the most appropriate exposure parameter values for risk calculations, and EPA stipulates they should be used in BLRAs, unless alternate or site-specific values are clearly justified by supporting data (EPA 1991a, 1991b). The rationale for each standard default value is discussed in Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors (EPA 1991a), and the values are listed in Region X guidance (EPA 1991b). However, the Eielson location near the Arctic Circle required the use of site-specific factors to compensate for extended periods with snow cover and frozen ground. In addition, to accommodate a possible subsistence lifestyle, the assessment considered the ingestion of fish caught adjacent to two source areas (SS35 and SS37), vegetables potentially grown at the source areas evaluated for future residential use, and other site-specific parameters. Table 9.3 lists both the EPA default and the Eielson site-specific exposure factors used in the assessment. When the exposure factors are applied to standard risk equations, intake factors are calculated; the table includes these results. When the intake factor is multiplied by exposure point concentrations, a dose is calculated. Specific doses are used with toxicity factors (for each chemical) to estimate human health risk.

Chronic exposure periods (9-, 12-, 25-, or 30-year durations) that typify high-end recreational and average residential and worker exposures provide information for assessing human cancer risks and other chronic adverse effects. Cancer risks are considered for 70-year lifetimes. A 3-year exposure period is used for the current at-risk child in a recreational setting, and a 6-year exposure period is used for a child in a residential setting. These periods are consistent with the typical on-base stay of military personnel and dependents. At the levels of contamination existing in the source areas, acute poisoning and other short-term effects are considered unlikely.

The potential current- and future-use exposures assume above-average intake of contaminants that are used to calculate chemical (contaminant) intake by humans. Whether the contaminants are measured from field sampling data or estimated using fate/transport modeling, the upper 95th confidence limit on mean (Gilbert 1987) RME concentrations represents conservative exposures expected for a site under current or future conditions. Non-detect values were assigned a concentration of one-half the detection limit (EPA 1991b) and future-use exposures were based on the surface soil or the subsurface soil RME, whichever is larger.

9.4 Evaluation of Lead Contamination

Lead contamination was identified at source areas DP25, ST27, and ST58. Source area DP25 is the E-6 Fuel Storage Tank area, ST27 is a fuel-storage tank farm, and ST58 is the site of the old Quartermaster Service Station, which has been removed.

Exposure to inorganic lead is treated separately from other contaminants for purposes of determining protective levels. In July 1994, EPA issued OSWER Directive # 9355.4-12, Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities to establish an approach to determine protective levels for lead in soil. This directive identifies the Integrated Exposure Uptake Biokinetics (IEUBK) model as the most appropriate and applicable method for assessing and managing risks from lead in soils (Bennett 1990; EPA 1991c, 1994a).

The EPA guidance set residential and industrial screening levels for lead at 400 mg/kg and 1000 mg/kg, respectively. The screening level serves as an indicator that additional study may be appropriate. With the exception of one soil sample in 1986 of 870 mg/kg at DP25, the E-6 Fuel Storage Area, soil lead levels found at all sites reviewed at Eielson AFB are below the 400 mg/kg screening level. The E-6 Fuel Storage Area is an industrial area and lead levels do not exceed the industrial screening level. No further study is necessary, given that special circumstances are absent.

Presently, no MCL exists for lead. In lieu of an MCL, EPA has established a lead action level of 15 μg/L for water. Groundwater lead levels found at the sites reviewed at Eielson AFB were compared to this action level. Based on this screening, lead was identified as a contaminant of concern in groundwater for source areas DP25, ST27, and ST58.

9.5 Toxicity Assessment

Where available, the EPA-authorized chemical-specific toxicity factors are the reference values used to express cancer risk levels and noncancer effects. The available factors, listed in Integrated Risk Information System (IRIS) and Health Effects Assessment Summary Tables (HEAST), have been corrected for exposure times, animal-to-man extrapolations, and others. Potential cancer risks are quantified through the use of dose-response slope factors. The cancer potency or risk is characterized as an upper-bound estimate, meaning the true risk to humans is not likely to exceed the estimate and may even be lower (EPA 1989a). The reference dose (RfD) is used to evaluate toxic effects from noncarcinogens and estimates the maximum daily exposure to human populations that is not likely to result in an appreciable risk of adverse effects. The critical toxicity values used for the major 20 contaminants of concern are shown in Table 9.4a. Table 9.4b shows the additional toxicity factors that were needed in the risk assessment for screening of chemicals and risk quantification.

9.6 Risk Characterization

The carcinogenic risk from exposure to a chemical is described in terms of the probability that an exposed individual will develop cancer over a lifetime. This value is a function of the estimated chronic daily intake (dose) and the slope factor for the chemical. The slope factor converts the estimated dose, averaged over a 70-year lifetime of exposure, to a risk for an individual (EPA 1989a):

$$\text{Cancer risk} = \text{Dose} \times \text{SF} \qquad (9.1)$$

where

risk = n excess probability (such as 2×10^{-3}) of an individual developing cancer as a consequence of chronic exposure

Dose = chronic daily intake averaged over 70 years, in mg/kg · day

SF = slope factor, in mg/kg · day

The estimated carcinogenic risks from each contaminant and pathway are added to determine total additional risk resulting from site-specific contamination. This additional risk is above the rate of cancer in the United States from all causes which is estimated to be as high as 1 in 4. The National Contingency Plan (40 CFR 300) defines acceptable risk from Superfund site as additional cancers due to site-specific contamination in the range of 1 chance in 10,000 (1×10^{-4}) to 1 chance in 1,000,000 (1×10^{-6}).

The risk of noncarcinogenic effects from contaminant exposure is expressed in terms of the hazard quotient (HQ). The HQ is the ratio of the estimated average daily dose (ADD) (for an appropriate period of exposure) to the RfD. The HQ for chronic effects is expressed by the following equation:

$$\text{HQ} = \text{ADD}/\text{RfD} \qquad (9.2)$$

where

ADD = average daily dose (in mg/kg · day)

RfD = reference dose for chronic exposure (in mg/kg · day).

An HQ that is greater than 1.0 indicates a potential for adverse health effects. Although the incidence or severity of those effects is likely to increase as the HQ increases, the dose-response rates can differ among contaminants and health effects. Thus, an HQ value of 1.0 does not define a sharp distinction between no effects and adverse effects, but rather a transition to the potential for adverse effects.

Exposures to a single contaminant from different pathways, or exposures to multiple contaminants, can act cumulatively to produce adverse health effects, even if all individual exposures are below RfD values. Therefore, a hazard index is calculated by summing HQs across contaminants and pathways. A hazard index that exceeds 1.0 indicates a potential for adverse health effects, under the assumption that risks are additive across chemicals and pathways.

A summary of cancer risks and noncancer effects is found in Table 9.5. For each source area, the summary table shows the probable cancer risks that are expected to be greater than a rate of 1 in 1,000,000 or noncarcinogenic effects with a HI greater than 0.1. In these tables, organic and inorganic chemical risks have been summed, according to EPA guidance (EPA 1989a).

A breakdown of the routes of contaminant intake, the environmental media, the chemical, and the corresponding risk or effect level for all positively identified chemicals is shown in Tables 9.2a and 9.2b. These tables identify the contaminants of concern for each pathway along with its corresponding risks. The cumulative risks presented in Table 9.5 are somewhat higher than the cumulative risks presented in Tables 9.2a and 9.2b, which include only positively identified contaminants, because all contaminants analyzed are included in Table 9.5, regardless of whether they were detected. In Table 9.5, nondetect values were assigned a concentration of one-half the detection limit (EPA 1991b) and future use exposures were based on the surface soil or the subsurface soil RME, whichever is larger.

Cancer risks: In OU 3, the cancer risks at source area DP44 shown in Table 9.2a result from soil exposure to benzo(b)fluoranthene, benzo(a)anthracene, and dibenzo(a,h)anthracene, while groundwater exposure results from contact with trichloroethane. Benzene in the groundwater is the major contributor at SS57. At SS61, pentachlorophenol, trichloroethane, and gasoline are the risk contributors.

In OU 4, exposure to the groundwater via ingestion and inhalation arise from contact with benzene. At source area SS35, dermal exposure to DDT drives risks. The inadvertent ingestion and inhalation of traces of gasoline in the groundwater at ST58 provides elevated cancer risk probability.

At OU 5, 1,1-dichloroethylene, vinyl chloride, 1,4-dichlorobenzene, and trichloroethane may result in cancer risk from exposure to soil and groundwater media at LF03.

Noncancer risks: Table 9.2b shows noncancer risks that metals contribute are most of the noncancer risks at Eielson AFB. However, because they are assumed to be at background levels and not from Eielson sources, inorganic chemical are not considered as risk drivers. With the exception of DDT at source area SS35, all of the following noncancer OU 3, 4, and 5 exposures result from use of the groundwater.

In OU 3 at DP44, trichloroethane may cause adverse effects from drinking the groundwater. At WP45, ingestion of trichloroethane in the groundwater may cause ill effects. At SS57, toluene is the major contributor to noncancer effects. At SS61, trichloroethane contributes the bulk of the contaminant load.

For OU 4, the DDT levels at SS35 approach a HQ of 1 to become the major risk source.

At the OU 5 source area LF03, the major organics, trichloroethane and tetrachloroethylene, sum to less than 1.

9.7 Uncertainty Evaluation for the Human Health Risk Assessment

The calculated exposures and risks are based on numerous assumptions and parameter estimates that are themselves uncertain. These uncertainties affect both exposure estimates and toxicity values. Overall, the calculated exposures and upper-bound risks for the defined adverse effects are unlikely to result in underestimates; however, true risks could be lower than those calculated. Some assumptions and uncertainty factors associated with the BLRA include the following:

- The numerical estimates, based on standard EPA default and site-specific exposure factors for potential exposure and risk development for a quantitative risk assessment, cannot be precise values. Therefore, the uncertainty in the risk estimates is an important consideration, particularly for the Eielson sub-Arctic climate. Some risks, based on standard defaults, may be overestimated, despite compensation for location-specific factors.

- The baseline risk assessment presumes media concentration will prevail over time at their current levels. This assumption does not account for any natural biodegradation of contaminants with time. At LF03, most recent contaminant concentrations are considerably lower than the previously measured values. In this instance, it is likely that groundwater risks have been overestimated. Conversely, if the groundwater contaminant concentrations increase in the future due to additional leaching from a remaining source, the groundwater risks may be underestimated.

- At WP45, the maximum TCE concentration in groundwater has not been confirmed on resampling. This could be due to the disposal of snow on the area, resulting in the dispersal and dilution of groundwater TCE. Therefore, this value was not included in the risk assessment. If the value was included, the risk at WP45 due to TCE in groundwater would be 8E-4, doubling the total risk at WP45/SS57.

- Several of the basic assumptions used to develop appropriate exposure scenarios at Eielson AFB have little or no uncertainty associated with them. The existence of elevated concentrations of some contaminants within the various source areas is not in question, because these contaminants have consistently appeared in sampling studies, including data collected since 1986. Also, little uncertainty exists that specific source areas are contaminated by mixtures of aviation and motor fuels, cleaning solvents, and pesticides, even if the full extent of the contributions of each chemical is not completely defined. The primary land use in the source areas is military/commercial, a fact not expected to change in the foreseeable future (unless the base is closed). As a result, a worker exposure scenario is considered highly appropriate for current and future risk characterization at Eielson AFB.

- Exposures and risks to individuals (at a given source area) will differ because of different behavioral patterns, or genetic differences and sensitivity among individuals. Consequently, in addition to the uncertainty associated with a given estimate of risk for a particular population group, an underlying distribution will be present (on the risk level) that reflects alternative potentially exposed populations.

- Exposure point concentrations are reasonably certain for measured data. However, concentration data for sediments, surface water, and fish (for locations and chemicals not sampled in 1994) were modeled. The modeled data may be uncertain; for the Eielson region, it is difficult without site-specific fate/transport data to judge whether the resulting exposure point concentrations overestimate or underestimate risks.

- The background sampling for metals is thought sufficient to show that, with the exception of lead, these metals did not result from Air Force activities. For example, considerable information exists to verify that arsenic, which occurs at elevated concentrations throughout the region, is responsible for elevated risk rates near Fairbanks from the ingestion of groundwater. Sources of lead have been identified on the base; unfiltered lead concentrations were used to for comparison to current action levels.

- Toxicity factors associated with the 20 risk-driver chemicals shown in Table 9.6 are based on scientific information with measurable uncertainty. In contrast, many of the other toxicity factors used in the screening process have an unknown degree of uncertainty. Most of the carcinogenic chemicals considered to be risk drivers are class A (sufficient evidence of carcinogenicity in humans), B (probable evidence), or C (limited evidence for humans). The uncertainty associated with the risk driver chemicals is not considered to either overestimate or underestimate risks.

- Some uncertainty may exist in the determination of the risks associated with human exposure to fuels. Although total petroleum hydrocarbons (TPHs) were measured, their risk was not estimated because they are fuel mixtures and not pure chemicals. Consequently, they lack the toxicity factors needed for risk analyses. Usually the BTEX chemicals (benzene, toluene, ethylbenzene, and xylene) are considered surrogates for TPHs, thus allowing for the estimation of fuel-related risks. The EPA has estimated preliminary factors for the gasoline, diesel, kerosene, and jet fuel mixtures, but these factors may not be applicable to the weathered fuel frequently found at Eielson AFB. Even though these preliminary factors have been withdrawn, they were used in the assessment. Surrogate and preliminary data that do not necessarily apply to the contamination found at Eielson Air Force Base were used to calculate fuel-related risks; this may result in overestimated or underestimated risks.

9.8 Environmental Risks

Table 9.6 summarizes the terrestrial habitat types and their primary wildlife species on Eielson AFB.

No endangered or threatened species are resident to Eielson AFB. The American peregrine falcon (federally endangered) breeds within 50 miles of the base and the Arctic peregrine falcon (federally threatened) migrates to within 50 miles of the base. Bald eagles (federally threatened) are occasionally sighted on Eielson AFB.

No acute ecological risks were identified for source areas in Operable Units 3, 4, or 5. With the exception of SS35, the Asphalt Mixing and Drum Burial area, these areas do not appear to be acting as sources of surface water or sediment contamination. PCBs and pesticides, particularly DDT, were found in soil at source area SS35, which is located adjacent to Garrison Slough. Elevated body burdens of DDT were found in fish caught near SS35. Cumulative ecological risks at Eielson AFB are currently being evaluated under the Sitewide program. Preliminary conclusions indicate that SS35 may present reproductive risks to birds and mammals from ingestion exposure to PCBs and DDT. The Sitewide biological risk assessment addresses ecological risks from all areas on base.

9.9 Summary of Source Area Disposition

The nature and extent of contamination and its corresponding risk, as well as the potential future use of a given source area, were evaluated to determine which source areas required development of cleanup alternatives in the Feasibility Study. A summary of the dispositions for source areas is presented in Table 9.7.

Table 9.1. Contaminants of Potential Concern, Media, and Concentration Ranges

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
Operable Unit 3							
	Groundwater						
DP44	Barium	7440-39-3	Water	ug/L	133.3	200	200
DP44	Benzene	71-43-2	Water	ug/L	1.5	5.3	2.12
DP44	Calcium	7440-70-2	Water	ug/L	38350	59000	59000
DP44	Chloride	16887-00-6	Water	ug/L	1567	2300	2300
DP44	Cis-1,2-dichloroethylene	156-59-2	Water	ug/L	28.24	260	61.8
DP44	Fluoride	7782-41-4	Water	ug/L	83.33	100	100
DP44	h-Chlorofluorobenzene	PPP-PP-P	Water	ug/L	10.06	12	10.74
DP44	Iron	7439-89-6	Water	ug/L	4137	6400	6400
DP44	Magnesium	7439-95-4	Water	ug/L	8017	12000	12000
DP44	Manganese	7439-96-5	Water	ug/L	2635	4600	4600
DP44	Nitrate	14797-55-8	Water	ug/L	300	700	700
DP44	p-Chlorofluorobenzene	QQQ-QQ-Q	Water	ug/L	9.413	10	9.764
DP44	Potassium	7440-09-7	Water	ug/L	2283	3400	3400
DP44	Sodium	7440-23-5	Water	ug/L	3617	5600	5600
DP44	Sulfate	12808-79-8	Water	ug/L	9417	16000	16000
DP44	Tetrachloroethylene	127-18-4	Water	ug/L	0.2821	0.7	0.3391
DP44	Trans-DCE	156-60-5	Water	ug/L	1.429	5.4	2.081
DP44	Trichloroethene	79-01-6	Water	ug/L	182.5	2500	498.3
	Surface Soil						
DP44	2-Methylnaphthalenee	91-57-6	Soil	ug/kg	193.3	550	550
DP44	Acenaphthene	83-32-9	Soil	ug/kg	970	2900	2900
DP44	Acenaphthylene	208-96-8	Soil	ug/kg	163.3	480	480
DP44	Aluminum	7429-90-5	Soil	ug/kg	8.47e+06	1.39e+07	1.39e+07
DP44	Anthracene	120-12-7	Soil	ug/kg	1840	5500	5500
DP44	Antimony	7440-36-0	Soil	ug/kg	4167	8000	8000
DP44	Barium	7440-39-3	Soil	ug/kg	1.24e+05	1.63e+05	1.63e+05
DP44	Benzo(a)anthracene	56-55-3	Soil	ug/kg	16080	48000	48000
DP44	Benzo(a)pyrene	50-32-8	Soil	ug/kg	6158	18000	18000
DP44	Benzo(b)fluoranthenene	205-99-2	Soil	ug/kg	70240	2.10e+05	2.10e+05
DP44	Benzo(g,h,i)perylene	191-24-2	Soil	ug/kg	4883	14000	14000
DP44	Cadmium	7440-43-9	Soil	ug/kg	827	906	906
DP44	Calcium	7440-70-2	Soil	ug/kg	5.61e+06	1.10e+07	1.10e+07
DP44	Chloroform	67-66-3	Soil	ug/kg	16.02	170	41.24
DP44	Chromium	7440-47-3	Soil	ug/kg	21700	27400	27400
DP44	Chrysene	218-01-9	Soil	ug/kg	7023	21000	21000
DP44	Cobalt	7440-48-4	Soil	ug/kg	8413	13700	13700
DP44	Copper	7440-50-8	Soil	ug/kg	21970	36500	36500
DP44	Dibenzo(a,h)anthracene	53-70-3	Soil	ug/kg	2183	6500	6500
DP44	Dibenzofuran	132-64-9	Soil	ug/kg	770	2300	2300
DP44	Fluoranthene	206-44-0	Soil	ug/kg	16350	49000	49000
DP44	Fluorene	86-73-7	Soil	ug/kg	1277	3800	3800
DP44	Indeno(1,2,3-cd)pyrene	193-39-5	Soil	ug/kg	5228	15000	15000
DP44	Iron	7439-89-6	Soil	ug/kg	1.53e+07	2.58e+07	2.58e+07
DP44	Lead	7439-92-1	Soil	ug/kg	28800	47900	41240

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
DP44	Magnesium	7439-95-4	Soil	ug/kg	4.27e+06	7.12e+06	7.12e+06
DP44	Manganese	7439-96-5	Soil	ug/kg	2.62e+05	4.45e+05	4.45e+05
DP44	Methylenechloride	75-09-2	Soil	ug/kg	1244	11000	2884
DP44	Naphthalene	91-20-3	Soil	ug/kg	296.3	880	880
DP44	Nickel	7440-02-0	Soil	ug/kg	19070	34000	34000
DP44	Phenanthrene	85-01-8	Soil	ug/kg	12340	37000	37000
DP44	Potassium	7440-09-7	Soil	ug/kg	7.90e+05	9.40e+05	9.40e+05
DP44	Pyrene	129-00-0	Soil	ug/kg	10690	32000	32000
DP44	Sodium	7440-23-5	Soil	ug/kg	2.93e+05	4.10e+05	4.10e+05
DP44	Tetrachloroethylene	127-18-4	Soil	ug/kg	0.4222	1.8	0.7426
DP44	Toluene	108-88-3	Soil	ug/kg	5.611	34	12.26
DP44	TPH	TPH	Soil	ug/kg	7.40e+05	7.00e+06	1.24e+06
DP44	Vanadium	7440-62-2	Soil	ug/kg	32630	54100	54100
DP44	Zinc	7440-66-6	Soil	ug/kg	79600	1.46e+05	1.46e+05
	Subsurface Soil						
DP44	2-Methylnaphthalenee	91-57-6	Soil	ug/kg	30	30	30
DP44	Acetophenone	98-86-2	Soil	ug/kg	18.86	100	25.51
DP44	Aluminum	7429-90-5	Soil	ug/kg	6.65e+06	6.65e+06	6.65e+06
DP44	Barium	7440-39-3	Soil	ug/kg	1.13e+05	1.13e+05	1.13e+05
DP44	Benzo(a)anthracene	56-55-3	Soil	ug/kg	200	200	200
DP44	Benzo(a)pyrene	50-32-8	Soil	ug/kg	390	390	390
DP44	Benzo(b)fluoranthenene	205-99-2	Soil	ug/kg	460	460	460
DP44	Benzo(g,h,i)perylene	191-24-2	Soil	ug/kg	280	280	280
DP44	Bis(2-ethylhexyl)phthalate	117-81-7	Soil	ug/kg	27.95	90	33.04
DP44	Butyl benzyl phthlate	85-68-7	Soil	ug/kg	17.05	60	20.57
DP44	Calcium	7440-70-2	Soil	ug/kg	4.48e+06	4.48e+06	4.48e+06
DP44	Chromium	7440-47-3	Soil	ug/kg	11200	11200	11200
DP44	Chrysene	218-01-9	Soil	ug/kg	280	280	280
DP44	Cobalt	7440-48-4	Soil	ug/kg	6490	6490	6490
DP44	Copper	7440-50-8	Soil	ug/kg	13900	13900	13900
DP44	Fluoranthene	206-44-0	Soil	ug/kg	770	770	770
DP44	Indeno(1,2,3-cd)pyrene	193-39-5	Soil	ug/kg	270	270	270
DP44	Iron	7439-89-6	Soil	ug/kg	1.15e+07	1.15e+07	1.15e+07
DP44	Kerosene	8008-20-6	Soil	ug/kg	335.6	510	412.1
DP44	Lead	7439-92-1	Soil	ug/kg	8978	46700	12140
DP44	Magnesium	7439-95-4	Soil	ug/kg	3.56e+06	3.56e+06	3.56e+06
DP44	Manganese	7439-96-5	Soil	ug/kg	2.15e+05	2.15e+05	2.15e+05
DP44	Methylene chloride	75-09-2	Soil	ug/kg	1700	1700	1700
DP44	Naphthalene	91-20-3	Soil	ug/kg	17.37	80	22.32
DP44	Nickel	7440-02-0	Soil	ug/kg	14300	14300	14300
DP44	Phenanthrene	85-01-8	Soil	ug/kg	530	530	530
DP44	Potassium	7440-09-7	Soil	ug/kg	6.05e+05	6.05e+05	6.05e+05
DP44	Pyrene	129-00-0	Soil	ug/kg	400	400	400
DP44	Sodium	7440-23-5	Soil	ug/kg	2.55e+05	2.55e+05	2.55e+05
DP44	Total dissolved solids	TDS	Soil	ug/kg	94.49	97.5	97.06
DP44	Total petroleum hydrocarbons	TPH	Soil	ug/kg	1.99e+05	7.20e+06	4.53e+05

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
DP44	Vanadium	7440-62-2	Soil	ug/kg	24400	24400	24400
DP44	Zinc	7440-66-6	Soil	ug/kg	28700	28700	28700
	Groundwater						
WP45	1,1,1-Trichloroethane	71-55-6	Water	ug/L	0.2708	0.5	0.3083
WP45	1,2-Dichloroethane	107-06-2	Water	ug/L	0.2792	0.6	0.3316
WP45	1,4-Dichlorobenzene	108-88-3	Water	ug/L	0.9232	1	1
WP45	Barium	7440-39-3	Water	ug/L	89.5	140	140
WP45	Calcium	7440-70-2	Water	ug/L	46500	53000	53000
WP45	Chloride	16887-00-6	Water	ug/L	4550	6200	6200
WP45	Cis-1,2-dichloroethene	156-59-2	Water	ug/L	11.52	47	19.92
WP45	Ethylbenzene	67-66-4	Water	ug/L	0.00385	0.00385	0.00385
WP45	Fluoride	7782-41-4	Water	ug/L	150	200	200
WP45	h-Chlorofluorobenzene	PPP-PP-P	Water	ug/L	9.35	11	10.22
WP45	Iron	7439-89-6	Water	ug/L	215	420	420
WP45	Magnesium	7439-95-4	Water	ug/L	8800	11000	11000
WP45	Manganese	7439-96-5	Water	ug/L	1202	2400	2400
WP45	Nitrate	14797-55-8	Water	ug/L	4050	6600	6600
WP45	p-Chlorofluorobenzene	QQQ-QQ-Q	Water	ug/L	9.283	10	9.93
WP45	Potassium	7440-09-7	Water	ug/L	2950	3000	3000
WP45	Sodium	7440-23-5	Water	ug/L	4500	4800	4800
WP45	Sulfate	12808-79-8	Water	ug/L	11150	14000	14000
WP45	Trans-DCE	156-60-5	Water	ug/L	8.4	39	14.73
WP45	Trichloroethene	79-01-6	Water	ug/L	71.77	370	140.9
WP45	Vanadium	7440-62-2	Water	ug/L	102.5	190	190
	Surface Soil						
WP45	Acenaphthene, soil	83-32-9	Soil	ug/kg	367.1	452	398.4
WP45	Aluminum	7429-90-5	Soil	ug/kg	7.74e+06	8.83e+06	8.83e+06
WP45	Anthracene, soil	120-12-7	Soil	ug/kg	109.1	921	219.6
WP45	Antimony	7440-36-0	Soil	ug/kg	4825	8900	8608
WP45	Barium	7440-39-3	Soil	ug/kg	1.06e+05	1.50e+05	1.42e+05
WP45	Benzo(a)anthracene	56-55-3	Soil	ug/kg	75.3	536	130.9
WP45	Benzo(a)pyrene	50-32-8	Soil	ug/kg	98.45	500	161.3
WP45	Benzo(b)fluoranthene	205-99-2	Soil	ug/kg	96.61	464	151.8
WP45	Benzo(g,h,i)perylene	191-24-2	Soil	ug/kg	111.1	530	176.8
WP45	Benzo(k)fluoranthene	207-08-9	Soil	ug/kg	42.74	286	75.71
WP45	Bis(2-ethylhexyl)phthalate	117-81-7	Soil	ug/kg	200	650	553
WP45	Cadmium	7440-43-9	Soil	ug/kg	1126	2810	2479
WP45	Calcium	7440-70-2	Soil	ug/kg	5.11e+06	7.16e+06	6.96e+06
WP45	Chromium	7440-47-3	Soil	ug/kg	13220	14900	14650
WP45	Chrysene	218-01-9	Soil	ug/kg	104.3	627	169.9
WP45	Cobalt	7440-48-4	Soil	ug/kg	8055	9730	9573
WP45	Copper	7440-50-8	Soil	ug/kg	16720	18300	18170
WP45	Dibenzo(a,h)anthracene	53-70-3	Soil	ug/kg	15.78	60	24.99
WP45	Diethylphthalate	84-66-2	Soil	ug/kg	75	210	180.9
WP45	Fluoranthene	206-44-0	Soil	ug/kg	251.7	1810	420.6
WP45	Fluorene	86-73-7	Soil	ug/kg	7.765	60	13.46

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
WP45	Indeno(1,2,3-cd)pyrene	193-39-5	Soil	ug/kg	81.3	530	140.7
WP45	Iron	7439-89-6	Soil	ug/kg	1.35e+07	1.45e+07	1.45e+07
WP45	Lead	7439-92-1	Soil	ug/kg	10250	18900	14670
WP45	Magnesium	7439-95-4	Soil	ug/kg	4.24e+06	5.02e+06	4.91e+06
WP45	Manganese	7439-96-5	Soil	ug/kg	2.65e+05	4.03e+05	3.75e+05
WP45	Mercury	7439-97-6	Soil	ug/kg	207.2	3172	464.4
WP45	Nickel	7440-02-0	Soil	ug/kg	16400	18500	18500
WP45	Phenanthrene	85-01-8	Soil	ug/kg	246.5	1290	385.7
WP45	Potassium	7440-09-7	Soil	ug/kg	6.86e+05	8.07e+05	8.07e+05
WP45	Pyrene	129-00-0	Soil	ug/kg	487.7	3770	843.9
WP45	Sodium	7440-23-5	Soil	ug/kg	3.01e+05	3.35e+05	3.30e+05
WP45	Tetrachloroethylene	127-18-4	Soil	ug/kg	206.8	620	620
WP45	Trichloroethene	79-01-6	Soil	ug/kg	1100	3300	3300
WP45	Trichlorofluoromethane	75-69-4	Soil	ug/kg	160	320	177.5
WP45	Vanadium	7440-62-2	Soil	ug/kg	28750	32900	32530
WP45	Xylenes (total)	1330-20-7	Soil	ug/kg	1102	3300	3300
WP45	Zinc	7440-66-6	Soil	ug/kg	38580	46800	45630
	Subsurface Soil						
WP45	Aluminum	7429-90-5	Soil	ug/kg	5.86e+06	5.86e+06	5.86e+06
WP45	Barium	7440-39-3	Soil	ug/kg	64100	64100	64100
WP45	Cadmium	7440-43-9	Soil	ug/kg	3280	3280	3280
WP45	Calcium	7440-70-2	Soil	ug/kg	3.95e+06	3.95e+06	3.95e+06
WP45	Chromium	7440-47-3	Soil	ug/kg	11600	11600	11600
WP45	Cobalt	7440-48-4	Soil	ug/kg	6780	6780	6780
WP45	Copper	7440-50-8	Soil	ug/kg	16800	16800	16800
WP45	Ethylbenzene	100-41-4	Soil	ug/kg	193.2	770	645.6
WP45	Iron	7439-89-6	Soil	ug/kg	1.27e+07	1.27e+07	1.27e+07
WP45	Lead	7439-92-1	Soil	ug/kg	5437	7810	7810
WP45	Magnesium	7439-95-4	Soil	ug/kg	3.82e+06	3.82e+06	3.82e+06
WP45	Manganese	7439-96-5	Soil	ug/kg	2.15e+05	2.15e+05	2.15e+05
WP45	Nickel	7440-02-0	Soil	ug/kg	15400	15400	15400
WP45	Potassium	7440-09-7	Soil	ug/kg	6.14e+05	6.14e+05	6.14e+05
WP45	Sodium	7440-23-5	Soil	ug/kg	2.65e+05	2.65e+05	2.65e+05
WP45	Tetrachloroethylene	127-18-4	Soil	ug/kg	62.69	250	209.6
WP45	Toluene	108-88-3	Soil	ug/kg	275.8	1100	922.2
WP45	Trichloroethene	79-01-6	Soil	ug/kg	3000	12000	10060
WP45	Vanadium	7440-62-2	Soil	ug/kg	29400	29400	29400
WP45	Xylenes (total)	1330-20-7	Soil	ug/kg	1152	4600	3856
WP45	Zinc	7440-66-6	Soil	ug/kg	39200	39200	39200
	Groundwater						
ST56	Aluminum	7429-90-5	Water	ug/L	1086	1470	1470
ST56	Arsenic	7440-38-2	Water	ug/L	10.05	14.7	14.7
ST56	Barium	7440-39-3	Water	ug/L	382.5	400	400
ST56	Calcium	7440-70-2	Water	ug/L	1.05e+05	1.13e+05	1.13e+05
ST56	Cobalt	7440-48-4	Water	ug/L	11.6	13.7	13.7
ST56	Copper	7440-50-8	Water	ug/L	20.2	27	27

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
ST56	Iron	7439-89-6	Water	ug/L	6200	8890	8890
ST56	Lead	7439-92-1	Water	ug/L	7.1	10.5	10.5
ST56	Magnesium	7439-95-4	Water	ug/L	29600	31300	31300
ST56	Manganese	7439-96-5	Water	ug/L	1710	2290	2290
ST56	Nickel	7440-02-0	Water	ug/L	18.65	20.4	20.4
ST56	Potassium	7440-09-7	Water	ug/L	8560	10300	10300
ST56	Sodium	7440-23-5	Water	ug/L	18300	22600	22600
ST56	Tetrachloroethylene	127-18-4	Water	ug/L	4.767	13.8	13.8
ST56	Trichloroethene	79-01-6	Water	ug/L	0.3	0.4	0.4
ST56	Vanadium	7440-62-2	Water	ug/L	13.3	19	19
ST56	Zinc	7440-66-6	Water	ug/L	38.75	46.2	46.2
	Groundwater						
SS57	1,2-Dichloroethane	107-06-2	Water	ug/L	1.933	5.3	5.3
SS57	Benzene	71-43-2	Water	ug/L	178.7	530	530
SS57	Cis-1,2-dichloroethylene	156-59-2	Water	ug/L	25.37	73	73
SS57	Ethylbenzene	100-41-4	Water	ug/L	60.67	180	180
SS57	Lead	7439-92-1	Water	ug/L	5.867	9.3	9.3
SS57	Tetrachloroethylene	127-18-4	Water	ug/L	0.5	1	1
SS57	Toluene	108-88-3	Water	ug/L	634	1900	1900
SS57	Xylenes (total)	1330-20-7	Water	ug/L	335	1000	1000
	Surface Soil						
SS57	Benzene	71-43-2	Soil	ug/kg	1.4	2.2	2.2
SS57	Ethylbenzene	100-41-4	Soil	ug/kg	8669	26000	26000
SS57	Lead	7439-92-1	Soil	ug/kg	4200	4200	4200
SS57	Toluene	108-88-3	Soil	ug/kg	12670	38000	38000
SS57	Xylenes (total)	1330-20-7	Soil	ug/kg	50000	1.50e+05	1.50e+05
	Subsurface Soil						
SS57	Ethylbenzene	100-41-4	Soil	ug/kg	800.7	2400	2400
SS57	Lead	7439-92-1	Soil	ug/kg	3900	3900	3900
SS57	Toluene	108-88-3	Soil	ug/kg	539	1600	1600
SS57	Xylenes (total)	1330-20-7	Soil	ug/kg	2768	8300	8300
	Groundwater						
SS61	1,2-Dichlorobenzene	95-50-1	Water	ug/L	15.82	50	30.54
SS61	2-Methylnaphthalene	91-57-6	Water	ug/L	9	16	16
SS61	4-Methylphenol	106-44-5	Water	ug/L	8.667	16	16
SS61	Aluminum	7429-90-5	Water	ug/L	13200	24200	24200
SS61	Arsenic	7440-38-2	Water	ug/L	44.13	81.2	81.2
SS61	Barium	7440-39-3	Water	ug/L	705.7	1340	1340
SS61	Benzene	71-43-2	Water	ug/L	2.606	50	5.667
SS61	Beryllium	7440-41-7	Water	ug/L	0.9333	1.8	1.8
SS61	Bis(2-ethylhexyl)phthalate	117-81-7	Water	ug/L	6.7	10.1	10.1
SS61	Butylbenzylphthalate	85-68-7	Water	ug/L	4.033	5	5
SS61	Cadmium	7440-43-9	Water	ug/L	0.7	1.1	1.1
SS61	Calcium	7440-70-2	Water	ug/L	88130	96800	96800
SS61	Chromium	7440-47-3	Water	ug/L	31.6	56.1	56.1
SS61	Cis-1,2-Dichloroethene	156-59-2	Water	ug/L	342.2	3200	619.3

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS61	Cobalt	7440-48-4	Water	ug/L	41.87	84.8	84.8
SS61	Copper	7440-50-8	Water	ug/L	60.2	69.8	69.8
SS61	Di-n-butylphthalate	84-74-2	Water	ug/L	4.267	5	5
SS61	Di-n-octylphthalate	117-84-0	Water	ug/L	2.533	5	5
SS61	Ethylbenzene	100-41-4	Water	ug/L	3.247	50	6.281
SS61	Gasoline	8006-61-9	Water	ug/L	213.4	2000	364.6
SS61	Iron	7439-89-6	Water	ug/L	65770	1.24e+05	1.24e+05
SS61	Isophorone	78-59-1	Water	ug/L	5.567	6.7	6.7
SS61	Lead	7439-92-1	Water	ug/L	28.8	40.4	40.4
SS61	M,p-xylene	MPXYLENES	Water	ug/L	102.5	290	290
SS61	Magnesium	7439-95-4	Water	ug/L	23300	26400	26400
SS61	Manganese	7439-96-5	Water	ug/L	5727	8820	8820
SS61	n-Nitrosodiphenylamine	86-30-6	Water	ug/L	4.233	5	5
SS61	Naphthalene	91-20-3	Water	ug/L	18.33	38	38
SS61	Nickel	7440-02-0	Water	ug/L	81.83	153	153
SS61	o-Xylene	95-47-6	Water	ug/L	19.77	50	50
SS61	Pentachlorophenol	87-86-5	Water	ug/L	17.43	25	25
SS61	Phenanthrene	85-01-8	Water	ug/L	3.9	5	5
SS61	Potassium	7440-09-7	Water	ug/L	8517	9740	9740
SS61	Sodium	7440-23-5	Water	ug/L	16470	23600	23600
SS61	Toluene	108-88-3	Water	ug/L	8.947	250	24.5
SS61	Trans-1,2-dichloroethene	156-60-5	Water	ug/L	16.68	140	26.46
SS61	Trichloroethene (TCE)	79-01-6	Water	ug/L	72.87	1100	160.6
SS61	Vanadium	7440-62-2	Water	ug/L	98.2	165	165
SS61	Xylenes (total)	1330-20-7	Water	ug/L	5.972	35	8.66
SS61	Zinc	7440-66-6	Water	ug/L	196	340	340
	Surface Soil						
SS61	Aluminum	7429-90-5	Soil	ug/kg	2.93e+06	2.93e+06	2.93e+06
SS61	Arsenic	7440-38-2	Soil	ug/kg	2700	2700	2700
SS61	Barium	7440-39-3	Soil	ug/kg	38600	38600	38600
SS61	Calcium	7440-70-2	Soil	ug/kg	1.97e+06	1.97e+06	1.97e+06
SS61	Chromium	7440-47-3	Soil	ug/kg	8100	8100	8100
SS61	Cobalt	7440-48-4	Soil	ug/kg	4100	4100	4100
SS61	Copper	7440-50-8	Soil	ug/kg	12400	12400	12400
SS61	Iron	7439-89-6	Soil	ug/kg	5.20e+06	5.20e+06	5.20e+06
SS61	Lead	7439-92-1	Soil	ug/kg	5700	5700	5700
SS61	Magnesium	7439-95-4	Soil	ug/kg	1.65e+06	1.65e+06	1.65e+06
SS61	Manganese	7439-96-5	Soil	ug/kg	1.05e+05	1.05e+05	1.05e+05
SS61	Nickel	7440-02-0	Soil	ug/kg	10300	10300	10300
SS61	Vanadium	7440-62-2	Soil	ug/kg	15000	15000	15000
	Subsurface Soil						
SS61	1,1,1-Trichloroethane	71-55-6	Soil	ug/kg	1.023	4.3	1.673
SS61	1,1-Dichloroethane	75-34-3	Soil	ug/kg	0.8045	2.7	1.173
SS61	1,1-Dichloroethene	75-35-4	Soil	ug/kg	0.3227	0.76	0.4042
SS61	1,2-Dichlorobenzene	95-50-1	Soil	ug/kg	474.2	6600	1027
SS61	1,3-Dichlorobenzene	541-73-1	Soil	ug/kg	473.4	6600	1027

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS61	1,4-Dichlorobenzene	106-46-7	Soil	ug/kg	473.7	6600	1027
SS61	2-Methylnaphthalene	91-57-6	Soil	ug/kg	2001	13000	4251
SS61	Aluminum	7429-90-5	Soil	ug/kg	5.53e+06	8.48e+06	6.54e+06
SS61	Arsenic	7440-38-2	Soil	ug/kg	4373	11900	6412
SS61	Barium	7440-39-3	Soil	ug/kg	1.65e+05	7.05e+05	3.11e+05
SS61	Benzene	71-43-2	Soil	ug/kg	5.636	38	12.23
SS61	Calcium	7440-70-2	Soil	ug/kg	3.07e+06	5.45e+06	3.80e+06
SS61	Chlorobenzene	108-90-7	Soil	ug/kg	7.185	100	15.72
SS61	Chloroform	67-66-3	Soil	ug/kg	0.7636	2.4	1.08
SS61	Chromium	7440-47-3	Soil	ug/kg	10260	14400	11750
SS61	Cobalt	7440-48-4	Soil	ug/kg	3718	4600	4247
SS61	Copper	7440-50-8	Soil	ug/kg	20670	45900	27700
SS61	Ethylbenzene	100-41-4	Soil	ug/kg	2.041	6.2	3.275
SS61	Fluorene	86-73-7	Soil	ug/kg	954.8	6600	2003
SS61	Iron	7439-89-6	Soil	ug/kg	8.48e+06	1.03e+07	1.03e+07
SS61	Isophorone	78-59-1	Soil	ug/kg	1728	10000	3555
SS61	Lead	7439-92-1	Soil	ug/kg	7500	19500	10820
SS61	M,p-xylene	MPXYLENES	Soil	ug/kg	15.45	110	34.77
SS61	Magnesium	7439-95-4	Soil	ug/kg	3.05e+06	5.28e+06	3.72e+06
SS61	Manganese	7439-96-5	Soil	ug/kg	1.35e+05	1.96e+05	1.60e+05
SS61	Methylene chloride	75-09-2	Soil	ug/kg	0.8909	2.3	1.217
SS61	Naphthalene	91-20-3	Soil	ug/kg	4003	35000	9716
SS61	Nickel	7440-02-0	Soil	ug/kg	10060	12400	11300
SS61	o-Xylene	95-47-6	Soil	ug/kg	1.073	3.5	1.579
SS61	Phenanthrene	85-01-8	Soil	ug/kg	1173	6600	2328
SS61	Tetrachloroethylene (PCE)	127-18-4	Soil	ug/kg	29.03	140	53.72
SS61	Toluene	108-88-3	Soil	ug/kg	14.24	100	31.75
SS61	Trans-1,2-dichloroethene	156-60-5	Soil	ug/kg	0.8318	2.9	1.236
SS61	Trichloroethene (TCE)	79-01-6	Soil	ug/kg	50.82	250	95.78
SS61	Trichlorofluoromethane	75-69-4	Soil	ug/kg	0.75	2.3	1.049
SS61	Vanadium	7440-62-2	Soil	ug/kg	17050	22200	19100
SS61	Zinc	7440-66-6	Soil	ug/kg	23420	45900	29050
	Groundwater						
SS61-sp	Cis-1,2-dichloroethene	156-59-2	Water	ug/L	1285	3200	2376
SS61-sp	Ethylbenzene	100-41-4	Water	ug/L	2.114	5.8	3.308
SS61-sp	Gasoline	8006-61-9	Water	ug/L	647.1	2000	1288
SS61-sp	Trans-1,2-dichloroethylene	156-60-5	Water	ug/L	21.9	56	38.69
SS61-sp	Trichloroethene	79-01-6	Water	ug/L	310.4	1100	664.5
SS61-sp	Xylenes (total)	1330-20-7	Water	ug/L	12.57	35	23.7
Operable Unit 4							
	Groundwater						
DP25	4-Methyl-2-pentanone	108-10-1	Water	ug/L	27.39	78	30.7
DP25	Acetone	67-64-1	Water	ug/L	43.64	100	57.98
DP25	Acetone		Water	ug/L	12.66	100	17.66
DP25	Arsenic	7440-38-2	Water	ug/L	16.75	31	31
DP25	Barium	7440-39-3	Water	ug/L	150.3	210	210

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
DP25	Benzene	71-43-2	Water	ug/L	171.7	1700	325
DP25	Calcium	7440-70-2	Water	ug/L	63670	77000	77000
DP25	Chloride	16887-00-6	Water	ug/L	1550	1700	1700
DP25	Cis-1,2-dichloroethene	156-59-2	Water	ug/L	0.5667	1.1	0.6907
DP25	Copper	7440-50-8	Water	ug/L	21	28	28
DP25	Ethylbenzene	100-41-4	Water	ug/L	21.44	150	51.72
DP25	Fluoride	7782-41-4	Water	ug/L	300	400	400
DP25	h-Chlorofluorobenzene	PPP-PP-P	Water	ug/L	11	11	11
DP25	Iron	7439-89-6	Water	ug/L	7820	16000	16000
DP25	Lead	7439-92-1	Water	ug/L	12.88	60	18.25
DP25	Magnesium	7439-95-4	Water	ug/L	14000	17000	17000
DP25	Manganese	7439-96-5	Water	ug/L	3167	6600	6600
DP25	Methylenechloride	75-09-2	Water	ug/L	7.958	25	13.08
DP25	Nitrate	14797-55-8	Water	ug/L	300	400	400
DP25	p-Chlorofluorobenzene	QQQ-QQ-Q	Water	ug/L	11	11	11
DP25	Potassium	7440-09-7	Water	ug/L	3900	4500	4500
DP25	Sodium	7440-23-5	Water	ug/L	5267	7000	7000
DP25	Sulfate	12808-79-8	Water	ug/L	11550	22000	22000
DP25	Toluene	108-88-3	Water	ug/L	527.2	8900	1214
DP25	Total organic carb	TOC	Water	ug/L	1000	1000	1000
DP25	TPH-diesel	TPH-D	Water	ug/L	2000	11000	3871
DP25	TPH-gasoline	TPH-G	Water	ug/L	2893	19000	5335
DP25	Xylenes (total)	1330-20-7	Water	ug/L	431	3400	748
DP25	Zinc	7440-66-6	Water	ug/L	42.67	86	86
	Surface Soil						
DP25	Benzene	71-43-2	Soil	ug/kg	410	410	410
DP25	DDT, pp'	50-29-3	Soil	ug/kg	1.533	5.7	3.244
DP25	Dieldrin	60-57-1	Soil	ug/kg	1.75	8	4.269
DP25	Endosulfan, a	115-29-7	Soil	ug/kg	2.833	9	5.908
DP25	Ethylbenzene	100-41-4	Soil	ug/kg	615.9	3000	1278
DP25	Heptachlor epoxide	1024-57-3	Soil	ug/kg	0.65	1.4	0.9523
DP25	Lead	7439-92-1	Soil	ug/kg	5098	25300	5936
DP25	PCB-1254 (aroclor)	11097-69-1	Soil	ug/kg	56	172	117.8
DP25	Toluene	108-88-3	Soil	ug/kg	1054	3100	3100
DP25	TPH	TPH	Soil	ug/kg	1.07e+05	5.89e+05	3.01e+05
DP25	Xylenes (total)	1330-20-7	Soil	ug/kg	5887	15000	13710
	Subsurface Soil						
DP25	DDE, pp'	72-55-9	Soil	ug/kg	0.6667	2	0.9767
DP25	DDT, pp'	50-29-3	Soil	ug/kg	2.667	17	6.023
DP25	Diethyl ether	60-29-7	Soil	ug/kg	144.4	500	227.1
DP25	Ethylbenzene	100-41-4	Soil	ug/kg	56.67	190	87.67
DP25	Heptachlor epoxide	1024-57-3	Soil	ug/kg	28.22	250	79.79
DP25	Lead	7439-92-1	Soil	ug/kg	1.31e+05	8.70e+05	3.71e+05
DP25	PCB-1254 (Aroclor)	11097-69-1	Soil	ug/kg	92.11	613	213.2
DP25	TPH	TPH	Soil	ug/kg	66570	2.89e+05	1.40e+05
DP25	Xylenes (total)	7440-66-6	Soil	ug/kg	47.78	110	62.24

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
	Groundwater						
ST27	Arsenic	7440-38-2	Water	ug/L	14.77	30	20.36
ST27	Barium	7440-39-3	Water	ug/L	279.8	590	381
ST27	Calcium	7440-70-2	Water	ug/L	46750	56000	50880
ST27	Chloride	16887-00-6	Water	ug/L	1233	1400	1400
ST27	Chromium	7440-47-3	Water	ug/L	11.38	21	13.98
ST27	Cobalt	7440-48-4	Water	ug/L	12.75	32	17.96
ST27	Copper	7440-50-8	Water	ug/L	96	430	188.8
ST27	Fluoride	7782-41-4	Water	ug/L	166.7	200	200
ST27	h-Chlorofluorobenzene	PPP-PP-P	Water	ug/L	9.4	11	10.04
ST27	Iron	7439-89-6	Water	ug/L	9012	23000	13730
ST27	Lead	7439-92-1	Water	ug/L	16.62	120	31.09
ST27	Magnesium	7439-95-4	Water	ug/L	11140	15000	12770
ST27	Manganese	7439-96-5	Water	ug/L	3385	12000	5807
ST27	Nickel	7440-02-0	Water	ug/L	25.5	82	41.31
ST27	Nitrate	14797-55-8	Water	ug/L	533.3	1100	1100
ST27	p-Chlorofluorobenzene	QQQ-QQ-Q	Water	ug/L	9.757	10	9.985
ST27	Potassium	7440-09-7	Water	ug/L	3038	3900	3343
ST27	Sodium	7440-23-5	Water	ug/L	4538	5600	4997
ST27	Sulfate	12808-79-8	Water	ug/L	11270	15000	15000
ST27	Total organic carb.	TOC	Water	ug/L	5000	5000	5000
ST27	Vanadium	7440-62-2	Water	ug/L	24.5	91	42.5
ST27	Zinc	7440-66-6	Water	ug/L	106.2	400	188.7
	Surface Soil						
ST27	Benzene	71-43-2	Soil	ug/kg	6	6	6
ST27	Lead	7439-92-1	Soil	ug/kg	6590	37600	9288
ST27	Toluene	108-88-3	Soil	ug/kg	17	17	17
	Subsurface Soil						
ST27	Lead	7439-92-1	Soil	ug/kg	7500	8000	8000
	Groundwater						
WP33	Aluminum	7429-90-5	Water	ug/L	593.3	969	969
WP33	Arsenic	7440-38-2	Water	ug/L	14.67	18.2	18.2
WP33	Barium	7440-39-3	Water	ug/L	230.7	335	335
WP33	Calcium	7440-70-2	Water	ug/L	69870	94400	94400
WP33	Copper	7440-50-8	Water	ug/L	12.77	15	15
WP33	Iron	7439-89-6	Water	ug/L	3640	4360	4360
WP33	Lead	7439-92-1	Water	ug/L	3.85	3.9	3.9
WP33	Magnesium	7439-95-4	Water	ug/L	12820	16000	16000
WP33	Manganese	7439-96-5	Water	ug/L	6297	8850	8850
WP33	Nickel	7440-02-0	Water	ug/L	20.9	20.9	20.9
WP33	Potassium	7440-09-7	Water	ug/L	11250	14000	14000
WP33	Sodium	7440-23-5	Water	ug/L	34970	36900	36900
WP33	Zinc	7440-66-6	Water	ug/L	34.23	40.9	40.9
	Groundwater						
SS35	1,2-Dichloroethane	107-06-2	Water	ug/L	0.4958	3.2	0.9374
SS35	4,4'-DDE	72-55-9	Water	ug/L	0.03231	0.12	0.04533

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS35	4,4'-DDT	50-29-3	Water	ug/L	0.06538	0.16	0.08405
SS35	Benzene	71-43-2	Water	ug/L	1.208	3.5	1.582
SS35	Beta-BHC	319-85-7	Water	ug/L	0.02692	0.05	0.03035
SS35	Cis-1,2-dichloroethylene	156-59-2	Water	ug/L	0.55	1.1	0.6398
SS35	Gamma-BHC (lindane)	58-89-9	Water	ug/L	0.02846	0.07	0.03463
SS35	Lead	7439-92-1	Water	ug/L	11.62	68	21.14
SS35	Toluene	108-88-3	Water	ug/L	1.192	3.3	1.536
SS35	Xylenes (total)	1330-20-7	Water	ug/L	3.075	9.4	4.108
	Surface Soil						
SS35	2-Methylnaphthalene	91-57-6	Soil	ug/kg	5270	21000	17610
SS35	4,4'-DDD	72-54-8	Soil	ug/kg	437.8	5100	1076
SS35	4,4'-DDE	72-55-9	Soil	ug/kg	2731	19000	5711
SS35	4,4'-DDT	50-29-3	Soil	ug/kg	4304	49000	10430
SS35	Alpha-BHC	319-84-6	Soil	ug/kg	6.5	17	9.342
SS35	Aluminum (sed)	7429-90-5	Soil	ug/kg	7.06e+06	9.25e+06	9.25e+06
SS35	Barium (sed)	7440-39-3	Soil	ug/kg	87000	1.10e+05	1.10e+05
SS35	Beryllium (sed)	7440-41-7	Soil	ug/kg	607	1010	1010
SS35	Beta-BHC	319-85-7	Soil	ug/kg	4.227	10	5.765
SS35	Cadmium (sed)	7440-43-9	Soil	ug/kg	969.8	2040	2040
SS35	Calcium (sed)	7440-70-2	Soil	ug/kg	3.99e+06	5.66e+06	5.66e+06
SS35	Chlordane	57-74-9	Soil	ug/kg	60.46	410	119
SS35	Chromium (sed)	7440-47-3	Soil	ug/kg	12680	16400	16400
SS35	Cobalt (sed)	7440-48-4	Soil	ug/kg	6837	8170	8170
SS35	Copper (sed)	7440-50-8	Soil	ug/kg	18830	25600	25600
SS35	Endosulfan I	115-29-7	Soil	ug/kg	8.25	31	14.41
SS35	Endrin	72-20-8	Soil	ug/kg	6.875	20	10.43
SS35	Gamma-BHC (lindane)	58-89-9	Soil	ug/kg	141.9	1100	401.3
SS35	Heptachlor	76-44-8	Soil	ug/kg	3.791	5	4.922
SS35	Heptachlor epoxide	1024-57-3	Soil	ug/kg	27.88	30	30
SS35	Iron (sed)	7439-89-6	Soil	ug/kg	1.40e+07	1.82e+07	1.82e+07
SS35	Lead	7439-92-1	Soil	ug/kg	28950	1.20e+05	47210
SS35	Magnesium (sed)	7439-95-4	Soil	ug/kg	4.17e+06	5.38e+06	5.38e+06
SS35	Manganese (sed)	7439-96-5	Soil	ug/kg	2.63e+05	3.38e+05	3.38e+05
SS35	Naphthalene	91-20-3	Soil	ug/kg	911.2	3600	3020
SS35	Nickel (sed)	7440-02-0	Soil	ug/kg	15930	19900	19900
SS35	Potassium (sed)	7440-09-7	Soil	ug/kg	6.42e+05	7.68e+05	7.68e+05
SS35	Sodium (sed)	7440-23-5	Soil	ug/kg	2.89e+05	3.68e+05	3.68e+05
SS35	TPH	TPH	Soil	ug/kg	22380	3.80e+05	47240
SS35	Vanadium (sed)	7440-62-2	Soil	ug/kg	26530	35500	35500
SS35	Zinc (sed)	7440-66-6	Soil	ug/kg	41400	54100	54100
	Subsurface Soil						
SS35	2-Methylnaphthalene	91-57-6	Soil	ug/kg	31	70	54.21
SS35	Aldrin	309-00-2	Soil	ug/kg	1.925	6.2	5.278
SS35	Aluminum (sed)	7429-90-5	Soil	ug/kg	9.35e+06	1.19e+07	1.19e+07
SS35	Barium (sed)	7440-39-3	Soil	ug/kg	1.85e+05	3.88e+05	3.54e+05
SS35	Beryllium (sed)	7440-41-7	Soil	ug/kg	750.5	1030	1030

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS35	BHC. beta	319-85-7	Soil	ug/kg	0.825	1.8	1.59
SS35	Calcium (sed)	7440-70-2	Soil	ug/kg	6.79e+06	1.14e+07	1.13e+07
SS35	Chlordane	57-74-9	Soil	ug/kg	76.94	269	147.8
SS35	Chromium (sed)	7440-47-3	Soil	ug/kg	15880	21300	20630
SS35	Cobalt (sed)	7440-48-4	Soil	ug/kg	8270	11200	10590
SS35	Copper (sed)	7440-50-8	Soil	ug/kg	24550	33000	33000
SS35	DDD. pp'	72-54-8	Soil	ug/kg	6819	58500	18840
SS35	DDE. pp'	72-55-9	Soil	ug/kg	2196	9710	4272
SS35	DDT. pp'	50-29-3	Soil	ug/kg	64680	3.96e+05	1.46e+05
SS35	Fluoranthene	206-44-0	Soil	ug/kg	33	70	57.45
SS35	Heptachlor	76-44-8	Soil	ug/kg	0.52	0.6	0.5626
SS35	Iron (sed)	7439-89-6	Soil	ug/kg	1.71e+07	2.40e+07	2.30e+07
SS35	Lead (sed)	7439-92-1	Soil	ug/kg	11370	45100	19760
SS35	Magnesium (sed)	7439-95-4	Soil	ug/kg	4.93e+06	6.42e+06	6.24e+06
SS35	Manganese (sed)	7439-96-5	Soil	ug/kg	4.25e+05	9.00e+05	8.02e+05
SS35	Nickel (sed)	7440-02-0	Soil	ug/kg	19750	24900	24900
SS35	Phenanthrene	85-01-8	Soil	ug/kg	18	30	24.4
SS35	Potassium (sed)	7440-09-7	Soil	ug/kg	7.57e+05	9.34e+05	9.22e+05
SS35	Pyrene	129-00-0	Soil	ug/kg	26	70	49.45
SS35	Sodium (sed)	7440-23-5	Soil	ug/kg	3.47e+05	4.65e+05	4.48e+05
SS35	TPH	TPH	Soil	ug/kg	90310	7.93e+05	1.66e+05
SS35	Vanadium (sed)	7440-62-2	Soil	ug/kg	33220	38500	38500
SS35	Zinc (sed)	7440-66-6	Soil	ug/kg	50650	73400	69780
	Groundwater						
SS36	Barium	7440-39-3	Water	ug/L	210	330	330
SS36	Calcium	7440-70-2	Water	ug/L	1.01e+05	1.60e+05	1.60e+05
SS36	Iron	7439-89-6	Water	ug/L	10230	19000	19000
SS36	Magnesium	7439-95-4	Water	ug/L	19330	26000	26000
SS36	Manganese	7439-96-5	Water	ug/L	2600	4400	4400
SS36	Potassium	7440-09-7	Water	ug/L	4333	4900	4900
SS36	Sodium	7440-23-5	Water	ug/L	7067	8300	8300
SS36	Zinc	7440-66-6	Water	ug/L	7.333	12	12
	Surface Soil						
SS36	Lead	7439-92-1	Soil	ug/kg	5273	7000	5824
	Subsurface Soil						
SS36	Arsenic	7440-38-2	Soil	ug/kg	24000	24000	24000
SS36	Barium	7440-39-3	Soil	ug/kg	48000	62000	62000
SS36	Beryllium	7440-41-7	Soil	ug/kg	566.7	1400	1400
SS36	Calcium	7440-70-2	Soil	ug/kg	2.35e+06	2.40e+06	2.40e+06
SS36	Chromium	7440-47-3	Soil	ug/kg	5.71e+05	1.70e+06	1.70e+06
SS36	Cobalt	7440-48-4	Soil	ug/kg	4000	4000	4000
SS36	Copper	7440-50-8	Soil	ug/kg	33670	83000	83000
SS36	DDD, pp'	72-54-8	Soil	ug/kg	15	15	15
SS36	DDE, pp'	72-55-9	Soil	ug/kg	80	80	80
SS36	DDT, pp'	50-29-3	Soil	ug/kg	240	240	240
SS36	Iron	7439-89-6	Soil	ug/kg	6.35e+06	7.60e+06	7.60e+06

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS36	Lead	7439-92-1	Soil	ug/kg	2.61e+06	7.80e+06	7.80e+06
SS36	Magnesium	7439-95-4	Soil	ug/kg	2.05e+06	2.30e+06	2.30e+06
SS36	Manganese	7439-96-5	Soil	ug/kg	99000	1.20e+05	1.20e+05
SS36	Nickel	7440-02-0	Soil	ug/kg	20670	45000	45000
SS36	Potassium	7440-09-7	Soil	ug/kg	3.80e+05	4.40e+05	4.40e+05
SS36	Selenium	7782-49-2	Soil	ug/kg	600	600	600
SS36	Sodium	7440-23-5	Soil	ug/kg	2.70e+05	2.90e+05	2.90e+05
SS36	Vanadium	7440-62-2	Soil	ug/kg	11000	13000	13000
SS36	Zinc	7440-66-6	Soil	ug/kg	40670	96000	96000
	Groundwater						
SS37	Aluminum	7429-90-5	Water	ug/L	141.6	387	334.5
SS37	Arsenic	7440-38-2	Water	ug/L	25.98	56.7	50.12
SS37	Barium	7440-39-3	Water	ug/L	162.8	207	207
SS37	Bis(2-ethylhexyl)phthalate	117-81-7	Water	ug/L	3.86	5	5
SS37	Calcium	7440-70-2	Water	ug/L	48280	50400	50400
SS37	Chromium	7440-47-3	Water	ug/L	2.25	2.7	2.7
SS37	Cobalt	7440-48-4	Water	ug/L	0.8	1.1	1.1
SS37	Copper	7440-50-8	Water	ug/L	3.475	9	7.835
SS37	Iron	7439-89-6	Water	ug/L	9405	17000	16000
SS37	Lead	7439-92-1	Water	ug/L	1.225	3.4	2.931
SS37	Magnesium	7439-95-4	Water	ug/L	11020	11400	11400
SS37	Manganese	7439-96-5	Water	ug/L	1782	2590	2590
SS37	Nickel	7440-02-0	Water	ug/L	2.05	3.3	3.069
SS37	Potassium	7440-09-7	Water	ug/L	3498	3620	3620
SS37	Sodium	7440-23-5	Water	ug/L	5720	7950	7471
SS37	Tin	7440-31-5	Water	ug/L	1.85	2.2	2.2
SS37	Total dissolved solids	0	Water	ug/L	60320	2.40e+05	1.04e+05
SS37	Vanadium	7440-62-2	Water	ug/L	1.675	4.6	3.993
SS37	Zinc	7440-66-6	Water	ug/L	8.475	15.3	13.95
	Surface Soil						
SS37	2-Butanone	78-93-3	Soil	ug/kg	245.3	1300	588.7
SS37	2-Methylnaphthalene	91-57-6	Soil	ug/kg	4795	30000	9059
SS37	Anthracene	120-12-7	Soil	ug/kg	240	240	240
SS37	Benzoic acid	65-85-0	Soil	ug/kg	66	66	66
SS37	Chrysene	218-01-9	Soil	ug/kg	430	430	430
SS37	Dibenzofuran	132-64-9	Soil	ug/kg	323.3	440	440
SS37	Ethylbenzene	100-41-4	Soil	ug/kg	827.5	4200	2198
SS37	Fluoranthene	206-44-0	Soil	ug/kg	570	570	570
SS37	Fluorene	86-73-7	Soil	ug/kg	902.5	3100	2631
SS37	Lead	7439-92-1	Soil	ug/kg	11010	2.50e+05	19200
SS37	Naphthalene	91-20-3	Soil	ug/kg	3567	12000	6948
SS37	o-Xylene	95-47-6	Soil	ug/kg	38.67	42	42
SS37	Phenanthrene	85-01-8	Soil	ug/kg	1188	2300	2300
SS37	Phenol	108-95-2	Soil	ug/kg	30.5	35	35
SS37	Pyrene	129-00-0	Soil	ug/kg	420	640	640
SS37	Toluene	108-88-3	Soil	ug/kg	426.1	3500	884.1

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS37	Trichloroethene	79-01-6	Soil	ug/kg	2	3	2.674
SS37	Xylenes (total)	1330-20-7	Soil	ug/kg	3158	24000	8078
	Subsurface Soil						
SS37	1,1,1-Trichloroethane	71-55-6	Soil	ug/kg	72	72	72
SS37	2-Butanone (mek)	78-93-3	Soil	ug/kg	17	17	17
SS37	2-Methylnaphthalene	91-57-6	Soil	ug/kg	8595	26000	22390
SS37	4,4'-DDT	50-29-3	Soil	ug/kg	70	70	70
SS37	Benzo(a)anthracene	56-55-3	Soil	ug/kg	210	210	210
SS37	Beta-BHC	319-85-7	Soil	ug/kg	5	5	5
SS37	Chrysene	218-01-9	Soil	ug/kg	290	290	290
SS37	Dibenzofuran	132-64-9	Soil	ug/kg	544.5	1000	1000
SS37	Ethylbenzene	100-41-4	Soil	ug/kg	11640	43000	29460
SS37	Fluoranthrene	206-44-0	Soil	ug/kg	98.5	290	250.9
SS37	Fluorene	86-73-7	Soil	ug/kg	633.5	1200	1200
SS37	Lead	7439-92-1	Soil	ug/kg	26510	1.80e+05	43520
SS37	Naphthalene	91-20-3	Soil	ug/kg	5633	12000	12000
SS37	Phenanthrene	85-01-8	Soil	ug/kg	153.8	410	303.8
SS37	Pyrene	129-00-0	Soil	ug/kg	116.5	360	308.7
SS37	Toluene	108-88-3	Soil	ug/kg	16690	79000	49950
SS37	Trichloroethene	79-01-6	Soil	ug/kg	2.667	3	3
SS37	Xylenes (total)	1330-20-7	Soil	ug/kg	51790	2.10e+05	1.24e+05
	Groundwater						
SS39/63	Barium	7440-39-3	Water	ug/L	138.3	210	195.4
SS39/63	Calcium	7440-70-2	Water	ug/L	41010	51000	51000
SS39/63	Copper	7440-50-8	Water	ug/L	14.33	36	23.07
SS39/63	Iron	7439-89-6	Water	ug/L	3835	9100	6648
SS39/63	Magnesium	7439-95-4	Water	ug/L	8475	11000	11000
SS39/63	Manganese	7439-96-5	Water	ug/L	1768	3300	2661
SS39/63	Potassium	7440-09-7	Water	ug/L	2942	3800	3800
SS39/63	Sodium	7440-23-5	Water	ug/L	3492	4600	4600
SS39/63	Total organic carb.	TOC	Water	ug/L	5000	5000	5000
SS39/63	Zinc	7440-66-6	Water	ug/L	12.67	32	21.38
	Surface Soil						
SS39/63	2-Methylnaphthalene	91-57-6	Soil	ug/kg	85.59	1200	207.2
SS39/63	Aluminum	7429-90-5	Soil	ug/kg	4.59e+06	7.26e+06	6.82e+06
SS39/63	Barium	7440-39-3	Soil	ug/kg	69280	92000	92000
SS39/63	Beryllium	7440-41-7	Soil	ug/kg	408.8	750	750
SS39/63	BHC, beta	319-85-7	Soil	ug/kg	0.875	2	1.757
SS39/63	Cadmium	7440-43-9	Soil	ug/kg	692.9	1080	1080
SS39/63	Calcium	7440-70-2	Soil	ug/kg	2.06e+06	3.72e+06	3.39e+06
SS39/63	Chlordane	57-74-9	Soil	ug/kg	0.875	2	1.757
SS39/63	Chromium	7440-47-3	Soil	ug/kg	13450	32300	28340
SS39/63	Cobalt	7440-48-4	Soil	ug/kg	5380	8250	7797
SS39/63	Copper	7440-50-8	Soil	ug/kg	15500	22100	22100
SS39/63	DDD, pp'	72-54-8	Soil	ug/kg	37.74	328	67.33
SS39/63	DDE, pp'	72-55-9	Soil	ug/kg	10.19	127	20.61

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
SS39/63	DDT. pp'	50-29-3	Soil	ug/kg	28.5	437	64.26
SS39/63	Endosulfan. a	115-29-7	Soil	ug/kg	0.875	2	1.757
SS39/63	Endrin aldehyde	7421-93-4	Soil	ug/kg	0.875	2	1.757
SS39/63	Fluorene	86-73-7	Soil	ug/kg	93.53	680	186.2
SS39/63	Iron	7439-89-6	Soil	ug/kg	1.00e+07	1.53e+07	1.43e+07
SS39/63	Isophorone	78-59-1	Soil	ug/kg	779.7	13000	2113
SS39/63	Kerosene	8008-20-6	Soil	ug/kg	570.4	3900	1132
SS39/63	Lead	7439-92-1	Soil	ug/kg	7870	11500	11500
SS39/63	Magnesium	7439-95-4	Soil	ug/kg	2.80e+06	4.34e+06	4.11e+06
SS39/63	Manganese	7439-96-5	Soil	ug/kg	2.00e+05	2.86e+05	2.73e+05
SS39/63	Naphthalene	91-20-3	Soil	ug/kg	69.71	930	163.6
SS39/63	Nickel	7440-02-0	Soil	ug/kg	11120	16700	15540
SS39/63	Potassium	7440-09-7	Soil	ug/kg	4.36e+05	5.44e+05	5.44e+05
SS39/63	Sodium	7440-23-5	Soil	ug/kg	1.88e+05	2.86e+05	2.66e+05
SS39/63	Total petroleum hydrocarbons	TPH	Soil	ug/kg	8.74e+05	1.78e+07	1.52e+06
SS39/63	Vanadium	7440-62-2	Soil	ug/kg	17950	26900	25450
SS39/63	Zinc	7440-66-6	Soil	ug/kg	32700	45200	45200
	Subsurface Soil						
SS39/63	Aluminum	7429-90-5	Soil	ug/kg	8.99e+06	1.04e+07	1.04e+07
SS39/63	Arsenic	7440-38-2	Soil	ug/kg	5093	8890	8890
SS39/63	Barium	7440-39-3	Soil	ug/kg	89170	99200	99200
SS39/63	Beryllium	7440-41-7	Soil	ug/kg	987.3	1450	1450
SS39/63	Cadmium	7440-43-9	Soil	ug/kg	753.5	1290	1290
SS39/63	Calcium	7440-70-2	Soil	ug/kg	3.60e+06	4.28e+06	4.28e+06
SS39/63	Chlordane	57-74-9	Soil	ug/kg	4	11	11
SS39/63	Chromium	7440-47-3	Soil	ug/kg	16300	18700	18700
SS39/63	Cobalt	7440-48-4	Soil	ug/kg	8287	9390	9390
SS39/63	Copper	7440-50-8	Soil	ug/kg	18120	21900	21900
SS39/63	DDD, pp'	72-54-8	Soil	ug/kg	58.4	262	167.4
SS39/63	DDE, pp'	72-55-9	Soil	ug/kg	12.9	56	36.03
SS39/63	DDT, pp'	50-29-3	Soil	ug/kg	97.4	356	244.1
SS39/63	Endosulfan, a	115-29-7	Soil	ug/kg	5.667	16	16
SS39/63	Endrin aldehyde	7421-93-4	Soil	ug/kg	17	50	50
SS39/63	Iron	7439-89-6	Soil	ug/kg	1.78e+07	2.06e+07	2.06e+07
SS39/63	Kerosene	8008-20-6	Soil	ug/kg	12890	82000	21690
SS39/63	Lead	7439-92-1	Soil	ug/kg	11640	14000	14000
SS39/63	Magnesium	7439-95-4	Soil	ug/kg	4.83e+06	5.45e+06	5.45e+06
SS39/63	Manganese	7439-96-5	Soil	ug/kg	2.31e+05	2.84e+05	2.84e+05
SS39/63	Nickel	7440-02-0	Soil	ug/kg	18000	20100	20100
SS39/63	Potassium	7440-09-7	Soil	ug/kg	6.54e+05	7.05e+05	7.05e+05
SS39/63	Sodium	7440-23-5	Soil	ug/kg	3.35e+05	3.89e+05	3.89e+05
SS39/63	Total petroleum hydrocarbons	TPH	Soil	ug/kg	6.45e+06	4.10e+08	1.67e+07
SS39/63	Vanadium	7440-62-2	Soil	ug/kg	33000	37800	37800
SS39/63	Zinc	7440-66-6	Soil	ug/kg	47130	51800	51800

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
	Groundwater						
ST58	4-Methyl-2-pentanone	108-10-1	Water	ug/L	29	77	36.13
ST58	Benzene	71-43-2	Water	ug/L	29.35	180	57.81
ST58	Diesel	68334-30-5	Water	ug/L	8312	99000	21810
ST58	Gasoline	8006-61-9	Water	ug/L	20920	2.60e+05	56430
ST58	Lead	7439-92-1	Water	ug/L	76.5	180	103.8
ST58	Methylene chloride	75-09-2	Water	ug/L	2.7	9	3.641
ST58	Toluene	108-88-3	Water	ug/L	13.1	140	31.94
ST58	Xylenes (total)	1330-20-7	Water	ug/L	71.46	830	184.3
	Groundwater						
SS64	Aluminum	7429-90-5	Water	ug/L	1230	1460	1460
SS64	Arsenic	7440-38-2	Water	ug/L	10.1	13.1	13.1
SS64	Barium	7440-39-3	Water	ug/L	213	230	230
SS64	Bis(2-ethylhexyl)phthalate	117-81-7	Water	ug/L	3.967	5	5
SS64	Calcium	7440-70-2	Water	ug/L	54770	55100	55100
SS64	Cobalt	7440-48-4	Water	ug/L	7.5	7.5	7.5
SS64	Copper	7440-50-8	Water	ug/L	24.3	36.1	36.1
SS64	Di-n-butylphthalate	84-74-2	Water	ug/L	3.133	3.6	3.6
SS64	Iron	7439-89-6	Water	ug/L	5727	7770	7770
SS64	Lead	7439-92-1	Water	ug/L	8.467	12.8	12.8
SS64	Magnesium	7439-95-4	Water	ug/L	13200	13300	13300
SS64	Manganese	7439-96-5	Water	ug/L	3347	5770	5770
SS64	Nickel	7440-02-0	Water	ug/L	9.9	11.8	11.8
SS64	Sodium	7440-23-5	Water	ug/L	5437	5780	5780
SS64	Tetrachloroethylene (PCE)	127-18-4	Water	ug/L	0.9233	1.7	1.7
SS64	Trans-1,2-dichloroethene	156-60-5	Water	ug/L	0.8667	1.6	1.6
SS64	Trichloroethene (TCE)	79-01-6	Water	ug/L	1.067	2.7	2.7
SS64	Vanadium	7440-62-2	Water	ug/L	7.65	7.7	7.7
SS64	Zinc	7440-66-6	Water	ug/L	23.3	23.4	23.4
Operable Unit 5							
	Groundwater						
LF02	Aluminum	7429-90-5	Water	ug/L	5245	8570	8570
LF02	Antimony	7440-36-0	Water	ug/L	5.325	19.8	16.68
LF02	Arsenic	7440-38-2	Water	ug/L	120.1	295	257.6
LF02	Barium	7440-39-3	Water	ug/L	238.6	392	392
LF02	Calcium	7440-70-2	Water	ug/L	49520	56400	56400
LF02	Chloride	Chloride	Water	ug/L	8265	16000	16000
LF02	Chromium	7440-47-3	Water	ug/L	14.9	19.9	19.9
LF02	Copper	7440-50-8	Water	ug/L	38.48	55.9	53.71
LF02	Di-n-butylphthalate	84-74-2	Water	ug/L	1.75	2	2
LF02	Iron	7439-89-6	Water	ug/L	31600	60600	54450
LF02	Lead	7439-92-1	Water	ug/L	11.57	18.3	18.14
LF02	Magnesium	7439-95-4	Water	ug/L	17000	23200	22960
LF02	Manganese	7439-96-5	Water	ug/L	1345	1460	1460
LF02	Methylene chloride	75-09-2	Water	ug/L	0.7	1.7	1.103
LF02	Nickel	7440-02-0	Water	ug/L	22.9	22.9	22.9

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF02	Potassium	7440-09-7	Water	ug/L	9250	11400	11400
LF02	Sodium	7440-23-5	Water	ug/L	13690	22400	21150
LF02	Sulfate	Sulfate	Water	ug/L	11450	39000	33200
LF02	Toluene	108-88-3	Water	ug/L	0.7833	2.2	1.354
LF02	Total dissolved solids	TDS	Water	ug/L	2.38e+05	3.10e+05	3.10e+05
LF02	Trans-1,2-dichloroethene	156-60-5	Water	ug/L	0.65	1.4	0.9523
LF02	Vanadium	7440-62-2	Water	ug/L	21.17	35.2	33.93
LF02	Zinc	7440-66-6	Water	ug/L	90.6	126	118.6
	Groundwater						
LF03/FT09	1,1,1-Trichloroethane	71-55-6	Water	ug/L	0.775	5	1.169
LF03/FT09	1,1-Dichloroethane	75-34-3	Water	ug/L	2.125	33	4.935
LF03/FT09	1,2-Dichlorobenzene	95-50-1	Water	ug/L	9.462	250	21.86
LF03/FT09	1,4-Dichlorobenzene	106-46-7	Water	ug/L	10.91	250	23.82
LF03/FT09	4,4'-DDD	72-54-8	Water	ug/L	0.058	0.21	0.07183
LF03/FT09	4-Methylphenol	106-44-5	Water	ug/L	314.8	6200	850.3
LF03/FT09	Aluminum	7429-90-5	Water	ug/L	8136	37800	12340
LF03/FT09	Arsenic	7440-38-2	Water	ug/L	34.05	100	44.46
LF03/FT09	Barium	7440-39-3	Water	ug/L	358.9	1070	449.1
LF03/FT09	Benzene	71-43-2	Water	ug/L	1.695	20	3.374
LF03/FT09	Bis(2-ethylhexyl)phthalate	117-81-7	Water	ug/L	20.83	250	42.61
LF03/FT09	Bromide	Bromide	Water	ug/L	80	480	117.8
LF03/FT09	Cadmium	7440-43-9	Water	ug/L	1.276	11.7	2.424
LF03/FT09	Calcium	7440-70-2	Water	ug/L	90040	5.84e+05	1.35e+05
LF03/FT09	Chloride	Chloride	Water	ug/L	11270	99000	20300
LF03/FT09	Chromium	7440-47-3	Water	ug/L	20.34	31.8	24.2
LF03/FT09	Copper	7440-50-8	Water	ug/L	62.77	252	88.05
LF03/FT09	Di-n-butylphthalate	84-74-2	Water	ug/L	17.09	250	38.29
LF03/FT09	Dichlorodifluoromethane	75-71-8	Water	ug/L	33.44	650	89.54
LF03/FT09	Diethylphthalate	84-66-2	Water	ug/L	17.06	250	38.26
LF03/FT09	Ethylbenzene	100-41-4	Water	ug/L	2.485	38	5.72
LF03/FT09	Iron	7439-89-6	Water	ug/L	68590	5.45e+05	1.55e+05
LF03/FT09	Lead	7439-92-1	Water	ug/L	23.65	61.9	31.57
LF03/FT09	M,p-xylene	MPXYLENES	Water	ug/L	2.805	44	6.56
LF03/FT09	Magnesium	7439-95-4	Water	ug/L	20340	53700	24980
LF03/FT09	Manganese	7439-96-5	Water	ug/L	2652	7420	3279
LF03/FT09	Methylene chloride	75-09-2	Water	ug/L	12.98	250	34.54
LF03/FT09	Naphthalene	91-20-3	Water	ug/L	17.06	250	38.26
LF03/FT09	Nickel	7440-02-0	Water	ug/L	38.28	56.5	49.96
LF03/FT09	o-Xylene	95-47-6	Water	ug/L	2.995	47	7.005
LF03/FT09	Phenol	108-95-2	Water	ug/L	17.25	250	38.43
LF03/FT09	Potassium	7440-09-7	Water	ug/L	10060	46600	15610
LF03/FT09	Sodium	7440-23-5	Water	ug/L	16440	91500	24630
LF03/FT09	Sulfate	Sulfate	Water	ug/L	9792	22000	11720
LF03/FT09	Tetrachloroethylene (PCE)	127-18-4	Water	ug/L	2.888	53	7.448
LF03/FT09	Toluene	108-88-3	Water	ug/L	23.58	460	63.29
LF03/FT09	Total dissolved solids	TDS	Water	ug/L	5.02e+05	4.60e+06	8.77e+05

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF03/FT09	Trichloroethene (TCE)	79-01-6	Water	ug/L	7.993	150	20.92
LF03/FT09	Trichlorofluoromethane	75-69-4	Water	ug/L	1.125	13	2.206
LF03/FT09	Vanadium	7440-62-2	Water	ug/L	20.79	43	29.89
LF03/FT09	Vinyl chloride	75-01-4	Water	ug/L	1.209	17	2.65
LF03/FT09	Zinc	7440-66-6	Water	ug/L	142.8	1030	241.3
	Surface Soil						
LF03/FT09	1,1,1-Trichloroethane	71-55-6	Soil	ug/kg	50.5	240	89.11
LF03/FT09	1,1-Dichloroethylene	75-35-4	Soil	ug/kg	75	300	120.8
LF03/FT09	2-Methylnaphthalene	91-57-6	Soil	ug/kg	748.9	4100	1528
LF03/FT09	4-Methylphenol	106-44-5	Soil	ug/kg	205.8	600	281.6
LF03/FT09	Acenaphthene	83-32-9	Soil	ug/kg	164.5	330	229.3
LF03/FT09	Aluminum	7429-90-5	Soil	ug/kg	6.94e+06	2.66e+07	1.08e+07
LF03/FT09	Arsenic	7440-38-2	Soil	ug/kg	4207	12300	6088
LF03/FT09	Barium	7440-39-3	Soil	ug/kg	3.26e+05	2.70e+06	7.60e+05
LF03/FT09	Benzene	71-43-2	Soil	ug/kg	26.3	65	34.18
LF03/FT09	Benzo(a)anthracene	56-55-3	Soil	ug/kg	216.8	1500	354.6
LF03/FT09	Benzo(a)pyrene	50-32-8	Soil	ug/kg	216.3	1700	370.7
LF03/FT09	Benzo(b)fluoranthene	205-99-2	Soil	ug/kg	271.4	330	330
LF03/FT09	Benzo(ghi)perylene	191-24-2	Soil	ug/kg	232.6	1400	360
LF03/FT09	Benzo(k)fluoranthene	207-08-9	Soil	ug/kg	242.9	2100	430.5
LF03/FT09	Beryllium	7440-41-7	Soil	ug/kg	757.3	1725	1015
LF03/FT09	Bis(2-ethylhexyl) phthalate	117-81-7	Soil	ug/kg	209.4	1700	316
LF03/FT09	Butylbenzylphthalate	85-68-7	Soil	ug/kg	181.4	330	245.4
LF03/FT09	Cadmium	7440-43-9	Soil	ug/kg	344.4	1280	562
LF03/FT09	Calcium	7440-70-2	Soil	ug/kg	1.09e+07	5.65e+07	2.00e+07
LF03/FT09	Chromium	7440-47-3	Soil	ug/kg	17680	35700	22780
LF03/FT09	Chrysene	218-01-9	Soil	ug/kg	252.5	2300	456.3
LF03/FT09	Cobalt	7440-48-4	Soil	ug/kg	10310	30700	14340
LF03/FT09	Copper	7440-50-8	Soil	ug/kg	28090	85100	40910
LF03/FT09	Di-n-butylphthalate	84-74-2	Soil	ug/kg	175	330	240.5
LF03/FT09	Di-n-octylphthalate	117-84-0	Soil	ug/kg	206.1	330	257.1
LF03/FT09	Dibenz[a,h]anthracene	53-70-3	Soil	ug/kg	189.2	400	253.2
LF03/FT09	Diethyl phthalate	84-66-2	Soil	ug/kg	181.7	330	246.1
LF03/FT09	Ethylbenzene	100-41-4	Soil	ug/kg	46	100	57
LF03/FT09	Fluoranthene	206-44-0	Soil	ug/kg	380.8	4500	781.7
LF03/FT09	Indeno(1,2,3-cd)pyrene	193-39-5	Soil	ug/kg	240.3	1500	375.2
LF03/FT09	Iron	7439-89-6	Soil	ug/kg	1.72e+07	4.20e+07	2.23e+07
LF03/FT09	Kerosene	8008-20-6	Soil	ug/kg	16970	1.10e+05	39720
LF03/FT09	Lead	7439-92-1	Soil	ug/kg	12850	1.32e+05	21900
LF03/FT09	Magnesium	7439-95-4	Soil	ug/kg	5.40e+06	1.48e+07	7.28e+06
LF03/FT09	Manganese	7439-96-5	Soil	ug/kg	3.01e+05	6.25e+05	3.77e+05
LF03/FT09	Mercury	7439-97-6	Soil	ug/kg	46.76	160.6	83.93
LF03/FT09	Methylene chloride	75-09-2	Soil	ug/kg	760	4400	1632
LF03/FT09	Molybdenum	7439-98-7	Soil	ug/kg	2137	7250	3422
LF03/FT09	Naphthalene	91-20-3	Soil	ug/kg	431.6	1500	685.5
LF03/FT09	Nickel	7440-02-0	Soil	ug/kg	22590	64300	30890

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF03/FT09	Phenanthrene	85-01-8	Soil	ug/kg	214.8	2200	412.5
LF03/FT09	Potassium	7440-09-7	Soil	ug/kg	9.80e+05	3.45e+06	1.44e+06
LF03/FT09	Pyrene	129-00-0	Soil	ug/kg	263.2	2400	475.9
LF03/FT09	Sodium	7440-23-5	Soil	ug/kg	6.04e+05	2.71e+06	1.01e+06
LF03/FT09	Thallium	7440-28-0	Soil	ug/kg	13130	29400	18290
LF03/FT09	Toluene	108-88-3	Soil	ug/kg	119	470	190.5
LF03/FT09	TPH	TPH	Soil	ug/kg	1.97e+05	4.90e+06	4.16e+05
LF03/FT09	Trichloroethene	79-01-6	Soil	ug/kg	34	160	60.94
LF03/FT09	Trichlorofluoromethane	75-69-4	Soil	ug/kg	121.5	540	206.7
LF03/FT09	Vanadium	7440-62-2	Soil	ug/kg	42890	1.55e+05	64870
LF03/FT09	Zinc	7440-66-6	Soil	ug/kg	47570	1.68e+05	70740
	Subsurface Soil						
LF03/FT09	Acenaphthene	83-32-9	Soil	ug/kg	14.17	60	32.64
LF03/FT09	Aluminum	7429-90-5	Soil	ug/kg	8.95e+06	2.41e+07	1.33e+07
LF03/FT09	Arsenic	7440-38-2	Soil	ug/kg	4088	8550	5886
LF03/FT09	Barium	7440-39-3	Soil	ug/kg	2.74e+05	1.31e+06	5.56e+05
LF03/FT09	Beryllium	7440-41-7	Soil	ug/kg	694.1	1220	951.4
LF03/FT09	Cadmium	7440-43-9	Soil	ug/kg	479.9	788	711.4
LF03/FT09	Calcium	7440-70-2	Soil	ug/kg	1.57e+07	6.54e+07	2.94e+07
LF03/FT09	Chromium	7440-47-3	Soil	ug/kg	21620	47800	29190
LF03/FT09	Cobalt	7440-48-4	Soil	ug/kg	11100	17300	13170
LF03/FT09	Copper	7440-50-8	Soil	ug/kg	33460	61400	42500
LF03/FT09	DDE, pp'	72-55-9	Soil	ug/kg	1	2	2
LF03/FT09	DDT, pp'	50-29-3	Soil	ug/kg	2	5	5
LF03/FT09	Iron	7439-89-6	Soil	ug/kg	1.79e+07	2.58e+07	2.06e+07
LF03/FT09	Kerosene	8008-20-6	Soil	ug/kg	2.51e+05	1.59e+06	5.81e+05
LF03/FT09	Lead	7439-92-1	Soil	ug/kg	7236	11800	8727
LF03/FT09	Magnesium	7439-95-4	Soil	ug/kg	5.82e+06	8.02e+06	6.78e+06
LF03/FT09	Manganese	7439-96-5	Soil	ug/kg	2.92e+05	4.25e+05	3.60e+05
LF03/FT09	Methylene chloride	75-09-2	Soil	ug/kg	777.5	2200	1596
LF03/FT09	Molybdenum	7439-98-7	Soil	ug/kg	1665	3990	2602
LF03/FT09	Nickel	7440-02-0	Soil	ug/kg	24650	44100	30640
LF03/FT09	Potassium	7440-09-7	Soil	ug/kg	1.22e+06	3.74e+06	1.92e+06
LF03/FT09	Sodium	7440-23-5	Soil	ug/kg	4.48e+05	6.50e+05	5.15e+05
LF03/FT09	Total dissolved solids	TDS	Soil	ug/kg	90.87	97.4	93.14
LF03/FT09	Total petroleum hydrocarbons	TPH	Soil	ug/kg	4.66e+05	1.50e+07	1.20e+06
LF03/FT09	Vanadium	7440-62-2	Soil	ug/kg	53800	1.42e+05	78640
LF03/FT09	Zinc	7440-66-6	Soil	ug/kg	46600	68200	58510
	Groundwater						
LF03-sp	1,1-Dichloroethane	75-34-3	Water	ug/L	33	33	33
LF03-sp	1,2-Dichlorobenzene	95-50-1	Water	ug/L	137	250	250
LF03-sp	1,4-Dichlorobenzene	106-46-7	Water	ug/L	166	250	250
LF03-sp	4-Methylphenol	106-44-5	Water	ug/L	6200	6200	6200
LF03-sp	Aluminum	7429-90-5	Water	ug/L	333	333	333
LF03-sp	Arsenic	7440-38-2	Water	ug/L	5.4	5.4	5.4
LF03-sp	Barium	7440-39-3	Water	ug/L	375	375	375

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF03-sp	Benzene	71-43-2	Water	ug/L	20	20	20
LF03-sp	Cadmium	7440-43-9	Water	ug/L	1.9	1.9	1.9
LF03-sp	Calcium	7440-70-2	Water	ug/L	5.84e+05	5.84e+05	5.84e+05
LF03-sp	Chloride	Chloride	Water	ug/L	99000	99000	99000
LF03-sp	Chromium	7440-47-3	Water	ug/L	20.7	20.7	20.7
LF03-sp	Copper	7440-50-8	Water	ug/L	20.2	20.2	20.2
LF03-sp	Dichlorodifluoromethane	75-71-8	Water	ug/L	650	650	650
LF03-sp	Ethylbenzene	100-41-4	Water	ug/L	38	38	38
LF03-sp	Iron	7439-89-6	Water	ug/L	5.45e+05	5.45e+05	5.45e+05
LF03-sp	Lead	7439-92-1	Water	ug/L	11	11	11
LF03-sp	M,p-xylene	MPXYLENES	Water	ug/L	44	44	44
LF03-sp	Magnesium	7439-95-4	Water	ug/L	49900	49900	49900
LF03-sp	Manganese	7439-96-5	Water	ug/L	7420	7420	7420
LF03-sp	Methylene chloride	75-09-2	Water	ug/L	250	250	250
LF03-sp	Nickel	7440-02-0	Water	ug/L	27.2	27.2	27.2
LF03-sp	o-Xylene	95-47-6	Water	ug/L	47	47	47
LF03-sp	Phenol	108-95-2	Water	ug/L	250	250	250
LF03-sp	Potassium	7440-09-7	Water	ug/L	46600	46600	46600
LF03-sp	Sodium	7440-23-5	Water	ug/L	91500	91500	91500
LF03-sp	Tetrachloroethylene (PCE)	127-18-4	Water	ug/L	53	53	53
LF03-sp	Toluene	108-88-3	Water	ug/L	460	460	460
LF03-sp	Total dissolved solids	TDS	Water	ug/L	4.60e+06	4.60e+06	4.60e+06
LF03-sp	Trichloroethene (TCE)	79-01-6	Water	ug/L	150	150	150
LF03-sp	Trichlorofluoromethane	75-69-4	Water	ug/L	13	13	13
LF03-sp	Vinyl chloride	75-01-4	Water	ug/L	17	17	17
LF03-sp	Zinc	7440-66-6	Water	ug/L	249	249	249
	Groundwater						
LF04	Arsenic	7440-38-2	Water	ug/L	120	120	120
LF04	Barium	7440-39-3	Water	ug/L	1227	1900	1900
LF04	Beryllium	7440-41-7	Water	ug/L	2.6	4.8	4.8
LF04	Calcium	7440-70-2	Water	ug/L	1.83e+05	2.40e+05	2.40e+05
LF04	Chloride	16887-00-6	Water	ug/L	16000	16000	16000
LF04	Chromium	7440-47-3	Water	ug/L	109	200	200
LF04	Cobalt	7440-48-4	Water	ug/L	69.33	120	120
LF04	Copper	7440-50-8	Water	ug/L	143.3	260	260
LF04	Fluoride	7782-41-4	Water	ug/L	1700	1700	1700
LF04	h-Chlorofluorobenzene	PPP-PP-P	Water	ug/L	9	9	9
LF04	Iron	7439-89-6	Water	ug/L	1.72e+05	2.70e+05	2.70e+05
LF04	Lead	7439-92-1	Water	ug/L	25	25	25
LF04	Magnesium	7439-95-4	Water	ug/L	96670	1.40e+05	1.40e+05
LF04	Manganese	7439-96-5	Water	ug/L	3800	5500	5500
LF04	Nickel	7440-02-0	Water	ug/L	186.7	330	330
LF04	p-Chlorofluorobenzene	QQQ-QQ-Q	Water	ug/L	8.8	8.8	8.8
LF04	Potassium	7440-09-7	Water	ug/L	11700	16000	16000
LF04	Sodium	7440-23-5	Water	ug/L	46330	67000	67000
LF04	Sulfate	12808-79-8	Water	ug/L	2700	2700	2700

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF04	Total dissolved solids	TDS	Water	ug/L	820	1000	1000
LF04	Vanadium	7440-62-2	Water	ug/L	141.7	350	350
LF04	Zinc	7440-66-6	Water	ug/L	276.7	510	510
	Surface Soil						
LF04	2-Methylnaphthalene	91-57-6	Soil	ug/kg	63.75	210	178.5
LF04	Barium	7440-39-3	Soil	ug/kg	4.09e+05	1.60e+06	7.89e+05
LF04	Beryllium	7440-41-7	Soil	ug/kg	306.2	1400	602.3
LF04	Bis(2-ethylhexyl)phthalate	117-81-7	Soil	ug/kg	36.25	70	62.72
LF04	Calcium	7440-70-2	Soil	ug/kg	7.31e+06	1.10e+07	8.74e+06
LF04	Chromium	7440-47-3	Soil	ug/kg	18880	23000	21240
LF04	Cobalt	7440-48-4	Soil	ug/kg	7250	9000	8109
LF04	Copper	7440-50-8	Soil	ug/kg	30120	44000	35540
LF04	Iron	7439-89-6	Soil	ug/kg	1.60e+07	1.80e+07	1.72e+07
LF04	Magnesium	7439-95-4	Soil	ug/kg	4.35e+06	5.60e+06	4.87e+06
LF04	Manganese	7439-96-5	Soil	ug/kg	3.06e+05	3.70e+05	3.30e+05
LF04	Nickel	7440-02-0	Soil	ug/kg	18250	26000	21040
LF04	Potassium	7440-09-7	Soil	ug/kg	1.79e+06	2.10e+06	1.95e+06
LF04	Sodium	7440-23-5	Soil	ug/kg	4.85e+05	5.80e+05	5.37e+05
LF04	TPH	TPH	Soil	ug/kg	59390	3.70e+05	92110
LF04	Vanadium	7440-62-2	Soil	ug/kg	35120	46000	39800
LF04	Zinc	7440-66-6	Soil	ug/kg	59880	1.00e+05	71850
	Subsurface Soil						
LF04	2,4-Dinitrotoluene	121-14-2	Soil	ug/kg	77.5	120	120
LF04	Bis(2-ethylhexyl)phthalate	117-81-7	Soil	ug/kg	46.43	190	72.36
LF04	Di-n-butylphthalate	84-74-2	Soil	ug/kg	503.1	6300	1127
LF04	n-Nitrosodiphenylamine	86-30-6	Soil	ug/kg	140	530	445.9
LF04	TPH	TPH	Soil	ug/kg	60970	5.14e+05	98420
	Groundwater						
LF06	Aluminum	7429-90-5	Water	ug/L	6075	9360	9360
LF06	Arsenic	7440-38-2	Water	ug/L	31.6	38.3	38.3
LF06	Barium	7440-39-3	Water	ug/L	285.2	384	372.1
LF06	Bis(2-ethylhexyl)phthalate	117-81-7	Water	ug/L	4	5	5
LF06	Cadmium	7440-43-9	Water	ug/L	0.625	1	0.9191
LF06	Calcium	7440-70-2	Water	ug/L	65420	73600	73600
LF06	Chloride	Chloride	Water	ug/L	2900	4700	4464
LF06	Chromium	7440-47-3	Water	ug/L	18	20.2	20.2
LF06	Copper	7440-50-8	Water	ug/L	59.65	82.1	82.1
LF06	Di-n-butylphthalate	84-74-2	Water	ug/L	2.5	5	4.538
LF06	Diethylphthalate	84-66-2	Water	ug/L	4.75	5	5
LF06	Ethylbenzene	100-41-4	Water	ug/L	0.875	2	1.757
LF06	Iron	7439-89-6	Water	ug/L	16650	21500	21280
LF06	Lead	7439-92-1	Water	ug/L	17.45	23.7	23.7
LF06	Magnesium	7439-95-4	Water	ug/L	16820	21200	21200
LF06	Manganese	7439-96-5	Water	ug/L	2018	2790	2655
LF06	Nickel	7440-02-0	Water	ug/L	30.9	31.8	31.8
LF06	Potassium	7440-09-7	Water	ug/L	5440	5440	5440

Table 9.1. (cont'd)

Source Area	Analyte Measured	CAS Number	Matrix Code	Units	Average Value	Maximum Value Detected	Reasonable Maximum Exposure
LF06	Sodium	7440-23-5	Water	ug/L	8875	9520	9520
LF06	Sulfate	Sulfate	Water	ug/L	11080	18000	17640
LF06	Total dissolved solids	TDS	Water	ug/L	2.50e+05	2.70e+05	2.70e+05
LF06	Vanadium	7440-62-2	Water	ug/L	22.92	30.1	30.1
LF06	Zinc	7440-66-6	Water	ug/L	68.62	84.6	84.6

Table 9.2a. Cancer Risks for Source Areas in OUs 3, 4, and 5

Hazard Quotient ≥ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
Operable Unit 3									
DP44	Ingestion	Soil	Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.135	<	--	--
			Anthracene	<	<	<	<	--	--
			Inorganic Sum	0.0185	0.0369	0.144	0.0185	--	--
	Inhalation	Soil	Chromium 6	0.108	0.108	0.157	0.108	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.117	0.117	0.17	0.117	--	--
	Ingestion	Groundwater	Manganese	9	13.9	25.2	<	--	--
			Trichloroethene	0.812	1.25	2.27	<	--	--
			Organic Sum	0.812	1.25	2.27	--	--	--
			Inorganic Sum	9	13.9	25.2	--	--	--
	Dermal	Groundwater	Manganese	0.184	0.19	0.257	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.184	0.19	0.257	--	--	--
WP45	Ingestion	Soil	Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.114	<	--	--
			Vanadium	<	<	<	<	--	--
			Anthracene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.016	0.0319	0.124	0.016	--	--
	Inhalation	Soil	Chromium 6	<	<	0.0696	<	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.0542	0.0542	0.0789	0.0542	--	--
	Ingestion	Groundwater	Manganese	4.69	7.25	13.2	<	--	--
			Vanadium	0.206	0.319	0.578	<	--	--
			Trichloroethene	0.23	0.355	0.644	<	--	--
			Organic Sum	0.23	0.355	0.644	--	--	--
			Inorganic Sum	4.9	7.57	13.7	--	--	--
	Dermal	Groundwater	Manganese	0.0959	0.0991	0.134	<	--	--
			Vanadium	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.127	0.131	0.177	--	--	--

Table 9.2a. (cont'd)

Hazard Quotient ≥ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
ST56	Ingestion	Groundwater	Arsenic	0.479	0.74	1.34	<	--	--
			Manganese	4.48	6.92	12.5	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Inorganic Sum	4.96	7.66	13.9	--	--	--
	Dermal	Groundwater	Arsenic	0.0568	0.0587	0.0795	<	--	--
			Manganese	0.0915	0.0945	0.128	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Inorganic Sum	0.148	0.153	0.208	--	--	--
SS57	Ingestion	Groundwater	Toluene	0.0929	0.143	0.26	<	--	--
			Organic Sum	0.0929	0.143	0.26	--	--	--
	Inhalation	Groundwater	Toluene	0.465	0.511	0.651	<	--	--
			Organic Sum	0.465	0.511	0.651	--	--	--
SS61	Ingestion	Soil	Arsenic	<	<	<	<	--	--
			Barium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	<	<	--	--
			Vanadium	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.0122	0.0244	0.0947	0.00663	--	--
	Inhalation	Soil	Chromium 6	0.101	0.101	0.147	0.0695	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.108	0.108	0.158	0.0742	--	--
SS61	Ingestion	Groundwater	Arsenic	2.65	4.09	7.42	<	--	--
			Barium	0.187	0.289	0.525	<	--	--
			Beryllium	<	<	<	<	--	--
			Cadmium	<	<	0.0603	<	--	--
			Chromium 6	0.11	0.169	0.307	<	--	--
			Manganese	17.3	26.6	48.3	<	--	--
			Vanadium	0.179	0.277	0.502	<	--	--
			Pentachlorophenol	<	<	<	<	--	--
			Gasoline	<	<	<	<	--	--
			Trichloroethene	0.262	0.405	0.735	<	--	--
			Organic Sum	0.288	0.445	0.808	--	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Inorganic Sum	20.4	31.5	57.2	--	--	--
	Dermal	Groundwater	Arsenic	0.314	0.324	0.439	<	--	--
			Barium	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Cadmium	<	<	<	<	--	--
			Chromium 6	0.074	0.0764	0.104	<	--	--
			Manganese	0.352	0.364	0.493	<	--	--
			Vanadium	<	<	<	<	--	--
			Pentachlorophenol	0.302	0.203	0.422	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Organic Sum	0.302	0.203	0.423	--	--	--
			Inorganic Sum	0.773	0.798	1.08	--	--	--
SS61-sp	Ingestion	Groundwater	Gasoline	0.0631	0.0974	0.177	<	--	--
			Trichloroethene	1.08	1.67	3.03	<	--	--
			Organic Sum	1.15	1.77	3.21	--	--	--
Operable Unit 4									
DP25	Ingestion	Groundwater	Arsenic	1.01	1.56	2.83	<	--	--
			Manganese	12.9	19.9	36.2	<	--	--
			Toluene	0.0592	0.0914	0.166	<	--	--
			Organic Sum	0.0592	0.0914	0.166	--	--	--
			Inorganic Sum	13.9	21.5	39	--	--	--
	Inhalation	Groundwater	Toluene	0.296	0.325	0.414	<	--	--
			Organic Sum	0.296	0.325	0.414	--	--	--
	Dermal	Groundwater	Arsenic	0.12	0.124	0.168	<	--	--
			Manganese	0.264	0.272	0.369	<	--	--
			Toluene	<	<	<	<	--	--
			Inorganic Sum	0.383	0.396	0.537	--	--	--
	Ingestion	Vegetables	Heptachlor epoxide	<	<	0.0672	<	--	--
			Dieldrin	<	<	<	<	--	--
			Toluene	<	<	<	<	--	--
			Organic Sum	--	--	0.0677	--	--	--
ST27	Ingestion	Groundwater	Arsenic	0.665	1.03	1.86	<	--	--
			Chromium 6	<	<	0.0767	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient ≥ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Copper	<	0.0771	0.14	<	--	--
			Manganese	11.4	17.5	31.8	<	--	--
			Inorganic Sum	12.1	18.7	33.9	--	--	--
	Dermal	Groundwater	Arsenic	0.0788	0.0814	0.11	<	--	--
			Chromium 6	<	<	<	<	--	--
			Copper	<	<	<	<	--	--
			Manganese	0.232	0.24	0.325	<	--	--
			Inorganic Sum	0.33	0.341	0.462	--	--	--
WP33	Ingestion	Groundwater	Arsenic	0.593	0.916	1.66	<	--	--
			Manganese	17.3	26.7	48.5	<	--	--
			Inorganic Sum	17.9	27.6	50.2	--	--	--
WP33	Dermal	Groundwater	Arsenic	0.0703	0.0726	0.0984	<	--	--
			Manganese	0.354	0.365	0.495	<	--	--
			Inorganic Sum	0.424	0.438	0.593	--	--	--
SS35	Ingestion	Soil	Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	0.0627	0.244	<	--	--
			Chlordane	<	<	<	<	--	--
			DDT	0.0572	0.114	0.444	<	--	--
			Heptachlor epoxide	<	<	<	<	--	--
			Aldrin	<	<	<	<	--	--
			Organic Sum	0.0582	0.116	0.451	0.00492	--	--
			Inorganic Sum	0.0323	0.0644	0.25	0.0139	--	--
	Inhalation	Soil	Chromium 6	0.081	0.081	0.118	0.0644	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.0974	0.0974	0.142	0.0713	--	--
	Dermal	Soil	Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.0529	<	--	--
			Chlordane	<	<	<	<	--	--
			DDT	0.356	0.499	0.964	<	--	--
			Heptachlor epoxide	<	<	<	<	--	--
			Aldrin	<	<	<	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Organic Sum	0.362	0.508	0.98	0.0306	--	--
			Inorganic Sum	0.0201	0.0282	0.0544	0.00867	--	--
	Ingestion	Vegetables	Beryllium	<	<	<	<	--	--
			Manganese	<	<	<	<	--	--
			Chlordane	<	<	<	<	--	--
			DDT	<	<	<	<	--	--
			Heptachlor epoxide	<	<	<	<	--	--
			Aldrin	<	<	<	<	--	--
			Organic Sum	--	--	0.0582	--	--	--
	Ingestion	Shellfish	Beryllium	<	<	<	<	--	--
			Manganese	<	<	<	<	--	--
			Chlordane	<	<	<	<	--	--
			DDT	<	<	<	<	--	--
			Heptachlor epoxide	<	<	<	<	--	--
			Aldrin	<	<	<	<	--	--
			Organic Sum	--	--	--	--	0.104	0.0814
SS36	Ingestion	Soil	Arsenic	<	<	0.122	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	0.0666	0.133	0.517	<	--	--
			Manganese	<	<	<	<	--	--
			DDT	<	<	<	<	--	--
			Inorganic Sum	0.0871	0.174	0.675	--	--	--
	Inhalation	Soil	Chromium 6	1.79	1.79	2.6	<	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	1.79	1.79	2.6	--	--	--
	Dermal	Soil	Arsenic	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	<	0.0581	0.112	<	--	--
			Manganese	<	<	<	<	--	--
			DDT	<	<	<	<	--	--
			Inorganic Sum	0.0542	0.076	0.147	--	--	--
	Ingestion	Groundwater	Manganese	8.61	13.3	24.1	<	--	--
			Inorganic Sum	8.61	13.3	24.1	--	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
SS36	Dermal	Groundwater	Manganese	0.176	0.182	0.246	<	--	--
			Inorganic Sum	0.176	0.182	0.246	--	--	--
			Organic Sum	--	--	--	--	0.104	0.0814
SS37	Ingestion	Groundwater	Arsenic	1.63	2.52	4.58	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	5.07	7.82	14.2	<	--	--
			Inorganic Sum	6.7	10.4	18.8	--	--	--
	Dermal	Groundwater	Arsenic	0.194	0.2	0.271	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	0.103	0.107	0.145	<	--	--
			Inorganic Sum	0.301	0.311	0.421	--	--	--
SS39/63	Ingestion	Soil	Arsenic	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.0863	<	--	--
			DDT	<	<	<	<	--	--
			Inorganic Sum	0.0181	0.0361	0.14	0.0118	--	--
	Inhalation	Soil	Chromium 6	0.111	0.111	0.162	0.111	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.117	0.117	0.17	0.117	--	--
	Ingestion	Groundwater	Manganese	5.2	8.03	14.6	<	--	--
			Inorganic Sum	5.2	8.03	14.6	--	--	--
	Dermal	Groundwater	Manganese	0.106	0.11	0.149	<	--	--
			Inorganic Sum	0.106	0.11	0.149	--	--	--
ST58	Ingestion	Groundwater	Gasoline	2.76	4.26	7.73	<	--	--
			Organic Sum	2.76	4.26	7.73	--	--	--
SS64	Ingestion	Groundwater	Arsenic	0.427	0.659	1.2	<	--	--
			Manganese	11.3	17.4	31.6	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	11.7	18.1	32.8	--	--	--
	Dermal	Groundwater	Arsenic	0.0506	0.0523	0.0708	<	--	--
			Manganese	0.231	0.238	0.323	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Tetrachloroethene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.281	0.29	0.393	--	--	--
Operable Unit 5									
LF02	Ingestion	Groundwater	Arsenic	8.41	13	23.6	<	--	--
			Chromium 6	<	0.0601	0.109	<	--	--
			Manganese	2.86	4.41	8	<	--	--
			Inorganic Sum	11.3	17.5	31.7	--	--	--
	Dermal	Groundwater	Arsenic	0.997	1.03	1.39	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	0.0583	0.0603	0.0816	<	--	--
			Inorganic Sum	1.08	1.12	1.51	--	--	--
LF03/FT09	Ingestion	Soil	Arsenic	<	<	<	<	--	--
			Barium	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.115	<	--	--
			1,1,1-Trichloroethane	<	<	<	<	--	--
			Kerosene	<	<	<	<	--	--
			1,1 Dichloroethylene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.0221	0.044	0.171	0.0218	--	--
LF03/FT09	Inhalation	Soil	Chromium 6	0.268	0.268	0.39	0.209	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.286	0.286	0.416	0.227	--	--
	Dermal	Soil	Arsenic	<	<	<	<	--	--
			Barium	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	<	<	--	--
			1,1,1-Trichloroethane	<	<	<	<	--	--
			Kerosene	<	<	0.0959	<	--	--
			1,1 Dichloroethylene	<	<	<	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Trichloroethene	<	<	<	<	--	--
			Organic Sum	0.0355	0.0497	0.0959	0.00245	--	--
	Ingestion	Groundwater	Arsenic	1.45	2.24	4.06	<	--	--
			Barium	0.0627	0.0969	0.176	<	--	--
			Chromium 6	<	0.0731	0.133	<	--	--
			Manganese	6.42	9.91	18	<	--	--
			1,1,1-Trichloroethane	<	<	<	<	--	--
			1,4-Dichlorobenzene	<	<	<	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Trichloroethene	<	0.0526	0.0954	<	--	--
			Organic Sum	0.0418	0.0645	0.117	--	--	--
			Inorganic Sum	7.98	12.3	22.3	--	--	--
	Dermal	Groundwater	Arsenic	0.172	0.178	0.241	<	--	--
			Barium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	0.131	0.135	0.183	<	--	--
			1,1,1-Trichloroethane	<	<	<	<	--	--
			1,4-Dichlorobenzene	<	<	<	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.336	0.347	0.47	--	--	--
	Ingestion	Vegetables	Beryllium	<	<	<	<	--	--
			Manganese	<	<	<	<	--	--
			1,1,1-Trichloroethane	<	<	<	<	--	--
			Kerosene	<	<	0.0688	<	--	--
			1,1 Dichloroethylene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Organic Sum	--	--	0.0695	--	--	--
LF03-sp	Ingestion	Groundwater	Arsenic	0.176	0.272	0.493	<	--	--
			Cadmium	<	0.0574	0.104	<	--	--
			Chromium 6	<	0.0625	0.113	<	--	--
			Manganese	14.5	22.4	40.7	<	--	--
			1,4-Dichlorobenzene	<	<	<	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient ≥ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Tetrachloroethene	0.0518	0.08	0.145	<	--	--
			Trichloroethene	0.245	0.378	0.685	<	--	--
			Organic Sum	0.299	0.462	0.839	--	--	--
			Inorganic Sum	14.8	22.8	41.4	--	--	--
	Dermal	Groundwater	Arsenic	<	<	<	<	--	--
			Cadmium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	0.297	0.306	0.415	<	--	--
			1,4-Dichlorobenzene	<	<	<	<	--	--
			Tetrachloroethene	<	<	<	<	--	--
			Trichloroethene	<	<	<	<	--	--
			Inorganic Sum	0.348	0.359	0.487	--	--	--
			Organic Sum	--	--	0.0695	--	--	--
LF04	Ingestion	Soil	Barium	<	<	<	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	<	<	0.1	<	--	--
			Nickel	<	<	<	<	--	--
			Vanadium	<	<	<	<	--	--
			Inorganic Sum	0.0171	0.0341	0.132	0.0171	--	--
	Inhalation	Soil	Chromium 6	0.111	0.111	0.162	0.111	--	--
			Manganese	<	<	<	<	--	--
			Inorganic Sum	0.12	0.12	0.175	0.12	--	--
	Ingestion	Groundwater	Arsenic	3.91	6.04	11	<	--	--
			Barium	0.265	0.41	0.744	<	--	--
			Beryllium	<	<	<	<	--	--
			Chromium 6	0.391	0.604	1.1	<	--	--
			Manganese	10.8	16.6	30.1	<	--	--
			Nickel	0.161	0.249	0.452	<	--	--
			Vanadium	0.38	0.587	1.07	<	--	--
			Inorganic Sum	15.9	24.5	44.5	--	--	--
	Dermal	Groundwater	Arsenic	0.464	0.479	0.649	<	--	--
			Barium	<	<	<	<	--	--

Table 9.2a. (cont'd)

Hazard Quotient @ 0.100 with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Beryllium	<	<	<	<	--	--
			Chromium 6	0.264	0.272	0.369	<	--	--
			Manganese	0.22	0.227	0.308	<	--	--
			Nickel	<	<	<	<	--	--
			Vanadium	0.0567	0.0586	0.0794	<	--	--
			Inorganic Sum	1.01	1.05	1.42	--	--	--
LF06	Ingestion	Groundwater	Arsenic	1.25	1.93	3.5	<	--	--
			Chromium 6	<	0.061	0.111	<	--	--
			Manganese	5.2	8.03	14.6	<	--	--
			Inorganic Sum	6.49	10	18.2	--	--	--
	Dermal	Groundwater	Arsenic	0.148	0.153	0.207	<	--	--
			Chromium 6	<	<	<	<	--	--
			Manganese	0.106	0.11	0.149	<	--	--
			Inorganic Sum	0.281	0.29	0.393	--	--	--

Note: the < symbol denotes values less than 0.1 with round-off.
the -- symbol means that the computation does not apply.
A "future typical resident" exposure is for 275 days per year and a "future resident" exposure is for 350 days per yea

Table 9.2b. Noncancer Health Effects for Source Areas in OUs 3, 4, and 5

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
Operable Unit 3									
DP44	Ingestion	Soil	Benzo(a)pyrene	9.18e-07	6.61e-07	8.58e-06	9.18e-07	<	<
			Benzo(b)fluoranthene	1.07e-05	7.71e-06	0.0001	1.07e-05	<	<
			Benzo(g,h,i)perylene	7.14e-07	5.14e-07	6.67e-06	7.14e-07	<	<
			Anthracene	<	<	3.66e-07	<	<	<
			Chrysene	<	<	1.00e-07	<	<	<
			Dibenz(a,h)anthracene	3.32e-06	2.39e-06	3.10e-05	3.32e-06	<	<
			Indeno(1,2,3-cd)pyrene	7.65e-07	5.51e-07	7.15e-06	7.65e-07	<	<
			Benz(a)anthracene	2.45e-06	1.76e-06	2.29e-05	2.45e-06	<	<
			Organic Sum	1.89e-05	1.36e-05	0.00018	1.89e-05	--	--
	Inhalation	Soil	Chromium 6	9.00e-07	3.25e-07	1.58e-06	9.00e-07	<	<
			Anthracene	<	<	<	<	<	<
			Inorganic Sum	9.00e-07	3.25e-07	1.58e-06	9.00e-07	--	--
	Dermal	Soil	Benzo(a)pyrene	5.73e-06	2.89e-06	1.85e-05	5.73e-06	<	<
			Benzo(b)fluoranthene	6.68e-05	3.37e-05	0.00022	6.68e-05	<	<
			Benzo(g,h,i)perylene	4.46e-06	2.25e-06	1.44e-05	4.46e-06	<	<
			Anthracene	2.45e-07	1.23e-07	7.91e-07	2.45e-07	<	<
			Chrysene	6.68e-08	<	2.16e-07	6.68e-08	<	<
			Dibenz(a,h)anthracene	2.07e-05	1.04e-05	6.69e-05	2.07e-05	<	<
			Indeno(1,2,3-cd)pyrene	4.77e-06	2.41e-06	1.54e-05	4.77e-06	<	<
			Benz(a)anthracene	1.53e-05	7.71e-06	4.94e-05	1.53e-05	<	<
			Organic Sum	0.00012	5.96e-05	0.00038	0.00012	--	--
	Ingestion	Groundwater	Benzene	<	<	7.19e-07	<	<	<
			Trichloroethene	1.91e-05	1.06e-05	6.41e-05	<	<	<
			Organic Sum	1.93e-05	1.07e-05	6.48e-05	--	--	--
	Inhalation	Groundwater	Benzene	2.15e-06	8.51e-07	3.60e-06	<	<	<
			Trichloroethene	0.0001	4.14e-05	0.00018	<	<	<
			Organic Sum	0.00011	4.22e-05	0.00018	--	--	--
	Ingestion	Vegetables	Benzo(a)pyrene	<	<	7.11e-07	<	<	<
			Benzo(b)fluoranthene	<	<	8.29e-06	<	<	<
			Benzo(g,h,i)perylene	<	<	2.77e-07	<	<	<
			Anthracene	<	<	2.60e-07	<	<	<
			Chrysene	<	<	<	<	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Dibenz(a,h)anthracene	<	<	4.68e-06	<	<	<
			Indeno(1,2,3-cd)pyrene	<	<	3.30e-07	<	<	<
			Benz(a)anthracene	<	<	3.50e-06	<	<	<
			Organic Sum	--	--	1.81e-05	--	--	--
WP45	Ingestion	Soil	Benzo(b)fluoranthene	<	<	7.25e-08	<	<	<
			Benzo(g,h,i)perylene	<	<	8.44e-08	<	<	<
			Anthracene	<	<	<	<	<	<
			Dibenz(a,h)anthracene	<	<	1.19e-07	<	<	<
			Indeno(1,2,3-cd)pyrene	<	<	6.72e-08	<	<	<
			Benz(a)anthracene	<	<	6.24e-08	<	<	<
			Benzo(a)pyrene	<	<	7.67e-08	<	<	<
			Trichloroethene	<	<	7.25e-08	<	<	<
			Organic Sum	6.10e-08	4.39e-08	5.70e-07	5.57e-08	--	--
	Inhalation	Soil	Trichloroethene	8.75e-08	<	1.53e-07	8.75e-08	<	<
			Organic Sum	8.75e-08	3.16e-08	1.53e-07	8.75e-08	--	--
	Inhalation	Soil	Chromium 6	4.00e-07	1.44e-07	6.99e-07	4.00e-07	<	<
			Anthracene	<	<	<	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Inorganic Sum	4.00e-07	1.44e-07	6.99e-07	4.00e-07	--	--
	Dermal	Soil	Benzo(b)fluoranthene	<	<	1.56e-07	<	<	<
			Benzo(g,h,i)perylene	5.63e-08	<	1.82e-07	5.63e-08	<	<
			Anthracene	<	<	<	<	<	<
WP45			Dibenz(a,h)anthracene	7.96e-08	<	2.57e-07	7.96e-08	<	<
			Indeno(1,2,3-cd)pyrene	<	<	1.45e-07	<	<	<
			Benz(a)anthracene	<	<	1.35e-07	<	<	<
			Benzo(a)pyrene	5.12e-08	<	1.66e-07	5.12e-08	<	<
			Trichloroethene	<	<	1.57e-07	<	<	<
			Organic Sum	3.80e-07	1.92e-07	1.23e-06	3.48e-07	--	--
	Ingestion	Groundwater	Trichloroethene	5.41e-06	3.01e-06	1.81e-05	<	<	<
			1,2 Dichloroethane	<	<	<	<	<	<
			Organic Sum	5.52e-06	3.07e-06	1.85e-05	--	--	--
	Inhalation	Groundwater	Trichloroethene	2.96e-05	1.17e-05	4.95e-05	<	<	<
			1,2 Dichloroethane	1.06e-06	<	1.77e-06	<	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Organic Sum	3.06e-05	1.21e-05	5.13e-05	--	--	--
	Ingestion	Vegetables	Benzo(b)fluoranthene	<	<	<	<	<	<
			Benzo(g.h.i)perylene	<	<	<	<	<	<
			Anthracene	<	<	<	<	<	<
			Dibenz(a.h)anthracene	<	<	<	<	<	<
			Indeno(1.2.3-cd)pyrene	<	<	<	<	<	<
			Benz(a)anthracene	<	<	<	<	<	<
			Benzo(a)pyrene	<	<	<	<	<	<
			Trichloroethene	<	<	8.07e-07	<	<	<
			Organic Sum	--	--	8.64e-07	--	--	--
ST56	Ingestion	Groundwater	Tetrachloroethene	2.50e-06	1.39e-06	8.40e-06	<	<	<
			Organic Sum	2.50e-06	1.39e-06	8.40e-06	--	--	--
	Inhalation	Groundwater	Tetrachloroethene	9.65e-07	<	1.61e-06	<	<	<
			Organic Sum	9.65e-07	3.82e-07	1.61e-06	--	--	--
SS57	Ingestion	Groundwater	1.2 Dichloroethane	1.68e-06	9.36e-07	5.64e-06	<	<	<
			Benzene	5.36e-05	2.98e-05	0.00018	<	<	<
			Organic Sum	5.53e-05	3.08e-05	0.00019	--	--	--
	Inhalation	Groundwater	1.2 Dichloroethane	1.69e-05	6.68e-06	2.82e-05	<	<	<
			Benzene	0.00054	0.00021	0.0009	<	<	<
			Organic Sum	0.00055	0.00022	0.00093	--	--	--
	Dermal	Groundwater	1.2 Dichloroethane	<	<	<	<	<	<
			Benzene	2.15e-06	5.20e-07	3.62e-06	<	<	<
			Organic Sum	2.16e-06	5.21e-07	3.63e-06	--	--	--
SS61	Inhalation	Soil	Arsenic	1.68e-07	6.08e-08	2.95e-07	7.10e-08	<	<
			Chromium 6	8.46e-07	3.05e-07	1.48e-06	5.81e-07	<	<
			Trichloroethene	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			Inorganic Sum	1.01e-06	3.66e-07	1.78e-06	6.52e-07	--	--
	Ingestion	Groundwater	Beryllium	2.70e-05	1.50e-05	9.06e-05	<	<	<
			Pentachlorophenol	1.05e-05	5.82e-06	3.51e-05	<	<	<
			Gasoline	2.17e-06	1.20e-06	7.26e-06	<	<	<
			Trichloroethene	6.18e-06	3.44e-06	2.07e-05	<	<	<
			Benzene	5.74e-07	<	1.92e-06	<	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Organic Sum	1.94e-05	1.08e-05	6.50e-05	--	--	--
			Inorganic Sum	2.70e-05	1.50e-05	9.06e-05	--	--	--
	Inhalation	Groundwater	Gasoline	2.17e-05	8.62e-06	3.64e-05	<	<	<
			Trichloroethene	3.38e-05	1.34e-05	5.65e-05	<	<	<
			Benzene	5.74e-06	2.27e-06	9.60e-06	<	<	<
			Organic Sum	6.12e-05	2.43e-05	0.0001	--	--	--
SS61	Dermal	Groundwater	Beryllium	9.39e-07	<	1.58e-06	<	<	<
			Pentachlorophenol	0.00039	9.38e-05	0.00065	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			Organic Sum	0.00039	9.39e-05	0.00065	--	--	--
			Inorganic Sum	9.39e-07	1.98e-07	1.58e-06	--	--	--
SS61-sp	Ingestion	Groundwater	Gasoline	7.65e-06	4.25e-06	2.57e-05	<	<	<
			Trichloroethene	2.55e-05	1.42e-05	8.55e-05	<	<	<
			Organic Sum	3.31e-05	1.84e-05	0.00011	--	--	--
	Inhalation	Groundwater	Gasoline	7.66e-05	3.04e-05	0.00013	<	<	<
			Trichloroethene	0.00014	5.52e-05	0.00023	<	<	<
			Organic Sum	0.00022	8.56e-05	0.00036	--	--	--
Operable Unit 4									
DP25	Ingestion	Soil	Aroclor 1254 (PCB)	1.15e-07	8.25e-08	1.07e-06	6.35e-08	<	<
			Heptachlor epoxide	5.08e-08	<	4.74e-07	<	<	<
			Dieldrin	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			Organic Sum	1.71e-07	1.23e-07	1.60e-06	6.97e-08	--	--
	Inhalation	Soil	Benzene	<	<	6.20e-08	<	<	<
			Organic Sum	3.54e-08	1.28e-08	6.20e-08	3.54e-08	--	--
	Dermal	Soil	Aroclor 1254 (PCB)	7.15e-07	3.61e-07	2.31e-06	3.96e-07	<	<
			Heptachlor epoxide	3.17e-07	1.60e-07	1.02e-06	<	<	<
			Dieldrin	<	<	9.63e-08	<	<	<
			Benzene	<	<	<	<	<	<
			Organic Sum	1.07e-06	5.38e-07	3.45e-06	4.35e-07	--	--
	Ingestion	Groundwater	Benzene	3.29e-05	1.83e-05	0.00011	<	<	<
			Organic Sum	3.29e-05	1.83e-05	0.00011	--	--	--

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
	Inhalation	Groundwater	Benzene	0.00033	0.00013	0.00055	<	<	<
			Organic Sum	0.00033	0.00013	0.00055	--	--	--
	Dermal	Groundwater	Benzene	1.32e-06	<	2.22e-06	<	<	<
			Organic Sum	1.32e-06	3.19e-07	2.22e-06	--	--	--
	Ingestion	Vegetables	Aroclor 1254 (PCB)	<	<	9.10e-08	<	<	<
			Heptachlor epoxide	<	<	3.40e-06	<	<	<
			Dieldrin	<	<	1.12e-07	<	<	<
			Benzene	<	<	1.22e-07	<	<	<
			Organic Sum	--	--	3.73e-06	--	--	--
SS35	Ingestion	Soil	Beryllium	3.10e-07	2.23e-07	2.89e-06	3.04e-07	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	<	<	1.26e-07	<	<	<
			Alpha-BHC	<	<	<	<	<	<
			DDD	3.15e-07	2.27e-07	2.95e-06	<	<	<
			DDE	1.36e-07	9.77e-08	1.27e-06	1.36e-07	<	<
			DDT	3.47e-06	2.50e-06	3.24e-05	2.47e-07	<	<
			Heptachlor epoxide	<	<	1.78e-07	<	<	<
			Aldrin	<	<	5.86e-08	<	<	<
			Organic Sum	3.96e-06	2.85e-06	3.70e-05	4.36e-07	--	--
			Inorganic Sum	3.10e-07	2.23e-07	2.89e-06	3.04e-07	--	--
SS35	Inhalation	Soil	Beryllium	<	<	<	<	<	<
			Chromium 6	6.77e-07	2.44e-07	1.19e-06	5.38e-07	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	<	<	<	<	<	<
			Alpha-BHC	<	<	<	<	<	<
			DDT	<	<	6.96e-08	<	<	<
			Heptachlor epoxide	<	<	<	<	<	<
			Aldrin	<	<	<	<	<	<
			Organic Sum	4.03e-08	1.45e-08	7.05e-08	3.24e-09	--	--
			Inorganic Sum	6.84e-07	2.47e-07	1.20e-06	5.45e-07	--	--
	Dermal	Soil	Beryllium	1.93e-07	9.74e-08	6.24e-07	1.89e-07	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	8.39e-08	<	2.71e-07	6.74e-08	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Alpha-BHC	<	<	8.30e-08	<	<	<
			DDD	1.97e-06	9.93e-07	6.36e-06	1.13e-07	<	<
			DDE	8.46e-07	4.27e-07	2.74e-06	8.46e-07	<	<
			DDT	2.16e-05	1.09e-05	7.00e-05	1.54e-06	<	<
			Heptachlor epoxide	1.19e-07	6.01e-08	3.85e-07	1.19e-07	<	<
			Aldrin	<	<	1.27e-07	<	<	<
			Organic Sum	2.47e-05	1.25e-05	8.00e-05	2.72e-06	--	--
			Inorganic Sum	1.93e-07	9.74e-08	6.24e-07	1.89e-07	--	--
	Ingestion	Groundwater	Beta-BHC	<	<	6.38e-07	<	<	<
			DDE	<	<	<	<	<	<
			DDT	<	<	<	<	<	<
			Benzene	<	<	5.36e-07	<	<	<
			1,2 Dichloroethane	<	<	9.98e-07	<	<	<
			Organic Sum	8.01e-07	4.45e-07	2.69e-06	--	--	--
	Inhalation	Groundwater	Benzene	1.60e-06	6.35e-07	2.68e-06	<	<	<
			1,2 Dichloroethane	2.98e-06	1.18e-06	4.98e-06	<	<	<
			Organic Sum	4.58e-06	1.81e-06	7.66e-06	--	--	--
	Dermal	Groundwater	Beta-BHC	<	<	<	<	<	<
			DDE	1.17e-06	<	1.96e-06	<	<	<
			DDT	<	<	7.48e-07	<	<	<
			Benzene	<	<	<	<	<	<
			1,2 Dichloroethane	<	<	<	<	<	<
			Organic Sum	1.62e-06	3.91e-07	2.72e-06	--	--	--
	Ingestion	Vegetables	Beryllium	<	<	<	<	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	<	<	5.72e-08	<	<	<
			Alpha-BHC	<	<	5.65e-08	<	<	<
			DDD	<	<	2.03e-07	<	<	<
			DDE	<	<	<	<	<	<
			DDT	<	<	2.26e-06	<	<	<
			Heptachlor epoxide	<	<	1.28e-06	<	<	<
			Aldrin	<	<	<	<	<	<
			Organic Sum	--	--	3.92e-06	--	--	--

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
SS35	Ingestion	Surfacewater	Beryllium	<	<	<	<	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	<	<	<	<	<	<
			Alpha-BHC	<	<	<	<	<	<
			DDD	<	<	<	<	<	<
			DDE	<	<	<	<	<	<
			DDT	<	<	<	<	<	<
			Heptachlor epoxide	<	<	<	<	<	<
			Aldrin	<	<	<	<	<	<
			Inorganic Sum	--	--	--	--	3.15e-06	2.50e-06
	Ingestion	Shellfish	Beryllium	<	<	<	<	<	<
			Beta-BHC	<	<	<	<	<	<
			Chlordane	<	<	<	<	<	<
			Alpha-BHC	<	<	<	<	<	<
			DDD	<	<	<	<	<	<
			DDE	<	<	<	<	<	<
			DDT	<	<	<	<	<	<
			Heptachlor epoxide	<	<	<	<	<	<
			Aldrin	<	<	<	<	<	<
			Organic Sum	--	--	--	--	7.69e-06	2.40e-05
			Inorganic Sum	--	--	--	--	7.71e-07	2.45e-06
SS36	Ingestion	Soil	Beryllium	4.21e-07	3.03e-07	3.93e-06	<	<	<
			DDT	<	<	5.33e-08	<	<	<
			Organic Sum	5.70e-09	4.10e-09	5.33e-08	--	--	--
			Inorganic Sum	4.21e-07	3.03e-07	3.93e-06	--	--	--
	Inhalation	Soil	Arsenic	7.69e-08	<	1.35e-07	<	<	<
			Beryllium	<	<	<	<	<	<
			Chromium 6	1.49e-05	5.38e-06	2.61e-05	<	<	<
			DDT	<	<	<	<	<	<
			Inorganic Sum	1.50e-05	5.41e-06	2.63e-05	--	--	--
	Dermal	Soil	Beryllium	2.62e-07	1.32e-07	8.49e-07	<	<	<
			DDT	<	<	1.15e-07	<	<	<
			Organic Sum	3.56e-08	1.80e-08	1.15e-07	--	--	--

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Inorganic Sum	2.62e-07	1.32e-07	8.49e-07	--	--	--
	Ingestion	Vegetables	Beryllium	<	<	5.04e-08	<	<	<
			DDT	<	<	<	<	<	<
			Inorganic Sum	--	--	5.04e-08	--	--	--
			Inorganic Sum	--	--	--	--	3.15e-06	2.50e-06
			Organic Sum	--	--	--	--	7.69e-06	2.40e-05
			Inorganic Sum	--	--	--	--	7.71e-07	2.45e-06
SS37	Ingestion	Soil	Benz(a)anthracene	<	<	1.00e-07	<	<	<
			Organic Sum	1.07e-08	7.71e-09	1.00e-07	--	--	--
	Dermal	Soil	Benz(a)anthracene	6.68e-08	<	2.16e-07	<	<	<
			Organic Sum	6.68e-08	3.37e-08	2.16e-07	--	--	--
SS39/63	Ingestion	Soil	Beryllium	4.36e-07	3.14e-07	4.07e-06	2.25e-07	<	<
			DDT	<	<	5.42e-08	<	<	<
			DDD	<	<	<	<	<	<
			Organic Sum	8.60e-09	6.19e-09	8.03e-08	2.66e-09	--	--
			Inorganic Sum	4.36e-07	3.14e-07	4.07e-06	2.25e-07	--	--
	Inhalation	Soil	Arsenic	1.07e-07	<	1.87e-07	<	<	<
			Beryllium	<	<	<	<	<	<
			Chromium 6	9.30e-07	3.35e-07	1.63e-06	9.30e-07	<	<
			DDT	<	<	<	<	<	<
			Inorganic Sum	1.05e-06	3.77e-07	1.83e-06	9.35e-07	--	--
SS39/63	Dermal	Soil	Beryllium	2.72e-07	1.37e-07	8.79e-07	1.41e-07	<	<
			DDT	<	<	1.17e-07	<	<	<
			DDD	<	<	5.65e-08	<	<	<
			Organic Sum	5.36e-08	2.71e-08	1.73e-07	1.66e-08	--	--
			Inorganic Sum	2.72e-07	1.37e-07	8.79e-07	1.41e-07	--	--
	Ingestion	Vegetables	Beryllium	<	<	5.22e-08	<	<	<
			DDT	<	<	<	<	<	<
			DDD	<	<	<	<	<	<
			Inorganic Sum	--	--	5.22e-08	--	--	--
ST58	Ingestion	Groundwater	Benzene	5.85e-06	3.25e-06	1.96e-05	<	<	<
			Gasoline	0.00034	0.00019	0.00112	<	<	<
			Organic Sum	0.00034	0.00019	0.00114	--	--	--

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
	Inhalation	Groundwater	Benzene	5.86e-05	2.32e-05	9.81e-05	<	<	<
			Gasoline	0.00335	0.00133	0.00561	<	<	<
			Organic Sum	0.00341	0.00135	0.00571	--	--	--
SS64	Ingestion	Groundwater	Tetrachloroethene	<	<	1.03e-06	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Organic Sum	4.12e-07	2.29e-07	1.38e-06	--	--	--
	Inhalation	Groundwater	Tetrachloroethene	<	<	<	<	<	<
			Trichloroethene	5.66e-07	<	9.48e-07	<	<	<
			Organic Sum	6.85e-07	2.71e-07	1.15e-06	--	--	--
Operable Unit 5									
LF03/FT09	Ingestion	Soil	Beryllium	3.07e-07	2.21e-07	2.86e-06	3.07e-07	<	<
			Benzo(g,h,i)perylene	<	<	1.72e-07	<	<	<
			Benzo(k)fluoranthene	<	<	<	<	<	<
			Benz(a)anthracene	<	<	1.69e-07	<	<	<
			Benzo(a)pyrene	<	<	1.77e-07	<	<	<
			Dibenz(a,h)anthracene	1.29e-07	9.29e-08	1.21e-06	1.29e-07	<	<
			Indeno(1,2,3-cd)pyrene	<	<	1.79e-07	<	<	<
			Benzo(b)fluoranthene	<	<	1.57e-07	<	<	<
			1,1,1-Trichloroethane	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			1,1 Dichloroethylene	<	<	<	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Organic Sum	2.28e-07	1.64e-07	2.13e-06	2.28e-07	--	--
			Inorganic Sum	3.07e-07	2.21e-07	2.86e-06	3.07e-07	--	--
	Inhalation	Soil	Benzene	5.10e-07	1.84e-07	8.92e-07	5.10e-07	<	<
			1,1 Dichloroethylene	0.00253	0.00091	0.00443	0.00253	<	<
			Trichloroethene	2.20e-07	7.94e-08	3.85e-07	2.20e-07	<	<
			Organic Sum	0.00253	0.00091	0.00443	0.00253	--	--
	Inhalation	Soil	Arsenic	1.71e-07	6.17e-08	2.99e-07	1.71e-07	<	<
			Beryllium	<	<	<	<	<	<
			Chromium 6	2.24e-06	8.07e-07	3.92e-06	1.74e-06	<	<
			Benzene	<	<	<	<	<	<
			1,1 Dichloroethylene	<	<	<	<	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Trichloroethene	<	<	<	<	<	<
			Inorganic Sum	2.43e-06	8.75e-07	4.24e-06	1.93e-06	--	--
	Dermal	Soil	Beryllium	1.91e-07	9.65e-08	6.18e-07	1.91e-07	<	<
			Benzo(g.h.i)perylene	1.15e-07	5.78e-08	3.71e-07	1.15e-07	<	<
			Benzo(k)fluoranthene	<	<	<	<	<	<
			Benz(a)anthracene	1.13e-07	5.70e-08	3.65e-07	1.13e-07	<	<
			Benzo(a)pyrene	1.18e-07	5.96e-08	3.82e-07	1.18e-07	<	<
			Dibenz(a.h)anthracene	8.05e-07	4.06e-07	2.60e-06	8.05e-07	<	<
			Indeno(1.2.3-cd)pyrene	1.19e-07	6.02e-08	3.86e-07	1.19e-07	<	<
			Benzo(b)fluoranthene	1.05e-07	5.30e-08	3.40e-07	1.05e-07	<	<
LF03/FT09			1.1.1-Trichloroethane	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			1.1 Dichloroethylene	<	<	1.02e-07	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Organic Sum	1.42e-06	7.18e-07	4.60e-06	1.42e-06	--	--
			Inorganic Sum	1.91e-07	9.65e-08	6.18e-07	1.91e-07	--	--
	Ingestion	Groundwater	1.1.1-Trichloroethane	<	<	7.84e-07	<	<	<
			1,4-Dichlorobenzene	1.99e-06	1.11e-06	6.68e-06	<	<	<
			Benzene	<	<	1.14e-06	<	<	<
			Tetrachloroethene	1.35e-06	7.52e-07	4.53e-06	<	<	<
			Trichloroethene	8.02e-07	<	2.69e-06	<	<	<
			Vinyl chloride	1.76e-05	9.77e-06	5.89e-05	<	<	<
			Organic Sum	2.23e-05	1.24e-05	7.47e-05	--	--	--
	Inhalation	Groundwater	Benzene	3.41e-06	1.35e-06	5.70e-06	<	<	<
			Tetrachloroethene	5.20e-07	<	8.70e-07	<	<	<
			Trichloroethene	4.36e-06	1.73e-06	7.30e-06	<	<	<
			Vinyl chloride	2.79e-05	1.11e-05	4.67e-05	<	<	<
			Organic Sum	3.62e-05	1.43e-05	6.06e-05	--	--	--
	Dermal	Groundwater	1.1.1-Trichloroethane	<	<	<	<	<	<
			1.4-Dichlorobenzene	3.93e-06	8.85e-07	6.60e-06	<	<	<
			Benzene	<	<	<	<	<	<
			Tetrachloroethene	<	<	<	<	<	<
			Trichloroethene	<	<	<	<	<	<

Table 9.2b. (cont'd)

Cancer Risk @ 1e-06 in Water @ 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			Vinyl chloride	<	<	<	<	<	<
			Organic Sum	4.04e-06	9.12e-07	6.78e-06	--	--	--
	Ingestion	Vegetables	Beryllium	<	<	<	<	<	<
			Benzo(g,h,i)perylene	<	<	<	<	<	<
			Benzo(k)fluoranthene	<	<	<	<	<	<
			Benz(a)anthracene	<	<	<	<	<	<
			Benzo(a)pyrene	<	<	<	<	<	<
			Dibenz(a,h)anthracene	<	<	1.82e-07	<	<	<
			Indeno(1,2,3-cd)pyrene	<	<	<	<	<	<
			Benzo(b)fluoranthene	<	<	<	<	<	<
			1,1,1-Trichloroethane	<	<	<	<	<	<
			Benzene	<	<	<	<	<	<
			1,1 Dichloroethylene	<	<	1.08e-06	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Organic Sum	--	--	1.38e-06	--	--	--
			Organic Sum	2.28e-07	1.64e-07	2.13e-06	2.28e-07	--	--
			Inorganic Sum	3.07e-07	2.21e-07	2.86e-06	3.07e-07	--	--
			Organic Sum	0.00253	0.00091	0.00443	0.00253	--	--
			Inorganic Sum	2.43e-06	8.75e-07	4.24e-06	1.93e-06	--	--
			Organic Sum	1.42e-06	7.18e-07	4.60e-06	1.42e-06	--	--
			Inorganic Sum	1.91e-07	9.65e-08	6.18e-07	1.91e-07	--	--
LF03-sp	Ingestion	Groundwater	Benzene	2.02e-06	1.13e-06	6.79e-06	<	<	<
			1,4-Dichlorobenzene	2.09e-05	1.16e-05	7.02e-05	<	<	<
			Tetrachloroethene	9.62e-06	5.35e-06	3.22e-05	<	<	<
			Trichloroethene	5.76e-06	3.20e-06	1.93e-05	<	<	<
			Vinyl chloride	0.00011	6.27e-05	0.00038	<	<	<
			Organic Sum	0.00015	8.40e-05	0.00051	--	--	--
	Inhalation	Groundwater	Benzene	2.03e-05	8.03e-06	3.39e-05	<	<	<
			Tetrachloroethene	3.70e-06	1.47e-06	6.20e-06	<	<	<
			Trichloroethene	3.15e-05	1.25e-05	5.27e-05	<	<	<
			Vinyl chloride	0.00018	7.06e-05	0.0003	<	<	<
			Organic Sum	0.00023	9.26e-05	0.00039	--	--	--
LF03-sp	Dermal	Groundwater	Benzene	<	<	<	<	<	<

Table 9.2b. (cont'd)

Cancer Risk ≥ 1e-06 in Water or 1e-07 in Soil with rounding				Future Worker	Future Typical Resident	Future Resident	Current Worker	Current Playing Child	Future Playing Child
			1,4-Dichlorobenzene	4.12e-05	9.30e-06	6.93e-05	<	<	<
			Tetrachloroethene	<	<	7.67e-07	<	<	<
			Trichloroethene	<	<	<	<	<	<
			Vinyl chloride	<	<	<	<	<	<
			Organic Sum	4.19e-05	9.46e-06	7.04e-05	--	--	--
			Organic Sum	--	--	1.38e-06	--	--	--
LF04	Ingestion	Soil	Beryllium	1.81e-07	1.30e-07	1.69e-06	1.81e-07	<	<
			Inorganic Sum	1.81e-07	1.30e-07	1.69e-06	1.81e-07	--	--
	Inhalation	Soil	Beryllium	<	<	<	<	<	<
			Chromium 6	9.29e-07	3.35e-07	1.63e-06	9.29e-07	<	<
			Inorganic Sum	9.34e-07	3.37e-07	1.63e-06	9.34e-07	--	--
	Dermal	Soil	Beryllium	1.13e-07	5.69e-08	3.65e-07	1.13e-07	<	<
			Inorganic Sum	1.13e-07	5.69e-08	3.65e-07	1.13e-07	--	--
	Ingestion	Groundwater	Beryllium	7.20e-05	4.00e-05	0.00024	<	<	<
			Inorganic Sum	7.20e-05	4.00e-05	0.00024	--	--	--
	Dermal	Groundwater	Beryllium	2.50e-06	5.28e-07	4.21e-06	<	<	<
			Inorganic Sum	2.50e-06	5.28e-07	4.21e-06	--	--	--

Note: the < symbol denotes values less than 1E-06 with round-off.
the -- symbol means that the computation does not apply.
A "future typical resident" exposure is for 275 days per year and a "future resident" exposure is for 350 days per yea

Table 9.3. Summary of Exposure Factors

Exposure Route	Scenario	Ave.Time (or 70(a) (yr)	Body Weight (kg)	Contact Rate	Frequency (day/yr)	Duration (yr)	Surface Area (cm²)	Intake Factors(b)	
								Cancer	Non-cancer
Soil/Dust Ingestion	Current Worker	25	70	50 mg/day	100	25	NA(b)	6.99×10^{-8}	1.96×10^{-7}
	Future Worker	25	70	50 mg/day	100	25		6.99×10^{-8}	1.96×10^{-7}
	Future Resident	30	15/70	200/100 mg/day	146	6/24		6.53×10^{-7}	1.52×10^{-6}
	Future Typ. Res.	9	70	100 mg/day	100	9		5.03×10^{-8}	3.91×10^{-7}
Sediment Ingestion	Current Recreation	3	17.6	200 mg/day	30	3	NA	4.00×10^{-8}	9.34×10^{-7}
	Future Recreation	12	22.6	200 mg/day	30	12		1.25×10^{-7}	7.27×10^{-7}
Groundwater Ingestion	Future Worker	25	70	1 L/day	250	25	NA	0.0035	0.0098
	Future Resident	30	70	2 L/day	350	30		0.0117	0.0274
	Future Typ. Res.	9	70	1.4 L/day	275	9		0.0019	0.0151
Surface-Water Ingestion	Current Recreation	3	17.6	0.5 L/day	60	3	NA	0.0002	0.0047
	Future Recreation	12	22.6	0.5 L/day	60	12		0.0006	0.0036
Vegetable Ingestion	Future Resident	30	70	17.7 g/day	60	30	NA	1.78×10^{-5}	4.16×10^{-5}
Fish Ingestion	Current Recreation	3	17.6	300 g/day	30	3	NA	6.00×10^{-5}	0.0014
	Future Recreation	12	22.6	300 g/day	30	12		1.87×10^{-4}	0.0011
Dermal Contact w/ Groundwater (bathing)	Future Worker	25	70	0.17 hr/day	250	25	20,000	0.119	0.0333
	Future Resident	30	15/70	0.17 hr/day	350	6/24	20,000	0.020	0.0466
	Future Typ. Res.	9	70	0.12 hr/day	275	9	20,000	0.0033	0.0258
Dermal Contact w/ Surface Water	Current Recreation	3	17.6	2.6 mg/cm²	30	3	2,750	0.0014	0.0334
	Future Recreation	12	22.6	2.6 mg/cm²	30	12	2,750	0.0045	0.0260
Dermal Contact w/ Soil	Current Worker	25	70	1 mg/cm²	100	25	3,120	4.36×10^{-6}	1.22×10^{-5}
	Future Worker	25	70	1 mg/cm²	100	25	3,120	4.36×10^{-6}	1.22×10^{-5}
	Future Resident	30	15/70	1 mg/cm²	146	30	5,000	1.41×10^{-5}	3.30×10^{-5}
	Future Typ. Res.	9	70	0.6 mg/cm²	146	9	5,000	2.20×10^{-6}	1.71×10^{-5}

Table 9.3. (contd)

Exposure Route	Scenario	Ave.Time (or 70[a]) (yr)	Body Weight (kg)	Contact Rate	Frequency (day/yr)	Duration (yr)	Surface Area (cm²)	Intake Factors[b]	
								Cancer	Non-cancer
Dermal Contact w/ Sediments	Current Recreation	3	17.6	1.5 mg/cm²	30	3	4,800	2.11×10^{5}	4.93×10^{4}
	Future Recreation	12	22.6	1.5 mg/cm²	30	12	4,800	6.58×10^{5}	3.84×10^{4}
Inhalation Daily[d] Contact w/ Groundwater Volatiles	Future Worker	25	70	20 m³/day	250	25	NA	0.0699	0.196
	Future Resident	30	70	20 m³/day	350	30		0.117	0.215
	Future Typ. Res.	9	70	20 m³/day	275	9		0.0277	0.274
Inhalation Contact w/ Soil Particles	Current Worker	25	70	20 m³/day	100	25	NA	0.028	0.0783
	Future Worker	25	70	20 m³/day	100	25		0.028	0.0783
	Future Resident	30	15/70	20 m³/day	146	30		0.049	0.114
	Future Typ. Res.	9	70	20 m³/day	146	9		0.0101	0.0783

Sources: EPA 1991b, this study.

(a) The value 70 is used to calculate the intake term for the 70-year cancer case; other values are used for the noncancer exposures.

(b) Intake factors multiplied times exposure point concentration terms yield dose for risk characterization. Units for intake factors are kg/kg·day (soils, sediments, soil particles, vegetables and fish), L/kg·day (groundwater and surface water), and m³/kg·day (volatile chemicals from the groundwater and surface water).

(c) NA = not applicable.

(d) The inhalation of groundwater volatiles is daily, not only for bathing or showering.

Note: A chemical-specific permeability factor is needed to calculate intake for dermal contact with surface water and groundwater.

Table 9.4a. Cancer and Noncancer Critical Toxicity Factors for Major Contaminants

Chemical	CAS No.	Cancer Risk Oral (kg-day/mg)	Cancer Risk Inhalation (kg-day/mg)	Noncancer Oral (mg/kg-day)	Noncancer Inhalation (mg/kg-day)
Volatile Organic Compounds					
Benzene	71-43-2	2.90E-02(a)	2.90E-02(a)		
1,4-Dichlorobenzene	106-46-7	2.4E-02(b)			2.3E-01(a)
1,2-Dichloroethane	107-06-2	9.10E-02(a)	9.10E-02(a)		2.86E-03(c)
Dichlorodifluoromethane	75-71-8			2.00E-01(a)	5.7E-02(a)
Tetrachloroethylene	127-18-4	5.2E-02(c)	2E-03(c)	1.00E-02(a) w(d)	
Toluene	108-88-3			2.00E-01(a)	1.14E-01(a)
Trichloroethene	79-01-6	1.10E-02(d)	6E-03(c)	6E-03(c)	
Vinyl chloride	75-01-4	1.90E+00(b)	3E-01(b)		
Xylenes (total)	1330-20-7			2.00E+00(a)	
Semivolatile Organic Compounds					
Benzo(b)fluoranthene	205-99-2	7.3E-01(c)	6.1E-01(c)		
Benzo(a)pyrene	50-32-8	7.30E+00(a)			
4-Methylphenol	106-44-5			5.0E-03(b)	
Pesticides					
Beta-BHC	319-85-7	1.80E+00(a)	1.80E+00(a)	3.00E-04(b)	
DDD	72-54-8	2.40E-01(a)			
DDT	50-29-3	3.40E-01(a)	3.40E-01(a)	5.00E-04(a)	
Inorganics					
Arsenic	7440-38-2	1.75E+00(b)	1.5E+01(a)	3.00E-04(a)	
Barium	7440-39-3			7.00E-02(a)	1.40E-04(b)
Chromium 6	7440-47-3		4.10E+01(a)	5.00E-03(a)	
Copper	7440-50-8			3.70E-02(b)	
Manganese	7439-96-5			5.00E-03(a)	1.40E-05(a)

NOTE: Spaces indicate that risk factors are not available.
In general, the risk numbers are listed with higher precision than is given in IRIS or HEAST.
Toxicity values without references were estimated from available values.
(a) EPA 1993c, 1993d, 1994b, 1995.
(b) HEAST (EPA 1994a, 1994b).
(c) EPA 1995a.
(d) Even though the toxicity factor has been withdrawn from IRIS, it has been used in the risk assessment per EPA Region X recommendation.

Table 9.4b. Cancer and Noncancer Toxicity Factors for Other Than Major Contaminants

Chemical (February 15, 1995)	CAS No.	EPA Weight of Evidence	Cancer Risk Oral (kg-day/mg)	Ref	Cancer Risk Inhalation (kg-day/mg)	Ref	Noncancer Oral (mg/kg-day)	Ref	Noncancer Inhalation (mg/kg-day)	Ref
1,1,1-Trichloroethane	71-55-6	D					Withdrawn		Under review	
1,1,2,2-Tetrachloroethane	79-34-5	C	2.00e-01		2.6e-02		Under review		Empty	
1,1,2-Trichloroethane	79-00-5	C	5.70e-02		5.7e-02		4.00e-03		Under review	
1,1-Dichloroethane	75-34-3	C	Inadequate		Inadequate		1.00e-01	(b)	Under review	
1,1-Dichloroethene	75-35-4	C	6.00e-01		1.2e+00		9.00e-03		Under review	
1,2-Dichloroethene (Total)	540-59-0						9.00e-03	(b)		
1,2-Dichloroethene, cis	156-59-2	D	Inadequate		Inadequate		Under Review		Unavailable	
1,2-Dichloroethene, trans	156-60-5		Empty		Empty		2.00e-02		Unavailable	
1,2-Dichloropropane	78-87-5	B2	6.80e-02	(b)	Empty		1.30e-02	(b)	4.00e-03	
2-Butanone	78-93-3	D	Inadequate		Inadequate		6.00e-01		1.00e+00	
2-Hexanone	591-78-6		Under review		Under review		Empty		Empty	
4-Methyl-2-pentanone	108-10-1		Empty		Empty		Withdrawn		Under review	
Acetone	67-64-1	D	Inadequate		Inadequate		1.00e-01		Empty	
Bromodichloromethane	75-27-4	B2	6.20e-02		Empty		2.00e-02		Empty	
Bromoform	75-25-2	B2	7.90e-03		3.9e-03		2.00e-02		Inadeq.	
Bromomethane	74-83-9	D	Inadequate		Inadequate		1.40e-03		5.00e-03	
Carbon Disulfide	75-15-0		Empty		Empty		1.00e-01		Under review	
Carbon Tetrachloride	56-23-5	B2	1.30e-01		5.3e-02		7.00e-04		Empty	
Chlorobenzene	108-90-7	D	Inadequate		Inadequate		2.00e-02		Under review	
Chloroform	67-66-3	B2	6.10e-03		8.1e-02		1.00e-02		Under review	
Chloromethane	74-87-3	C	1.30e-02	(b)	6.3e-03	(b)	Under review		Under review	
cis-1,2-Dichloroethene	156-59-2	D	Inadequate		Inadequate		1.00e-02	(b)	Empty	
cis-1,3-Dichloropropene	542-75-6	B2	Inadequate		Inadequate		3.00e-04		2.00e-02	
Dibromochloromethane	124-48-1	C	Inadequate		Empty		2.00e-02		Empty	
Ethylbenzene	100-41-4	D	Empty		Empty		1.00e-01		1.00e+00	
Methylene Chloride	75-09-2	B2	7.50e-03		1.6e-03		6.00e-02		Under review	
Styrene	100-42-5		U. Rev		U. Rev		2.00e-01		1.00e+00	
1,2,4-Trichlorobenzene	120-82-1	D	Empty				1.00e-02		Under review	
1,2-Dichlorobenzene	95-50-1						9.00e-02			
1,3-Dichlorobenzene	541-73-1	D	Empty				Under review		Empty	
2,4,5-Trichlorophenol	95-95-4		Under review				1.00e-01		Inadequate	
2,4,6-Trichlorophenol	88-06-2	B2	1.10e-02		1.0e-02		empty		Inadequate	
2,4-Dichlorophenol	120-83-2		Empty				3.00e-03		Empty	
2,4-Dimethylphenol	105-67-9		Empty				2.00e-02			
2,4-Dinitrophenol	51-28-5		Empty				2.00e-03		Inadequate	
2,4-Dinitrotoluene	121-14-2		Empty				2.00e-03		Inadequate	
2,6-Dinitrotoluene	606-20-2		Empty				1.00e-03	(b)	Empty	
2-Chloronaphthalene	91-57-8		Empty		Empty		8.00e-02		Empty	

Table 9.4b. (cont'd)

Chemical (February 15, 1995)	CAS No.	EPA Weight of Evidence	Cancer Risk				Noncancer			
			Oral (kg-day/mg)	Ref	Inhalation (kg-day/mg)	Ref	Oral (mg/kg-day)	Ref	Inhalation (mg/kg-day)	Ref
2-Chlorophenol	95-57-8		Empty				5.00e-03		Empty	
2-Methylphenol	95-48-7	C	Empty				5.00e-02		Inadequate	
2-Nitroaniline	88-74-4		Empty				Under review		Empty	
3,3'-Dichlorobenzidine	91-94-1	B2	4.50e-01				Empty		Inadequate	
4,6-Dinitro-2-methylphenol	534-52-1								Under Rev.	
4-Bromophenyl-phenylether	101-55-3						Inadequate		Inadequate	
4-Chloro-3-methylphenol	59-50-7						2.00e+00	(b)		
4-Chloroaniline	106-47-8		Empty				4.00e-03		Empty	
4-Nitroaniline	100-01-6						Inadequate		Inadequate	
4-Nitrophenol	100-02-7		Empty				Under review		Inadequate	
Acenaphthene	83-32-9	D	Under review				6.00e-02		Empty	
Anthracene	120-12-7	D	Inadequate				3.00e-01		Under review	
Benzo(a)anthracene	56-55-3	B2	7.3e-01	(b)			Empty		Under review	
Benzo(g,h,i)perylene	191-24-2	D	Empty		Empty		Empty		Empty	
Benzo(k)fluoranthene	207-08-9	B2	7.3e-02	(b)	Empty		Empty		Empty	
Benzoic Acid	65-85-0	D	Empty				4.00e+00		Empty	
Benzyl alcohol	100-51-6						3.00e-01	(b)		
bis(2-Chloroethoxy)methane	111-91-1	D	Inadequate				Empty		Empty	
bis(2-chloroisopropyl)ether	39638-32-9	C	7.00e-02	(b)	3.5e-02	(b)	4.00e-02	(b)	Empty	
Bis(2-Chloroethyl)ether	111-44-4	C			1.1e+00	(b)				
bis(2-ethylhexyl)phthalate	117-81-7	B2	1.40e-02		Empty		2.00e-02		Empty	
Butylbenzylphthalate	85-68-7	C	Inadequate				2.00e-01		Empty	
Chrysene	218-01-9	B2	7.3e-03	(b)			Inadequate		Empty	
Di-n-butylphthalate	84-74-2	D	Inadequate				1.00e-01		Inadequate	
Di-n-octylphthalate	117-84-0		Empty		Empty		2.00e-02	(b)	Empty	
Dibenz(a,h)anthracene	53-70-3	B2	7.3e+00	(b)	Empty		Empty		Empty	
Dibenzofuran	132-64-9	D	Empty				Inadequate		Under review	
Diethylphthalate	84-66-2	D	Empty				8.00e-01		Empty	
Dimethylphthalate	131-11-3						1.00e+01	(b)		
Fluoranthene	206-44-0	D	Inadequate				4.00e-02		Under review	
Fluorene	86-73-7	D	Empty				4.00e-02		Empty	
Hexachlorobenzene	118-74-1	B2	1.60e+00		1.6e+00		Under review		Inadequate	
Hexachlorobutadiene	87-68-3	C	7.80e-02		7.7e-02		Withdrawn		Empty	
Hexachlorocyclopentadiene	77-47-4	D	Empty				7.00e-03		Empty	
Hexachloroethane	67-72-1	C	1.40e-02		1.4e-02		1.00e-03		Under review	

Table 9.4b. (cont'd)

Chemical (February 15, 1995)	CAS No.	EPA Weight of Evidence	Cancer Risk				Noncancer			
			Oral (kg-day/mg)	Ref	Inhalation (kg-day/mg)	Ref	Oral (mg/kg-day)	Ref	Inhalation (mg/kg-day)	Ref
Indeno(1,2,3-cd)pyrene	193-39-5	B3	7.3e-01	(b)	Empty		Empty		Empty	
Isophorone	78-59-1	C	Empty				2.00e-01		Inadequate	
N-Nitroso-Di-n-propylamine	621-64-7	B3	7.00e+00				Empty		Empty	
N-Nitroso-Dimethylamine	62-75-9	B2	5.10e+01		5.1e+01		Empty		Under review	
N-Nitrosodiphenylamine	86-30-6	B2	4.90e-03		Empty		Empty		Empty	
Nitrobenzene	98-95-3	D	Empty				5.00e-04		Under review	
Pentachlorophenol	87-86-5	B2	1.20e-01		Empty		3.00e-02		Under review	
Phenanthrene	85-01-8	D	Inadequate				Empty		Under review	
Phenol	108-95-2	D	Empty		Empty		6.00e-01		Inadequate	
Pyrene	129-00-0	D	Inadequate				3.00e-02		Under review	
trans-1,2-Dichloroethene	156-60-5		Empty		Empty		2.00e-02		Empty	
trans-1,3-Dichloropropene	542-75-6	B2	Inadequate		Inadequate		3.00e-04		2.00e-02	
Vinyl Acetate	108-05-4		Under review		Under review		1.00e+00	(b)	2.00e-01	
4,4'-DDE	72-55-9	B2	3.40e-01		Empty		Empty		Empty	
Aldrin	309-00-2	B2	1.70e+01		1.7e+01		3.00e-05		Empty	
Alpha-BHC	319-84-6	B2	6.30e+00		6.3e+00		Empty		Empty	
Chlordane	57-74-9	B2	1.30e+00		1.3e+00		6.00e-05		Under review	
Delta-BHC	319-86-8	D	Empty		Empty		Empty		Empty	
Dieldrin	60-57-1	B2	1.60e+01		1.6e+01		5.00e-05		Empty	
Endosulfan I	115-29-7						6.00e-03		Empty	
Endrin	72-20-8	D					3.00e-04		Empty	
Gamma-BHC	319-89-9		Empty		Empty		3.00e-04		Under review	
Heptachlor	76-44-8	B2	4.50e+00		4.5e+00		5.00e-04		Empty	
Heptachlor Epoxide	1024-57-3	B2	9.10e+00		9.1e+00		1.30e-05		Empty	
Methoxychlor	72-43-5	D	Empty		Empty		5.00e-03		Inadequate	
PCB-1016 (Aroclor 1016)	12674-11-2		Empty		Empty		7.00e-05		Empty	
PCB-1221	1336-36-3	B2	7.70e+00		Empty					
PCB-1248 (Aroclor 1248)	12672-29-6		Empty		Empty		Inadequate		Empty	
PCB-1254 (Aroclor 1254)	11097-69-1		Empty		Empty		2.00e-05		Empty	
2,4,5-T	93-76-5		Empty		Empty		1.00e-02		Empty	
2,4,5-TP(Silvex)	93-72-1	D	Empty		Empty		8.00e-03		Empty	
2,4-D	94-75-7		Empty		Empty		1.00e-02		Empty	
2,4-DB	94-82-6		Empty		Empty		8.00e-03		Empty	

Table 9.4b. (cont'd)

Chemical (February 15, 1995)	CAS No.	EPA Weight of Evidence	Cancer Risk				Noncancer			
			Oral (kg-day/mg)	Ref	Inhalation (kg-day/mg)	Ref	Oral (mg/kg-day)	Ref	Inhalation (mg/kg-day)	Ref
Dalapon	75-99-0		Empty*		Empty		3.00e-02		Empty	
Dicamba	1918-00-9		Empty		Empty		3.00e-02		Empty	
Dichloroprop	120-36-5		Empty		Empty		Under review		Empty	
Dinoseb	88-85-7	D	Empty		Empty		1.00e-03		Empty	
MCPA	94-74-6		Empty		Empty		5.00e-04		Empty	
MCPP	93-65-2		Empty		Empty		1.00e-03		Empty	
Toxaphene	8001-35-2	B2	1.10e+00		1.1e+00		Empty		Empty	
Aluminum	7429-90-5		Empty		Empty		Under review		Empty	
Antimony	7440-36-0		Empty		Empty		4.00e-04		Empty	
Beryllium	7440-41-7	B2	4.30e+00		8.4e+00		5.00e-03		Empty	
Cadmium	7440-43-9	B1	Empty		6.3e+00		5.00e-04		Under review	
Cobalt	7440-48-4		Empty		Empty		Under review		Empty	
Lead	7439-92-1	B2	Inadequate		Inadequate		No threshold		Empty	
Mercury	7439-97-6	D	Inadequate		Inadequate		3.00e-04	(b)	Under review	
Nickel	7440-02-0		Not evaluated		Not evaluated		2.00e-02		Under review	
Selenium	7482-49-2	D	Inadequate,		Inadequate		5.00e-03		Empty	
Silver	7440-72-4	D	Inadequate,		Inadequate		5.00e-03		Empty	
Thallium (acetate)	563-68-8	D	Inadequate		Inadequate		9.00e-05		Empty	
Vanadium	7440-62-2		Empty		Empty		Under review		Empty	
Zinc	7440-66-6	D	Inadequate		Inadequate		3.00e-01		Empty	
Diesel (as Kerosene)	68334-30-5		Empty		Empty		2.00e-02		5.00e-03	
Gasoline	8006-61-9	C	1.70e-03		1.7e-03		2.00e-01		Empty	
JP-4	JP-4						8.00e-02			

Note: Unless referenced otherwise, the factors and information are from IRIS2, February 1995.

(a) HEAST 1994.

(b) EPA Region III Risk-Based Concentrations: R.L. Smith (01/31/05).

Note: * Empty is an IRIS term that suggests scientific data are lacking for determination of animal or human risk.

Table 9.5. Estimated Potential Reasonable Maximum Exposures in OU 3, 4, and 5 Source Areas at Eielson Air Force Base for Organic Chemical Contaminants and Lead

Source Area	Worker				Playing Child				Residential			
	Current Risks		Future Risks		Current Risks		Future Risks		Future Risks		Future Typical Risks	
	Cancer	HI*	Cancer	HI	Cancer	HI	Cancer	HI	Cancer	HI	Cancer	HI
Operable Unit 3												
DP44	1E-04	<	3E-04	0.8	<	<	<	<	8E-04	2.3	1E-04	1.3
WP45	<	<	4E-05	0.2	<	<	<	<	7E-05	0.6	2E-05	0.4
ST56	<	<	3E-06	<	<	<	<	<	1E-05	<	2E-06	<
SS57	<	<	6E-04	0.6	<	<	<	<	1E-03	1.0	3E-04	0.7
SS61	<	<	5E-04	1.0	<	<	<	<	8E-04	1.8	1E-04	1.1
Operable Unit 4												
DP25	5E-07	<	5E-04	0.4	<	<	<	<	8E-04	0.7	2E-04	0.4
ST27	<	<	<	<	<	<	<	<	<	<	<	<
WP33	<	<	<	<	<	<	<	<	<	<	<	<
SS35	3E-06	<	4E-05	0.4	<	<	5E-06	0.2	1E-04	1.5	2E-05	0.6
SS36	<	<	<	<	<	<	5E-06	0.2	<	<	<	<
SS37	<	<	<	<	<	<	<	<	<	<	<	<
SS39/63	<	<	<	<	<	<	<	<	<	<	<	<
ST58	<	<	4E-03	2.8	<	<	<	<	7E-03	7.7	2E-03	4.3
SS64	<	<	1E-06	<	<	<	<	<	3E-06	<	5E-07	<
Operable Unit 5												
LF02	<	<	<	<	<	<	<	<	<	<	<	<
LF03/FT09	3E-03	<	3E-03	0.1	<	<	<	<	5E-03	0.3	9E-04	0.1
LF04	<	<	<	<	<	<	<	<	<	<	<	<
LF06	<	<	<	<	<	<	<	<	<	<	<	<

HI* = Hazard Index. Note: Hazard Index (HI) is the sum of the noncancer effects.

Note: -"Future Typical Risks" are calculated the same as "Future Risks" except that the contact rate, frequency and duration of exposure, and intake factors are lower for the future typical resident.

Note: < means either that the cancer risk is less than 5E-7 or less than 0.1 for noncancer effects.

Table 9.6. Terrestrial Habitat Types and Their Primary Wildlife Species on Eielson AFB(a)

Habitat Type/Community Type	Area (acres)	Wildlife Species
Black spruce forest	8,678	Black bear, marten, moose, red squirrel, and spruce grouse
White spruce forest	1,457	Black bear, marten, red squirrel, and spruce grouse
Birch forest (dbh > 2", 15-65' tall	3,062	Black bear, raptors, red squirrel, and ruffed grouse
Birch (dbh 0-1", 8-15' tall)	81	Moose and snowshoe hare
Balsam poplar forest	1,286	Beaver, moose, raptors, and snowshoe hare
Willow shrub	517	Moose and snowshoe hare
Old burn (small white spruce, birch and willows)	295	Moose and snowshoe hare
Marsh (some ponded water)	131	Moose and waterfowl
Grassland/mown	Unquantified	Canada geese, hare, voles
12 lakes(b)	315	Beaver, moose, and waterfowl
50 ponds(b)	246	Beaver, moose, and waterfowl
Designated wetlands(c)	10,202	Beaver, moose, and waterfowl
Streams	25 miles	Beaver

(a) Table adapted from U.S. Air Force (1993f), except c.
(b) One lake and 6 ponds are natural; the remaining lakes and ponds are borrow pits (HLA 1990).
(c) Taken from HLA (1990).

Table 9.7. Actions Evaluated for Source Areas

Action	Source Evaluation Sites	Operable Unit 3 Source Areas	Operable Unit 4 Source Areas	Operable Unit 5 Source Areas
No further cleanup action /long-term Monitoring	LF01 WP32 DP55	none	ST27 WP33 SS36 SS37 SS39/SS63 SS64	LF02 LF04 LF06
Limited Action	none	WP45/SS57 ST56 SS61	none	none
Cleanup Required	none	DP44	DP25 SS35 ST58	LF03/FT09

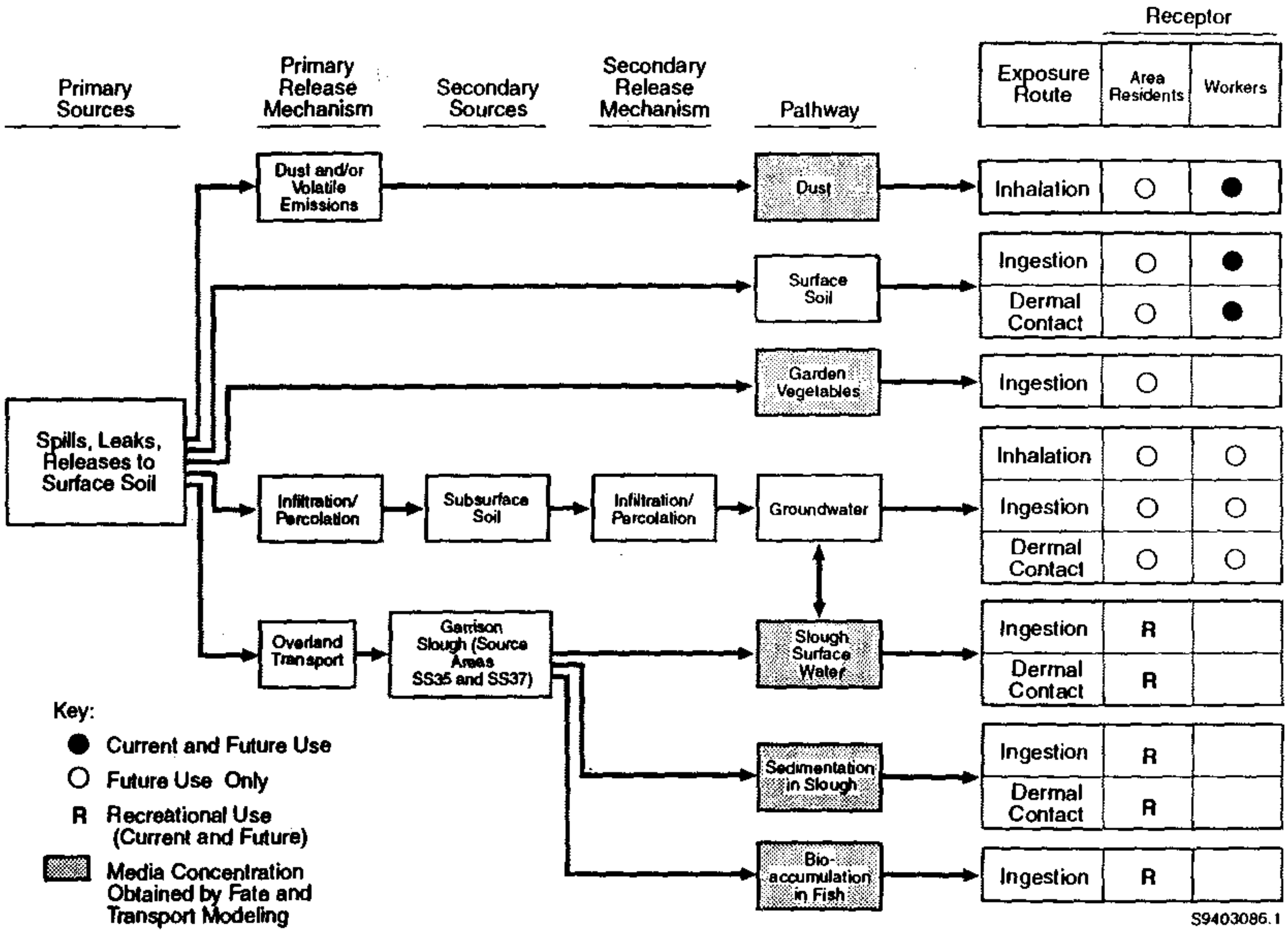


Figure 9.1. Conceptual Model of Pathways Common to all Source Areas

10.0 Description of Alternatives – OU 3

This section provides a concise description of the remedial action objectives and remedial alternatives evaluated for each source area in OU 3. The feasibility study (FS) provides information on the assumptions and calculations used in the development of the alternatives and the cost estimates for the alternatives.

10.1 Remedial Action Objectives

Remedial action objectives (RAOs) were developed to specify actions and contaminant levels necessary to protect human health and the environment. RAOs define the contaminants of concern, exposure routes and receptors, and remediation levels, which are defined as acceptable contaminant levels for each exposure route. The primary RAO is protection of groundwater.

The RAOs for the source areas within OU 3 are:

- At DP44, prevent the continued migration of TCE into the groundwater at concentrations that present a risk to potential future groundwater users.
- At WP45/SS57, prevent the continued migration of TCE and benzene into the groundwater at concentrations that present a risk to future groundwater users. Subsequent sampling indicates that little contamination remains in the unsaturated zone (see Section 16).
- At ST56, supply drinking water, apply wellhead treatment, as applicable, prevent use of groundwater that exceeds state or federal drinking water standards.
- At SS61, determine if an additional source of contaminants exists on the north side of the building and if so, prevent the continued migration of TCE into the groundwater at concentrations that present a risk to future groundwater users.
- At all source areas, prevent human exposure to groundwater contaminated above the drinking water standards and restore the beneficial uses of the aquifer.

The goal of the Superfund approach is to return usable groundwaters to their beneficial uses within a timeframe that is reasonable, given the particular circumstances of the site. Reasonable restoration time periods may range from very rapid (one to five years) to relatively extended (several decades). Location, proximity to population, anticipated future land use, and mobility of the contaminant plume are factors considered when determining an appropriate restoration timeframe.

The use of: (1) natural attenuation with institutional controls, (2) source reduction through treating soil contamination to prevent additional contaminant leaching into the groundwater, and (3) groundwater pumping and treating were considered viable options for addressing groundwater contamination at Eielson AFB. For source areas within OUs 3, 4, and 5, the following site specific conditions were considered when determining reasonable restoration timeframes:

- Contaminant plumes in this relatively homogeneous aquifer do not appear to be spreading or are decreasing in size.

- Biodegradation, dispersion, dilution, or adsorption appear to be effectively containing or reducing the size of the contaminant plume.

- Areas impacted by the contamination are relatively small with little likelihood of extended exposure to groundwater anticipated.

- Future land use as a military installation is not anticipated to change in the foreseeable future.

10.2 Remedial Action Components

The sources areas comprising OU 3 (DP44, WP45/SS57, ST56, and SS61) contain groundwater and soils contaminated with VOCs, SVOCs, and metals. Subsurface treatment of the groundwater at ST56 was not evaluated in the FS because of the complex hydrogeology of the fractured bedrock; the limited extent of the contamination in a remote, restricted area of the base; and the reliability of available institutional controls to restrict the use of the contaminated water. The alternatives to address the remaining source areas are assembled from one or more of the following remedial action components:

- No Action

Components to Address Groundwater Contamination

- Institutional Control and Groundwater Monitoring
- Groundwater Extraction and Treatment

Components to Address Soil Contamination

- Soil Vapor Extraction (SVE)/Bioventing
- Soil Excavation

The no action alternative does not address the RAOs established for each source area. It represents the baseline risk without institutional controls or active remediation. The institutional controls and groundwater monitoring alternative prevents the use of contaminated groundwater, but does not include active remediation. The other components provide a range of control with varying timeframes to achieve the RAOs. Because it is difficult to remove all of the residual contamination and to reduce groundwater contaminant concentrations below state and federal water quality standards, even with groundwater extraction and treatment, it is expected that all of the alternatives would require long-term management of the area.

The five remedial action components are described in the following paragraphs. Following this discussion, the components are assembled into remedial action alternatives for each of the source areas. Cost for the alternative for each source area is included in Table 10.1.

10.2.1 No Action

Under this approach, no action is taken to remove contaminants from the soils or the groundwater. Evaluation of the no action approach is required by the NCP to provide a baseline against which other alternatives can be compared. Under the no action alternative, no remedial measures are implemented

Table 10.1. Costs of Remedial Alternatives for Source Areas In OU 3

Source Area	Alternative Description	Costs		
		Capital	30-yr O&M	Total
DP44	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$5,300	$134,700	$140,000
	Soil Vapor Extraction/Groundwater Monitoring/Institutional Controls	$1,300,000	$300,000	$1,600,000
	Soil Vapor Extraction/Groundwater Extraction and Treatment/ Institutional Controls	$2,100,000	$1,500,000	$3,600,000
WP45/SS57	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$5,300	$174,700	$180,000
	Soil Vapor Extraction/Bioventing Groundwater Monitoring/Institutional Controls	$660,000	$540,000	$1,200,000
	Bioventing/Excavation/Groundwater Monitoring/Institutional Controls	$11,000,000	$0	$11,000,000
	Soil Vapor Extraction/Bioventing Groundwater Extraction/Institutional Controls	$1,900,000	$3,700,000	$5,600,000
	Bioventing/Excavation/Groundwater Extraction/Institutional Controls	$12,000,000	$4,000,000	$16,000,000
SS61	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$5,300	$154,700	$160,000
	Soil Excavation/Groundwater Monitoring/Institutional Controls	$540,000	$160,000	$700,000
	Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls	$1,300,000	$1,800,000	$3,100,000

with no long-term review, monitoring, or controls. Contaminants would degrade and disperse through natural attenuation. No direct costs are associated with the no action alternative.

10.2.2 Institutional Controls and Groundwater Monitoring

Institutional controls are used to prevent current and future human exposure to contamination remaining at the source areas at concentrations above health-based risk levels and federal and state standards. Specific controls include restrictions limiting access to the source areas and administrative controls to limit groundwater and future land use. Access restrictions, including such measures as permanent markers, are used to prevent direct human exposure to contaminants. Groundwater restrictions are implemented by placing written notification in base policies prohibiting the use of contaminated groundwater. In addition, all existing and any new wells located in or near the contaminated portion of the aquifer shall be locked to prevent unauthorized use.

The administrative controls for limiting future land use include placing written notification of these remedial actions in the base land use master plan. The notification shall prohibit any activity that disrupts aspects of the engineered controls. A copy of the notification is provided to any prospective transferees of the property and is included in any transfer documents, including deeds, in the event that the Air Force released control of the affected property. The Air Force shall provide EPA and the state with written verification that notification(s) have been implemented.

10.2.3 Groundwater Extraction and Treatment

Groundwater extraction was evaluated for source areas DP44, WP45/SS57, and SS61 as a way to potentially accelerate aquifer restoration. The number and location of extraction wells, as well as estimated times to achieve cleanup, are discussed in Sections 10.3, 10.4, and 10.5.

VOCs and SVOCs in the extracted groundwater would be removed using physical/chemical treatment, such as air stripping and activated carbon. Due to the high metals levels naturally found in the groundwater at Eielson AFB, metals removal may be necessary prior to treating the water for site-specific contamination. The need for air emission controls would be evaluated and implemented in accordance with the Clean Air Act (42 USC 7401). Treated groundwater would be discharged to Garrison Slough in accordance with federal ambient water quality criteria, 18 AAC 70, and 18 AAC 72.

10.2.4 Soil Vapor Extraction/Bioventing

A combination of SVE and/or bioventing was evaluated for source areas DP44 and WP45/SS57. This alternative enhances bioremediation and volatilization of contamination in the vadose zone for SVE/bioventing and in the smear zone for bioventing. For WP45/SS57, the system could be operated in the air injection or air withdrawal mode with wells screened across the water table. Although air emission controls would be installed in accordance with the Clean Air Act, if needed, the system would be designed and operated to minimize the need for air emission controls.

Based on assumed contaminant concentrations and expected removal rates, it is estimated the SVE system would operate from 1 to 3 years (6 months/year) to meet soil RAOs for TCE and related compounds in the vadose zone. SVE may be enhanced with air injection or capping. For bioventing, estimates of treatment times are provided in specific alternatives incorporating this component.

10.2.5 Soil Excavation

Excavation of contaminated soil from source areas WP45/SS57 and SS61 and out-of-state disposal was evaluated. Soil excavation would be conducted during one summer construction season. Contaminated soils would be removed from the ground surface to the top of the saturated zone. Using a field screening technique, clean soils would be segregated from contaminated soils. The excavated area would then be backfilled with clean material.

10.3 Source Area DP44

Site conditions of source area DP44 followed by the remedial action alternatives are discussed in this section.

10.3.1 Site Conditions

The primary concern at source area DP44 is TCE in the groundwater. However, tetrachloroethylene, benzene, and cis-1,2-DCE (a TCE breakdown product) were also found in the groundwater. In addition, TCE was found in the subsurface soil along the edge of and beneath the tarmac south of the Hangar (Building 1140).

The primary potential exposure pathway for source area DP44 is from the future unrestricted use of contaminated groundwater. Therefore, contaminants in groundwater and the risk from continued leaching of contaminants to groundwater are of primary concern.

10.3.2 Remedial Alternatives

Four alternatives have been developed to address the contaminated soil and groundwater at source area DP44. The four alternatives are listed in Table 10.2.

A description has been developed for each of the four alternatives identified for source area DP44. The descriptions identify the technologies, describe the representative process options, and present the assumptions that provide the basis for the analyses of the alternatives.

Table 10.2. Primary Components in Alternatives for Source Area DP44

Alternative	Soils Components	Groundwater Components
1. No Action	None	None
2. Institutional Controls /Monitoring	None	Natural attenuation, groundwater monitoring, institutional controls
3. SVE	SVE with carbon adsorption, optional extension of cap	Natural attenuation, groundwater monitoring, institutional controls
4. SVE/Extraction of Groundwater	SVE, optional extension of cap	High-rate extraction, metals precipitation, air stripping, discharge to Garrison Slough, institutional controls, groundwater monitoring

Alternative 1 – No Action

The no action alternative was evaluated as discussed in Section 10.2.1.

Alternative 2 – Institutional Controls/Groundwater Monitoring

This alternative is a limited action alternative consisting of two components.

Based on currently observed concentrations in the soil and groundwater, it was estimated that TCE may continue to leach into groundwater for more than 10 years. Trichloroethane-contaminated soils could continue to act as a contaminant source to groundwater, especially during periods of snow melt.

Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because of this continuing source of release and the probability that groundwater concentrations will remain above federal and state standards for an extended period of time, a long-term groundwater monitoring program and institutional controls are included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 3 – SVE

The SVE alternative includes the following remedial action components.

Under this alternative, SVE would be used to reduce the concentrations of TCE in the subsurface soils along the edge of the runway on the southeast side of Hanger 1140. This area is the suspected source of the TCE contamination found in groundwater at nearby Well 44M04. It is assumed that approximately six vertical extraction wells on a 18.3-m (60-ft) spacing would be installed to remove contaminated soil vapor from the assumed 76- to 84-m (250- by 275-ft) target area.

Seven passive air injection wells were assumed to be installed below the surface of the existing tarmac to provide improved air flow through the vadose zone, and to prevent short-circuiting from the southern edge of the target area. Due to the relatively short distance from the surface to the contaminated vadose zone, and the narrow zone of contamination, a portion of the unpaved target area would be capped as part of the operation.

The groundwater would not be actively remediated. The contaminants would be allowed to disperse and degrade naturally. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. If a significant volume of TCE is remaining in the vadose zone, the natural attenuation of the TCE in groundwater would benefit from the remedial activities designed to address the contaminant source.

The TCE in the vadose zone would be removed through SVE, and the chlorinated VOCs in groundwater would be allowed to attenuate through natural processes. The continuing source from the vadose zone soil will be treated by SVE in 1 to 3 years. Because it is probable that groundwater concentrations will remain above federal and state standards for an extended period of time, a long-term groundwater monitoring program and institutional controls was included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 4 – SVE/Extract

The SVE/Extract alternative includes the following remedial action components:

SVE. Soil vapor extraction (SVE) would be implemented as discussed in Alternative 3.

Groundwater Extraction and Treatment. These actions would be implemented in an attempt to accelerate aquifer restoration. A single groundwater extraction well would be operated at 30 gpm to increase the speed of aquifer restoration. Extracted groundwater will be treated as discussed in Section 10.2.3.

Based on modeling projections, the groundwater extraction and treatment system proposed under this alternative would need to operate for at least 10 years. Year-round operation is assumed.

The TCE in the vadose zone would be removed through SVE, and the chlorinated VOCs in groundwater would be reduced through extraction.

The continuing source from the vadose zone soil will be treated by SVE in 1 to 3 years. Because it is probable that groundwater concentrations will remain above federal and state standards for an extended period, a groundwater monitoring program and institutional controls was included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2 and Alternative 3, to restrict groundwater use, prevent human exposure to contaminants at concentrations above federal and state standards, and maintain an accurate definition of the area of contamination.

10.4 Source Area WP45/SS57

10.4.1 Site Conditions

The primary concern at source area WP45/SS57 is the presence in groundwater of TCE and benzene above drinking water standards. However, a breakdown product of TCE, *cis*-1,2-DCE, and tetrachloroethylene (PCE) were also found in the groundwater. TCE was found in the subsurface soils at Well 45M08.

The primary potential exposure pathway for source area WP45/SS57 is from the future unrestricted use of contaminated groundwater. Therefore, contaminants in groundwater and the risk from continued leaching of contaminants to groundwater are of primary concern.

10.4.2 Remedial Alternatives

Six alternatives have been developed to address both the contaminated soil and groundwater at source area WP45/SS57. The six alternatives are listed in Table 10.3.

A description has been developed for each of the six alternatives identified for source areas WP45/SS57. The descriptions identify the technologies, describe the representative process options, and present assumptions that provide the basis for analyses of the alternatives.

Alternative 1 – No Action

The no action alternative is evaluated as discussed in Section 10.2.1.

Table 10.3. Primary Components in Alternatives for Source Areas WP45/SS57

Alternative	Soils Components	Groundwater Components
1. No action	None	None
2. Institutional Controls / Groundwater Monitoring	None	Natural attenuation, groundwater monitoring, institutional controls
3. In situ	SVE with carbon adsorption, bioventing	Natural attenuation, groundwater monitoring, institutional controls
4. Remove	Removal of TCE-contaminated soil, bioventing	Natural attenuation, groundwater monitoring, institutional controls
5. In situ/Extract	SVE with carbon adsorption, bioventing	Extraction, metals precipitation, air stripping, discharge to Garrison Slough, institutional controls, monitoring
6. Remove/Extract	Removal of TCE-contaminated soil with offsite disposal, bioventing	Extraction, metals precipitation, air stripping, discharge to Garrison Slough, institutional controls, monitoring

Alternative 2 – Institutional Controls and Groundwater Monitoring

This alternative is a limited action alternative. No action will be taken for subsurface soil. The primary components are briefly outlined in the following paragraphs.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above federal and state standards, and maintain an accurate definition of the area of contamination. Fire well C is located in the middle of the TCE plume, but only trace concentrations of DCE have been detected in the well. The well is connected to the potable water supply on base and a slight chance exists that it could introduce solvent contamination into the water supply. Institutional controls also apply to use of this well to prevent using the contaminated groundwater in a manner that would pose an unacceptable risk to human health and the environment.

Results of a recent Utah Water Research Laboratory (UWRL) study at WP45/SS57 concluded that the remaining source of TCE contamination is predicted to be exhausted in approximately 7 years. No evidence is present of residual dense non-aqueous phase liquid (DNAPL) and it also does not appear that any residual fuel material exists in the form of light non-aqueous phase liquid (LNAPL). The contamination is adsorbed and contained or is in a dissolved phase and not readily accessible for source removal or treatment. The data indicate that natural processes are expected to achieve remediation within the same relative timeframe as that predicted for active remediation.

Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because of the continuing source of release and because groundwater concentrations are currently above state and federal standards and are expected to remain at those levels for an extended period of time, a long-term groundwater monitoring program and institutional controls would be implemented under this alternative.

Alternative 3 – In Situ

The in situ alternative includes the following remedial action components:

SVE. SVE would attempt to reduce the concentrations of TCE in the subsurface soils, where accessible, in the area of the old maintenance shop off the northeast corner of the fire station. This area is the suspected source of the TCE contamination found in the wells downgradient from this area.

The extraction and treatment system is discussed in Section 10.2.4. It was assumed the SVE system would use five vertical extraction wells on an approximately 18.3-m (60-ft) spacing to remove contaminated soil vapor from the assumed 37- by 37-m (120- by 120-ft) target area. The area is currently planted in grass and would not be capped as part of the operation.

Based on assumed contaminant concentrations and expected contaminant removal rates, it is estimated the SVE system would have to operate in this area for 1 to 3 years (6 months per year) to meet the soil cleanup levels for TCE and related compounds in the vadose zone.

Bioventing. Bioventing would be used to treat any residual BTEX-contaminated soils beneath the fire station parking lot. This area is the suspected source of the benzene and toluene found in the wells downgradient from this area.

Conceptually, the bioventing system was assumed to include 20 vertical injection wells on approximately 15-m (50-ft) centers to provide oxygen to the assumed 61-m by 76-m (200- by 250-ft) contaminated zone to enhance in situ degradation. The air injection rate would be based on achieving an optimal number of pore-volume exchanges per week to stimulate microbial degradation of the BTEX compounds. No extraction wells would be used as part of the bioventing system, and no attempt would be made to capture the injected air for treatment. The system would operate year-round.

It was previously estimated the bioventing system would have to operate year-round in this area for 2 to 4 years to meet the soil cleanup levels for BTEX compounds. Based on recent UWRL findings, it appears that levels of BTEX are significantly lower than previously reported and that little residual BTEX contamination exists in the vadose zone.

As described in Section 10.2.4, the groundwater would not be actively remediated. The TCE and BTEX plumes in the shallow groundwater would continue to disperse and degrade naturally. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination.

Any residual continuing source from the vadose zone soil would be treated by SVE in an estimated 1 to 4 years and by bioventing in 2 to 4 years. Because it is probable that groundwater concentrations may remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls were included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented ,as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 4 – Remove

The remove alternative includes the following remedial action components:

Excavation of Soil. Under this alternative, approximately 2800 m^3 (3700 cu yd) of VOC-contaminated soil would be excavated from the TCE- and PCE-contaminated maintenance shop and other source locations at source area WP45/SS57 and transported for disposal out-of-state as hazardous waste. Excavation is expected to take one summer to complete. The excavation component is discussed in further detail in Section 10.2.5.

Bioventing. The BTEX-contaminated soils from beneath the fire station parking lot would be treated with bioventing as described Alternative 3.

Under this alternative, the groundwater would not be actively remediated. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. The TCE and PCE in the vadose zone would be removed through excavation and the BTEX in the vadose zone would be removed through bioventing. The chlorinated VOCs and BTEX in groundwater would be allowed to attenuate through natural processes.

The continuing source from the vadose zone soil would be removed in 1 year and, by bioventing, in 0 to 4 years. Because it is probable that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls were included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 5 – In Situ/Extract

The in situ/extract alternative includes the following remedial action components:

SVE. SVE would be implemented, as discussed in Alternative 3, to treat TCE-contaminated soils located near the old maintenance shop on the northeast corner of fire station (Building 1206).

Bioventing. Bioventing would be implemented, as discussed in Alternative 3, to treat BTEX-contaminated soils beneath the fire station parking lot.

Groundwater Extraction and Treatment. This component would be implemented to remove and treat VOC contaminated groundwater. The extraction network for this alternative is assumed to consist of two extraction wells with a combined extraction rate of approximately 60 gpm. Extracted groundwater will be treated as discussed in Section 10.2.3.

Based on modeling projections, the groundwater extraction and treatment system proposed under this alternative would need to operate for at least 30 years. Year-round operation is assumed. Institutional controls would be used to prevent exposure to groundwater until state and federal standards are achieved.

The TCE and PCE in the vadose zone would be removed through SVE and the BTEX in the vadose zone would be removed through bioventing. The chlorinated VOCs and BTEX in groundwater would be reduced through extraction.

The continuing source from the vadose zone soil will be treated by SVE in an estimated 1 to 4 years and by bioventing in 0 to 4 years. Because it is probable that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls was included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 6 – Remove/Extract

The remove/extract alternative includes the following remedial action components:

Excavation of Soil. Excavation of VOC-contaminated soil would be implemented as discussed for Alternative 4.

Bioventing. Bioventing would be implemented as discussed for Alternative 3.

Groundwater. The groundwater component is the same as described in Alternative 5.

The TCE and PCE in the vadose zone would be removed through excavation and the BTEX in the vadose zone would be removed through bioventing. The chlorinated VOCs and BTEX in groundwater would be reduced through extraction.

Based on a batch flush groundwater model, extraction of the TCE that is already in groundwater could take 34 to 68 years for a plume in a highly permeable aquifer. The continuing source from the vadose zone soil will be removed in 1 year and, by bioventing, in 0 to 4 years. Because it is probable that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls was included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

10.5 Source Area SS61

10.5.1 Site Conditions

The primary concern at source area SS61 is TCE in the groundwater. However, a breakdown product of TCE, cis-1,2-DCE, was also found in the groundwater, and low-level TCE contamination was found in the subsurface soil adjacent to the old dry well at the Vehicle Maintenance Building (Building 3213). This dry well, along with surrounding soils, was removed during construction of the new building.

The primary potential exposure pathway for source area SS61 is from the future unrestricted use of contaminated groundwater. Therefore, contaminants in groundwater and the risk from continued leaching of contaminants to groundwater are of primary concern. The groundwater contamination is currently limited to the area directly beneath the building.

10.5.2 Remedial Alternatives

Based on the remedial action objectives, a range of remedial response actions has been developed to address residual contaminated soil, if any, and groundwater at source area SS61. The alternatives range from no action to removal for ex situ treatment and disposal. Four comprehensive alternatives have been developed and are listed in Table 10.4.

Table 10.4. Primary Components in Alternatives for Source Area SS61

Alternative	Soil Components	Groundwater Components
1. No action	None	None
2. Institutional Controls / Groundwater Monitoring	None	Natural attenuation, groundwater monitoring, institutional controls
3. Remove	Excavate contaminated soil for offsite treatment and disposal	Natural attenuation, groundwater monitoring, institutional controls
4. Extract	No action	Extraction, precipitation, air stripping, discharge to Garrison Slough, institutional controls, groundwater monitoring

A description has been developed for each of the four alternatives identified for source area SS61. The descriptions identify the technologies, describe the representative process options, and present the assumptions that provide the basis for the individual and comparative analyses.

Alternative 1-No Action

The no action alternative would be implemented as discussed in Section 10.2.1.

Alternative 2-Institutional Controls and Groundwater Monitoring

This alternative is a limited action alternative. It focuses on the following components.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above federal and state standards, and maintain an accurate definition of the area of contamination.

No evidence of residual dense non-aqueous phase liquid (DNAPL) is found at SS61. The contamination is adsorbed and contained or is in a dissolved phase and not readily accessible for source removal or treatment. The data indicate that natural processes are expected to achieve remediation within the same relative timeframe as those predicted for active remediation.

This alternative would achieve the RAOs for source area SS61. It does not appear that a continuing source of release is present in the vadose zone. However, if TCE-contaminated soils are present, they would continue to act as a contaminant source to groundwater. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because of the potential for a continuing source and the probability that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls would be implemented under this alternative

Alternative 3 – Remove

The remove alternative includes the following remedial action components:

Excavation. If a significant source of residual contamination could be located, up to 115 m^3 (150 cu yd) of contaminated soil would be excavated from the vadose zone on the north side of the building at source area SS61 and placed in roll-off bins. Close observation of the building foundation would occur during excavation. Pressure grouting may be necessary to facilitate the excavation. The excavation and offsite treatment through incineration of the contaminated soil at source area SS61 is expected to take one month to complete. Excavation is discussed in further detail in Section 10.2.5. This component may not be applicable unless it is shown that a source of TCE is present in soil on the north side of the building.

No action would be taken to treat groundwater. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. The natural dispersion of the TCE in groundwater may benefit from the remedial activities designed to address the contaminant source if any was found.

If a TCE source is located in the vadose zone soils on the north side of the building, it would be removed by excavation. The chlorinated VOCs in groundwater would be allowed to attenuate through natural processes.

If located, any continuing source from the soil could be removed in 1 year. Because it is probable that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls would be implemented under this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above federal and state standards, and maintain an accurate definition of the area of contamination.

Alternative 4 – Extract

In the extract alternative, only groundwater is treated; any residual contamination found in subsurface soil is not treated. This alternative includes the following components:

Groundwater Extraction and Treatment. Would be used to capture the contaminant plume. One extraction well would be installed at the downgradient edge of the plume, directly adjacent to the building to extract groundwater from beneath the building. Extracted groundwater will be treated as discussed in Section 10.2.3.

Based on modeling projections, the groundwater extraction and treatment system proposed under this alternative would need to operate for at least 8 years. Year-round operation is assumed. Institutional controls would be used to prevent exposure until state and federal standards are achieved.

Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. But, because it is probable that groundwater concentrations will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls would be implemented under this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 10.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above federal and state standards, and maintain an accurate definition of the area of contamination.

11.0 Description of Alternatives – OU 4

This section provides a concise description of the remedial action objectives and remedial alternatives for each source area in OU 4. The feasibility study provides information on the assumptions and calculations used in the development of the alternatives and the cost estimates for the alternatives.

11.1 Remedial Action Objectives

Remedial action objectives (RAOs) were developed to specify actions and contaminant levels necessary to protect human health and the environment. RAOs define the contaminants of concern, exposure routes and receptors, and remediation levels, which are defined as acceptable contaminant levels for each exposure route.

The specific RAOs for the source areas within OU 4 are as follows:

- At DP25, prevent the continued migration of contaminants (BTEX) into the groundwater from the floating product and smear zone.
- At ST58, prevent the continued migration of benzene into the groundwater at a concentration that presents an unacceptable risk to future groundwater users.
- At DP25 and ST58, prevent human exposure to groundwater contaminated above state and federal standards.
- At SS35, clarify the extent of DDT contamination in surface soil, prevent migration of DDT from the surface soils into Garrison Slough, and remove any drums, if practical, that may present a threat of future release of hazardous materials to the environment.

The goal of the Superfund approach is to return usable groundwaters to their beneficial uses within a timeframe that is reasonable, given the particular circumstances of the site. Reasonable restoration time periods may range from very rapid (one to five years) to relatively extended (several decades). Factors, such as location, proximity to population, anticipated future land use, and mobility of the contaminant plume are considered when determining an appropriate restoration timeframe.

The use of: (1) natural attenuation with institutional controls, (2) source reduction through treating soil contamination to prevent additional contaminant leaching into the groundwater, and (3) groundwater pumping and treating were considered viable options for addressing groundwater contamination at Eielson AFB. For source areas within OUs 3, 4, and 5, the following site specific conditions were considered when determining reasonable restoration timeframes:

- Contaminant plumes in this relatively homogeneous aquifer do not appear to be spreading or are decreasing in size.
- Biodegradation, dispersion, dilution, or adsorption appear to be effectively containing or reducing the size of the contaminant plume.

- Areas impacted by the contamination are relatively small with little likelihood anticipated of extended exposure to groundwater.

- Future land use as a military installation is not anticipated to change in the foreseeable future.

11.2 Remedial Action Components

Two source areas within OU 4 (DP25 and ST58) contain groundwater and soils contaminated with petroleum hydrocarbons. BTEX: lead and DDT have been found in surface soils only at SS35. The individual alternatives to address these three source areas are assembled from one or more of the following remedial action components:

- No Action

Components to Address Groundwater Contamination

- Institutional Controls and Groundwater Monitoring
- Groundwater Extraction and Treatment

Components to Address Soil Contamination

- Excavation/Removal
- Cover for Containment in Place
- Bioventing

The no action alternative does not address the RAOs established for each source area. It represents the baseline risk without institutional controls or active remediation. The institutional controls and groundwater monitoring alternative prevents the use of contaminated groundwater, but does not include active remediation. The other components provide a range of control with varying timeframes to achieve the RAOs. Because it is difficult to remove all of the residual contamination and to reduce groundwater contaminant concentrations below state and federal water quality standards, even with groundwater extraction and treatment, it is expected that all of the alternatives would require long-term management of the area.

The six remedial action components are described in the following paragraphs. Following this discussion, the components are assembled into remedial action alternatives for each of the source areas. Costs for the alternative for each source area is included in Table 11.1.

11.2.1 No Action

Under this approach, no action is taken to remove contaminants from the soils or the groundwater. It represents the baseline risk without institutional controls or active remediation. Evaluation of the no action approach is required by the NCP to provide a baseline against which other alternatives can be compared. Under the no action alternative, no remedial measures are implemented, including long-term review, monitoring, or controls. No direct costs are associated with the no action alternative.

Table 11.1. Costs of Remedial Alternatives for Source Areas in OU 4.

Source Area	Alternative Description	Costs		
		Capital	30-yr O&M	Total
DP25	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$5,300	$204,700	$210,000
	Limited Soil Excavation/Groundwater Monitoring/Institutional Controls	$3,800,000	$200,000	$4,000,000
	Groundwater Extraction and Treatment/ Groundwater Monitoring/Institutional Controls	$1,500,000	$4,000,000	$5,500,000
SS35	No Action	$0	$0	$0
	Institutional Controls	$0	$0	$0
	Soil Cover	$40,000	$0	$40,000
	Soil Excavation/Drum Removal (a) Onsite Disposal (b) Offsite Disposal (c) Offsite Disposal and Treatment	 $410,000 $490,000 $2,00,000	 $0 $0 $0	 $410,000 $490,000 $2,100,000
SS58	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$5,300	$134,700	$140,000
	Bioventing/Groundwater Monitoring/ Institutional Controls	$170,000	$180,000	$350,000
	Bioventing/Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls	$1,300,000	$1,500,000	$2,800,000

11.2.2 Institutional Controls and Groundwater Monitoring

Institutional controls are used to prevent current and future human exposure to contamination remaining at the source areas at concentrations above health-based risk levels and federal and state standards. Specific controls include restrictions limiting access to the source areas and administrative controls to limit groundwater and future land use. Access restrictions, including such measures as permanent markers are used to prevent direct human exposure to contaminants. Groundwater restrictions are implemented by placing written notification in base policies prohibiting the use of contaminated groundwater. In addition, all existing and any new wells located in or near the contaminated portion of the aquifer shall be locked to prevent unauthorized use.

The administrative controls for limiting future land use include placing written notification of these remedial actions in the base land use master plan. The notification shall prohibit any activity that disrupts aspects of the engineered controls. A copy of the notification is provided to any prospective transferees of the property and is included in any transfer documents, including deeds, in the event that the Air Force released control of the affected property. The Air Force shall provide EPA and the State with written verification that notification(s) have been implemented.

11.2.3 Groundwater Extraction and Treatment

Groundwater extraction was evaluated for source areas DP25 and SS58 as a way to potentially accelerate aquifer restoration. Groundwater extraction focuses on reduction of contaminant mass through removing the dissolved constituents in groundwater. It involves removing contaminated groundwater for aboveground physical/chemical treatment. The estimated number and location of extraction wells, as well as estimated timeframes to achieve cleanup, are discussed in Sections 11.3 and 11.5.

Due to the high metals levels naturally found in the groundwater at Eielson AFB, metals removal may be necessary prior to treating the water for site-specific contamination. Treatability studies are recommended to evaluate iron fouling problems and determine if the sludge generated by dissolved metals would be a hazardous waste. In addition, no proven method is known for removing lead from groundwater at a reasonable cost in a reasonable amount of time. However, a treatability test is being performed at another site at Eielson AFB to determine the fate and transport of lead and the most viable option for extraction and treatment, if warranted. Results from this test will be used to further evaluate lead remediation at ST58.

The need for air emission controls would be evaluated and implemented in accordance with the Clean Air Act (42 USC 7401). Treated groundwater would be discharged to surface water in accordance with federal ambient water quality criteria, and state 18 AAC 70, and 18 AAC 72.

11.2.4 Excavation/Removal

The excavation/removal component is a source control measure involving the excavation and removal of contaminated materials for offsite or onsite treatment or disposal. For source area DP25, contaminated soils would be excavated. For source area SS35, drums would be removed and contaminated soil would be excavated. Three disposal options, onsite, offsite, or offsite with treatment, were evaluated for disposal of contaminated material from SS35. The excavated area would then be backfilled with clean material.

11.2.5 Cover

The cover component was evaluated for SS35 and involves placement of a soil cover over the surface of the source area eliminating direct contact with surface contamination and runoff into nearby Garrison Slough. The type of cover material is dependent on the specific remedial action objectives for the source area.

11.2.6 Bioventing

Bioventing was evaluated for source area SS58. The bioventing component involves enhancing the destruction of fuel-derived organic constituents in soil by injecting air into the soil to sustain naturally occurring microorganisms that break down the fuel. The number of injection wells and estimates of treatment times are provided in Section 11.5.

11.3 Source Area DP25

11.3.1 Site Conditions

The primary concerns at source area DP25 are the presence of a layer of fuel-saturated soils at the water table, BTEX-contaminated soils in the smear zone, and BTEX compounds and lead in the groundwater. The primary potential exposure pathway for source area DP25 is from the future unrestricted use of contaminated groundwater. Therefore, contaminants in groundwater and the risk from continued leaching of contaminants to groundwater are of primary concern.

A source control program to identify and replace leaking tanks or pipes and line the berms will be implemented as part of the base tank program. This plan would include locating and repairing leaking tanks and piping, removing 0.3 to 0.6 m (1 to 2 ft) of gravel within the berms, installing an impermeable liner, and replacing the gravel. The alternatives developed for source area DP25 assume that no fuel continues to leak into the soil.

11.3.2 Remedial Alternatives

In accordance with NCP guidance, a range of potential remedial alternatives have been developed. The alternatives range from no action to removal for ex situ treatment and disposal. Four comprehensive alternatives have been developed to address the contaminated soil, floating fuel, and contaminated groundwater at source area DP25. The alternatives are summarized in Table 11.2.

Table 11.2. Primary Components in Alternatives for Source Area DP25

Alternative	Soils	Fuel	Groundwater
1. No action	None	None	None
2. Institutional Controls/ Groundwater Monitoring	None	None	Natural attenuation, groundwater monitoring, institutional controls
3. Limited Removal	Remove contaminated soils during berm liner installation, landfarming or composting	None	Natural attenuation, groundwater monitoring, institutional controls
4. Extract	None	Active skimming	High-rate groundwater extraction, treatment, discharge to surface water, institutional controls, and groundwater monitoring

The following subsections describe the remedial alternatives developed for source area DP25. The descriptions identify the technologies, describe the process options, and present the primary assumptions.

Alternative 1 - No Action

The no action alternative was evaluated as discussed in Section 11.2.1.

Alternative 2 – Institutional Controls and Groundwater Monitoring

This alternative is a limited action alternative consisting of the following components.

Under this alternative, floating fuel and BTEX-contaminated soils beneath the storage tanks would continue to act as a contaminant source to groundwater and the groundwater would not be actively remediated. Remediation time in this case is a function of natural processes in groundwater including sorption/desorption, biodegradation, and contaminant dispersion resulting from groundwater flow through the aquifer.

Based on currently observed concentrations in the soil and groundwater, it was estimated that BTEX constituents may continue to leach into groundwater. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively degrading the contamination and containing it within the bermed areas around the tanks. Because of this continuing source of release and the probability that groundwater concentrations will remain above federal and state standards for an extended period of time, a long-term groundwater monitoring program and institutional controls are included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 11.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 3 – Limited Removal

The limited removal alternative focuses on reducing the long-term source of contamination in soils at source area DP25 to the extent possible without interfering with the integrity of the tank berms. The removal alternative includes the following components.

It is assumed that approximately 21,000 m^3 (28,000 cu yd) of BTEX-contaminated soil would be excavated for treatment onsite using composting or landfarming. The excavated soil would include the top 30.5 cm (12 in.) of soil from the entire area within the berm, approximately 153 m^3 (200 cu yd) of BTEX-contaminated soil from the area of the fuel spill near monitoring well 53M01, and soils to the top of the water table at approximately 1.2 m (4 ft) bls from the areas where floating fuel has been identified. The excavation of soil from these areas could be completed in one construction season.

Because some of the source would be removed, RAOs may be achieved slightly faster under this alternative than without source control. The groundwater would not be actively remediated. The contaminants would be allowed to disperse and degrade naturally. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because some soil and smear zone contamination will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls are included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented as discussed in Section 11.2.2 to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 4 – Extract

The extract alternative focuses on reducing the contaminant mass in groundwater. It includes short-term active skimming of floating product in conjunction with high-rate extraction of groundwater with treatment. The three components of the extract alternative are briefly outlined as follows.

Active skimming and pumping of approximately seven dual-phase extraction wells would be used to address the floating fuel layer at source area DP25. The active skimming wells, equipped with groundwater extraction pumps and product skimmer pumps, would be installed within the bermed area as part of this alternative. During the active skimming phase of operation, the groundwater extraction rate would be optimized to enhance product recovery, while minimizing the chance of distributing the product over a larger area. The alternative assumes the system will operate year-round for 3 years and recover a small fraction of the product present (150,000 L [40,000 gal]). The recovered fuel would be sent to the power plant to be burned.

When no more fuel can be recovered through active skimming and to minimize the potential for any further distribution of residual undissolved contamination, full-scale groundwater extraction would be implemented. It is assumed that two extraction wells would be installed downgradient of the two areas with residual floating fuel and would be pumped at a rate to remove as much contaminated groundwater as possible. The combined extraction rate of both wells is estimated to be 80 gpm.

The extracted groundwater would be treated using an air stripper to remove the VOCs and using activated carbon to remove SVOCs from the extracted water as described in Section 11.2.3. The effluent from the treatment system would be discharged to Hardfill Lake. The need for air emission controls would be evaluated and implemented in accordance with the Clean Air Act (42 USC 7401). Treated groundwater would be discharged to surface water in accordance with federal ambient water quality criteria, and state 18 AAC 70, and 18 AAC 72.

Based on modeling projections, the high-rate groundwater extraction and treatment system proposed under this alternative would need to operate for more than 30 years after the active skimming operation has ceased. Year-round operation is assumed, although permafrost present in the area will affect yearly maintenance requirements.

The BTEX in the residual fuel and soils will continue to act as a source of contaminants to groundwater for an estimated 60 years. Removal of some of the contaminant mass through groundwater extraction may achieve the RAOs slightly faster. In addition, contaminants not treated would be allowed to disperse and degrade naturally. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because the continuing source of contamination will remain above state and federal standards for an extended period of time, a long-term groundwater monitoring program and institutional controls are included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented as discussed in Section 11.2.2 to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

11.4 Source Area SS35

11.4.1 Site Conditions

The primary concern for source area SS35 is from DDT found in the surface soils in an area adjacent to Garrison Slough. DDT has also been found in the sediment samples from Garrison Slough in the vicinity of source area SS35. In addition, drums that may contain hazardous materials may be buried in three small disposal areas within the site. Groundwater in this area does not pose an unacceptable risk to human health and the environment.

Based on the homogeneous nature of the site and the limited data available, the extent of the contamination and, therefore, the volume of contaminated soil, cannot be well defined. It is not known whether these concentrations represent hot spots associated with drum burial areas where the samples were taken or whether DDT contamination could be more widespread. Based on the 1994 data, 6.5 kg (13.3 lb) of DDT was estimated to be spread over 459 m^3 (600 cu yd) of DDT-contaminated soil.

SS35 appears to be acting as a source of surface water or sediment contamination. PCBs and pesticides, particularly DDT, were found in soil at source area SS35, which is located adjacent to Garrison Slough. Elevated body burdens of DDT were found in fish caught near SS35. Cumulative ecological risks at Eielson AFB are currently being evaluated under the Sitewide program. Preliminary conclusions indicate that SS35 may present reproductive risks to birds and mammals from ingestion exposure to PCBs and DDT. The Sitewide biological risk assessment addresses ecological risks from all areas on base.

11.4.2 Remedial Alternatives

Based on the remedial objectives, four remedial alternatives were developed for source area SS35. The alternatives are listed in Table 11.3. The following subsections describe the remedial alternatives developed for source area SS35. The descriptions provide details about the technologies, describe process options, and present key assumptions.

Table 11.3. Primary Components of the Remedial Alternatives for Source Area SS35

Alternative	Soil Components
1. No action	None
2. Control	Institutional control to prevent human access
3. Cover	Surface cover to prevent contaminant transport to Garrison Slough and to eliminate surface soil exposure
4. Removal	Remove the drums and excavate hot spots of contaminated soil

Alternative 1 – No Action

The no action alternative was evaluated as discussed in Section 11.2.1.

Alternative 2 – Control

The control alternative is a limited action alternative that includes institutional controls and groundwater monitoring. It focuses on the use of institutional controls to prevent human intrusion into the drum disposal areas. The alternative includes base policies restricting access to the area as described in Section 11.2.2.

The control alternative would not achieve RAOs for source area SS35. The DDT in surface soil would continue to be a potential exposure hazard to human and ecological receptors until it degraded. Institutional controls would also not prevent surface water runoff into Garrison Slough.

Alternative 3 – Cover

The cover alternative consists of the installation of a cover as described in Section 11.2.5. The soil cover serves to prevent the migration of contaminants into Garrison Slough by overland runoff and to prevent direct soil contact and ingestion of contaminated surface soils by the base personnel and ecological receptors. The cover is proposed for those areas where DDT has been detected above risk-based levels in the surface soil. In this alternative, the contamination would be contained until natural processes eventually degraded the DDT.

The soil cover would be designed to coordinate with the existing contours to facilitate runoff and minimize the need for maintenance. The cover would extend beyond the areas where risk-based levels are exceeded and would be tapered, as appropriate, to the existing grade. It is assumed the cover consists of 15.2 cm (6 in.) of native top soil overlying 30.5 cm (12 in.) of native sand and gravel. Both layers would be placed in horizontal lifts and compacted. After the cover is placed, the surface would be planted with grass to stabilize the soil cover. Construction of the soil cover could be completed within one summer season.

Alternative 4 – Removal

The removal alternative consists solely of the excavate/remove component discussed in Section 11.2.4. It focuses on removing and disposing of surface soil with DDT concentrations above risk-based levels. Removal of this soil would prevent migration of contaminants into Garrison Slough and prevent exposure through direct contact and ingestion. In addition, buried drums, if found, would be excavated and residual contents would be consolidated, characterized, and incinerated, if necessary. A description of the primary components follows.

Soil in areas where DDT exceeds risk-based levels would be excavated from the site. It is estimated the extent of contaminated surface soil is less than 0.3 m (1 ft) deep and covers an area of approximately 279 m^2 (3000 ft^2) which would produce approximately 459 m^3 (600 cu yd) of contaminated soil. The soil would be disposed in one of three ways: (1) by offsite transportation and incineration, (2) by offsite transportation and landfill disposal in a county landfill, or (3) by disposal in an on-base landfill. Although the soil is not expected to be a RCRA waste, the concentrations are higher than the universal treatment standard, as published in the land disposal restrictions. Therefore, the county landfill may not accept this material. An alternate disposal option for this small amount of material would be to place it in an on-base landfill. This action would remove the contaminated soil from the vicinity of Garrison Slough and place it in a managed landfill.

Three areas of the site that exhibited magnetic anomalies are presumed to contain up to 200 buried drums. Part of this alternative consists of excavating soil to remove, consolidate, characterize, and dispose of the drums. It is estimated that up to 8410 m^3 (11,000 cu yd) of soil would have to be excavated to remove all of the drums. One fourth of the drums are assumed to contain residual material that must be incinerated. The soil surrounding the drums is assumed to be uncontaminated and suitable for backfilling the excavation. After excavation, the drums will be opened, characterized, and consolidated for offsite transportation and incineration.

11.5 Source Area ST58

11.5.1 Site Conditions

The primary concern for source area ST58 is benzene and lead in the groundwater. Petroleum hydrocarbons were also found in the subsurface soils.

The primary potential exposure pathway for source area ST58 is from the future unrestricted use of contaminated groundwater. Therefore, contaminants in groundwater and the risk from continued leaching of contaminants to groundwater are of primary concern.

11.5.2 Remedial Alternatives

Four alternatives were developed for remediation of ST58 and are listed in Table 11.4. Descriptions for each of the four alternatives is presented in the following.

Table 11.4. Primary Components in Alternatives for Source Area ST58

Alternative	Soil Components	Groundwater Components
1. No action	None	None
2. Institutional Control/ Groundwater Monitoring	None	Natural attenuation, groundwater monitoring, institutional controls
3. In situ	Bioventing	Natural attenuation, groundwater monitoring, institutional controls
4. In situ/Extract	Bioventing	Extraction, metals precipitation, air stripping, discharge to Garrison Slough, institutional controls, groundwater monitoring

Alternative 1 – No Action

The no action alternative was evaluated as discussed in Section 11.2.1.

Alternative 2 – Institutional Controls and Groundwater Monitoring

Based on currently observed concentrations in the soil and groundwater, it was estimated that BTEX constituents may continue to leach into groundwater. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination. Because of this continuing source of release and the probability that groundwater concentrations will remain above federal and state standards for an extended period of time, a long-term groundwater monitoring program and institutional controls are included as part of this alternative.

Institutional controls and groundwater monitoring would be implemented, as discussed in Section 11.2.2, to restrict groundwater use, prevent human exposure to contaminants at concentrations above state and federal standards, and maintain an accurate definition of the area of contamination.

Alternative 3 – In Situ

The in situ alternative consists of the following remedial action components:

Bioventing is implemented as described in Section 11.2.6, to reduce the BTEX concentrations in soils. BTEX in the groundwater would be allowed to attenuate through natural processes. It has been assumed that hot spots have been removed and bioventing will achieve long-term bioremediation of residual contaminants in the soil. Bioventing employs a target air flow rate through the vadose zone to optimize oxygen availability for microbial growth.

It is assumed the bioventing system would use nine vertical injection wells on a 15.2-m (50-ft) spacing. The injection wells would be used to introduce oxygen or withdraw soil vapor from an assumed 45.7- to 91.4-m (150- by 300-ft) target area. The air injection rate would be based on achieving an optimal number of pore-volume exchanges per week for contaminant degradation. BTEX in vadose zone soils is expected to be removed by bioventing after a period of 1 year.

Based on currently observed concentrations in the soil and groundwater, it was estimated that BTEX constituents may continue to leach into groundwater. Because it is probable the groundwater concentrations may remain above state and federal standards for an extended period of time, institutional controls and groundwater monitoring will be implemented, as described in Alternative 2.

Alternative 4 – In Situ/Extract

The in situ/extract alternative consists of the following remedial action components:

Bioventing will be implemented as described in Alternative 3 to remove vadose zone BTEX constituents.

Groundwater extraction and treatment will be implemented, as described in Section 11.2.3, to expedite groundwater restoration. A single extraction well removing approximately 40 gpm is assumed for this alternative. The extracted groundwater would be treated using an air stripper to remove the VOCs and using activated carbon to remove other petroleum contaminants from the water. The treated effluent would be discharged to Garrison Slough. The need for air emission controls would be evaluated and implemented in accordance with the Clean Air Act (42 USC 7401). Treated groundwater would be discharged to surface water in accordance with federal ambient water quality criteria, 18 AAC 70, and 18 AAC 72.

Because it is probable the groundwater concentrations may remain above state and federal standards for an extended period of time, institutional controls and groundwater monitoring will be implemented as described in Alternative 2.

12.0 Description of Alternatives-OU 5

This section provides a concise description of the remedial action objectives and remedial alternatives for source areas LF03/FT09 in OU 5. Detailed information on the assumptions and calculations used in the development of the alternatives are presented in the FS.

12.1 Remedial Action Objectives

The primary contaminants of concern at source areas LF03/FT09 are TCE, PCE, vinyl chloride, and 1,4-dichlorobenzene in the groundwater directly beneath the landfill. The specific objectives are, therefore, to

- prevent direct human contact with landfill contents
- minimize the migration of chlorinated VOCs into the groundwater
- control surface water runoff and erosion
- continue to comply with state and federal standards at the boundary of the waste management area.

12.2 Site Conditions at Source Areas LF03/FT09

The main part of the landfill was excavated to a depth below the groundwater table. During the time the landfill was active, wastes were reportedly dumped into the standing water. The shallow trenches on the eastern side of the landfill may be above the water table. This theory will be confirmed in the remedial design phase. The trenches were active during the early 1980s and received waste from the base, including industrial wastes and solvents from the flightline shops. The fire training area (source area FT09) was located on top of the fill in the west-central portion of the landfill. During fire training exercises, JP-4 and other liquids were dumped into an unlined pit and ignited. The soils and waste in the fire training area are contaminated with fuel and solvents.

12.3 Remedial Alternatives

Four alternatives have been developed to address the landfill and fire training area at LF03/FT09. The alternatives are presented in Table 12.1 and are described in the following subsections. Costs are presented in Table 12.2.

12.3.1 Alternative 1 – No Action

Under this alternative, no action would be taken to remove contaminants from or prevent exposure to the landfill or groundwater in source area LF03/FT09. It represents the baseline risk without institutional controls or active remediation. Evaluation of the no action alternative is required by the NCP to provide a baseline against which other alternatives can be compared. The no action alternative will not protect human health or the environment or achieve RAOs. No risk reduction or reduction in the toxicity, mobility, or volume of contaminants will occur. No direct cost is associated with the no action alternative.

Table 12.1. Primary Components in Alternatives for Source Areas LF03/FT09

Alternative	Landfill Components	Groundwater Components
1. No action	None	None
2. Institutional controls/ Groundwater Monitoring	Restrictions to prevent exposure to landfill contents and contaminated groundwater	Natural attenuation, groundwater monitoring, institutional controls
3. Cover	Soil cover to promote drainage and prevent direct contact	Natural attenuation, groundwater monitoring, institutional controls
4. Cap	Geosynthetic landfill cap over trenches, soil cover over remaining landfill	Natural attenuation, groundwater monitoring, institutional controls

Table 12.2. Costs of Remedial Alternatives for Source Areas In OU 5

Source Area	Alternative Description	Costs		
		Capital	30-yr O&M	Total
LF03/FT09	No Action	$0	$0	$0
	Groundwater Monitoring/Institutional Controls	$11,000	$219,000	$230,000
	Soil Cover/Groundwater Monitoring/ Institutional Controls	$4,000,000	$300,000	$4,300,000
	Soil Cover/Composite Cover/ Groundwater Monitoring/Institutional Controls	$7,100,000	$400,000	$7,600,000

12.3.2 Alternative 2 – Institutional Controls and Groundwater Monitoring

Institutional controls are implemented to achieve one or more of the following:

- prevent human contact with the landfill waste.
- prevent exposure to groundwater contaminants at concentrations above state and federal standards.
- restrict access or development on the landfill.

Institutional controls are implemented to reduce potential risks from intrusion into the landfill or the use of contaminated groundwater from beneath the landfill.

This alternative is a limited action alternative. It consists of the following components:

Groundwater monitoring is conducted at the edge of the waste management area to monitor any migration of contaminants from the source areas LF03/FT09 landfill beyond the boundary of the waste management area and Garrison Slough. Monitoring will also be performed at the edge of the waste management area to confirm continuing compliance with state and federal standards.

This alternative would not achieve the remedial action objectives for source areas LF03/FT09. Without proper closure, the landfill debris, which may include buried drums of organic contaminants and the residual soil contamination at the fire training area, is likely to pose a risk from direct contact and uncontrolled surface runoff.

12.3.3 Alternative 3 – Cover

The cover alternative includes the following components:

A soil cover would be placed over the landfill area in accordance with applicable or relevant and appropriate requirements of RCRA Part 264. The cover would minimize the long-term migration of liquids from the landfill and would prevent direct contact with landfill debris and contaminated soil.

Conceptually, the covered area would be less than 40.5 hectares (100 acres) in size. The cover would consist of native soil (sand and gravel) excavated from the base and placed and graded to provide a minimum 1 percent slope. Fine soil, if available, would be more suitable material for the cap, because the permeability of the cap would be reduced. Because the cover would promote surface water drainage, a drainage system (perimeter ditches) would be included to direct and manage surface runoff.

The cover alternative would reduce or eliminate the threat of direct contact of personnel with buried landfill debris. It would also help control surface water runoff and erosion and, subsequently, will reduce the leaching of contaminants to groundwater.

Currently, no state or federal standards are exceeded at the edge of the waste management area, but institutional controls and groundwater monitoring will be implemented to achieve the following:

- prevent human contact with the landfill waste.
- prevent exposure to groundwater contaminants at concentrations above state and federal standards.
- restrict access or development on the landfill.

Institutional controls are implemented to reduce potential risks from intrusion into the landfill or from use of contaminated groundwater from beneath the landfill. Groundwater monitoring is conducted at the edge of the waste management area to monitor any migration of contaminants from the source areas LF03/FT09 landfill beyond the boundary of the waste management area and Garrison Slough. Monitoring will also be performed to confirm continuing compliance with state and federal standards at the edge of the waste management area.

12.3.4 Alternative 4 – Cap

The existing open area of source areas LF03/FT09 would be capped or covered as part of this alternative. The cap alternative includes the following components:

A soil cover, as described in Alternative 3, would be placed over the LF03/FT09 landfill area, where appropriate.

For areas requiring a composite cover under RCRA Part 264, some areas of LF03 may be capped with a multi-layer geosynthetic cap. Conceptually, the capped area was assumed to be about 8.1 hectares (20 acres) in size. The cap would reduce the release of landfill contaminants to the groundwater through leaching for material existing above the groundwater table. Landfill gas vents to release methane would be installed, as needed, to adequately vent the landfill. A drainage system would be included to direct and manage surface runoff. The capped area would be fenced to minimize traffic over it that could damage the cap components.

The cap alternative would achieve RAOs relating to the elimination of exposure to the waste materials, controlling surface water runoff and erosion, and reducing infiltration to subsequently reduce leaching of contaminants to groundwater.

Currently, no state or federal standards are exceeded at the edge of the waste management area, but institutional controls and groundwater monitoring will be implemented to reduce potential risks from intrusion into the landfill or from use of contaminated groundwater from beneath the landfill. Groundwater monitoring is conducted at the edge of the waste management area to monitor any migration of contaminants from the source areas LF03/FT09 landfill beyond the boundary of the waste management area and Garrison Slough. Monitoring will also be performed to confirm continuing compliance with state and federal standards at the edge of the waste management area.

13.0 Summary of the Comparative Analysis of Alternatives

In accordance with federal regulations, the cleanup alternatives for each source area were evaluated based on the nine criteria presented in the National Contingency Plan (NCP). The nine criteria are divided into three groups as follows:

Threshold Criteria - Must be met by all alternatives:

(1) Overall Protection of Human Health and the Environment. How well does the alternative protect human health and the environment, both during and after construction?

(2) Compliance with Applicable or Relevant and Appropriate Requirements. Does the alternative meet all applicable or relevant and appropriate state and federal laws?

Balancing Criteria - Used to compare alternatives to each other:

(3) Long-Term Effectiveness and Permanence. How well does the alternative protect human health and the environment after cleanup? What, if any, risks will remain at the area?

(4) Reduction of Toxicity, Mobility, or Volume Through Treatment. Does the alternative effectively treat the contamination to significantly reduce the toxicity, mobility, and volume of the hazardous substance?

(5) Short-term Effectiveness. Are there potential adverse effects to either human health or the environment during construction or implementation of the alternative? How fast does the alternative reach the cleanup goals?

(6) Implementability. Is the alternative both technically and administratively feasible? Has the technology been used successfully at similar areas?

(7) Cost. What are the relative costs of the alternatives?

Modifying Criteria - Evaluated as a result of public comments:

(8) State Acceptance. What are the state's comments or concerns about the alternatives considered and about the preferred alternative? Does the state support or oppose the preferred alternative?

(9) Community Acceptance. What are the community's comments or concerns about the alternatives considered and about the preferred alternative? Does the community generally support or oppose the preferred alternative?

This section contains the results of the comparative analyses for the source areas DP44, WP45/SS57, SS61, DP25, SS35, ST58, and LF03/FT09 where alternatives were evaluated in the Feasibility Study.

13.1 DP44 - Battery Leach Field

13.1.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

All of the alternatives, except the No Action alternative, would implement institutional controls to prevent exposure to contaminated groundwater until federal and state regulatory levels are achieved. The SVE/extract alternative would be designed to treat contaminated soils and groundwater and could theoretically achieve cleanup objectives more quickly than either Alternative 3, which includes source reduction to treat the soil contamination in the unsaturated zone or Alternatives 1 and 2, which rely on natural processes.

Although the alternatives include varying levels of contaminant removal, all alternatives are expected to require an extended period of time to comply with all state and federal regulatory levels throughout the contaminant plume. For this source area, source reduction using SVE may be warranted, if sufficient contamination remains in the vadose zone.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The primary ARARs for this source area focus on groundwater protection. Compliance with ARARs include compliance with federal MCLs and with State of Alaska Water Quality Standards (18 AAC 70). All alternatives will eventually comply with groundwater chemical-specific ARARs and, with the exception of the No Action alternative, would prevent exposure to contaminated groundwater through the use of institutional controls. The period for compliance with all state and federal regulatory levels may be decreased through implementation of Alternative 3, SVE, or Alternative 4, SVE/Extract.

It is expected that all action-specific ARARs could be met by all alternatives, including air emission limitations and surface water discharge levels. No action-specific ARARs exist for Alternative 1, No Action, or Alternative 2, Institutional Controls/Groundwater Monitoring.

13.1.2 Balancing Criteria

Table 13.1 includes the comparative analysis among the balancing criteria for source area DP44.

13.1.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for this source area.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

13.2 WP45/SS57 - Photo Laboratory/Fire Station Parking Lot

13.2.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

All of the alternatives, except the *No Action* alternative, would implement institutional controls to prevent exposure to contaminated groundwater until federal and state regulatory levels are achieved. Alternative 6 would be designed to treat both contaminated soils and groundwater and could theoretically achieve cleanup objectives more quickly than either Alternatives 3, 4, or 5 which include SVE, bioventing, and/or soil excavation to reduce the source of groundwater contamination in the unsaturated soils. Alternatives 1 and 2 rely on natural processes to achieve groundwater cleanup levels. Recent data indicates that little residual contamination remains in the vadose zone. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination.

Although the alternatives include varying levels of contaminant removal, all alternatives are expected to require an extended period of time to comply with all state and federal regulatory levels throughout the contaminant plume.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The primary ARARs for this source area focus on groundwater protection. Compliance with ARARs include compliance with both federal MCLs and with state of Alaska Water Quality Standards (18 AAC 70). All alternatives will eventually comply with groundwater chemical-specific ARARs and, with the exception of the *No Action* alternative, all would prevent exposure to contaminated groundwater through the use of institutional controls. The period for compliance with all state and federal regulatory levels is not expected to be significantly decreased through source removal or groundwater extraction/treatment.

It is expected that all action-specific ARARs could be met by all alternatives, including air emission limitations and surface water discharge levels. There are no action-specific ARARs for Alternative 1, *No Action*, or Alternative 2, *Institutional Controls/Groundwater Monitoring*.

13.2.2 Balancing Criteria

Table 13.2 includes the comparative analysis amongst the balancing criteria for source areas WP45/SS57.

13.2.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for these source areas.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

13.3 SS61 - Vehicle Maintenance Building 3213

13.3.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

All of the alternatives, except the No Action alternative, would implement institutional controls to prevent exposure to contaminated groundwater until federal and state regulatory levels are achieved. Alternatives 3 and 4 would be designed to treat either contaminated soils or groundwater and could theoretically achieve cleanup objectives more quickly than either Alternatives 1 or 2 that rely on natural processes to achieve groundwater cleanup levels. Dry wells and surrounding soils were removed during construction of the new building and little residual contamination is expected in the unsaturated soils. Unless additional soil contamination is identified, soil excavation is not expected to decrease the time to reach RAOs. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination within an area below the building.

Although the alternatives include varying levels of contaminant removal, all alternatives are expected to require an extended period of time to comply with all state and federal regulatory levels throughout the contaminant plume.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The primary ARARs for this source area focus on groundwater protection. Compliance with ARARs include compliance with federal MCLs and with State of Alaska Water Quality Standards (18 AAC 70). All alternatives will eventually comply with groundwater chemical-specific ARARs and, with the exception of the No Action alternative, would prevent exposure to contaminated groundwater through the use of institutional controls. The period for compliance with all state and federal regulatory levels is not expected to be significantly decreased through source removal or groundwater extraction/treatment.

It is expected that all action-specific ARARs could be met by all alternatives, including air emission limitations and surface water discharge levels. No action-specific ARARs exist for Alternative 1, No Action, or Alternative 2, Institutional Controls/Groundwater Monitoring.

13.3.2 Balancing Criteria

Table 13.3 includes the comparative analysis among the balancing criteria for source area SS61.

13.3.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for these source areas.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

13.4 DP25 - E-6 Fuel Storage Tank Area

13.4.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

All of the alternatives, except the No Action alternative, would implement institutional controls to prevent exposure to contaminated groundwater until federal and state regulatory levels are achieved. Alternatives 3 and 4 would be designed to treat either contaminated soils or groundwater, if accessible, and could theoretically achieve cleanup objectives more quickly than either Alternatives 1 or 2 that rely on natural processes to achieve groundwater cleanup levels. Groundwater and soil contamination appear to be confined beneath the bermed area containing the tank farm. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination within an area below this tank farm.

The success of the contaminant removal under the various alternatives is dependent upon the accessibility of the contamination and the implementability of a treatment system beneath the tank farm. Given the potential inability to treat a significant amount of contamination in either the subsurface soils or the groundwater, all alternatives are expected to require an extended period of time to comply with all state and federal regulatory levels throughout the contaminant plume.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The primary ARARs for this source area focus on groundwater protection. Compliance with ARARs include compliance with federal MCLs and with State of Alaska Water Quality Standards (18 AAC 70). All alternatives will eventually comply with groundwater chemical-specific ARARs and, with the exception of the No Action alternative, would prevent exposure to contaminated groundwater through the use of institutional controls. Given the likely inability to treat a significant amount of contamination in either the subsurface soils or the groundwater, the period for compliance with all state and federal regulatory levels is not expected to be significantly decreased through source removal or groundwater extraction/treatment.

It is expected that all action-specific ARARs could be met by all alternatives, including air emission limitations and surface water discharge levels. No action-specific ARARs exist for Alternative 1, No Action, or Alternative 2, Institutional Controls/Groundwater Monitoring.

13.4.2 Balancing Criteria

Table 13.4 includes the comparative analysis among the balancing criteria for source area DP25.

13.4.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for this source area.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

13.5 SS35 - Asphalt Mixing and Drum Burial Area

13.5.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

Alternatives 1 and 2 rely on natural processes to degrade the pesticides and do not prevent surface water runoff into the slough. Alternative 1 also does not prevent direct contact with contaminated soils, because it does not include institutional controls. Alternatives 3 and 4 would effectively prevent direct contact with soils and surface water runoff into the slough. If implementable and cost-effective, Alternative 4 could provide an increased level of permanence by removal of contaminated soils and drums in this area.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The ARARs for this area are the federal and state ambient water quality standards and compliance with these levels for surface waters in Garrison Slough. Alternatives 1 and 2 may result in exceeding these standards. Alternatives 3 and 4 are expected to comply with all ARARs.

It is expected that action-specific ARARs could be met by all alternatives, including land disposal restrictions for Alternative 4, in the event of excavation, and disposal of hazardous waste and surface water discharge levels. No action-specific ARARs exist for Alternative 1, No Action, or Alternative 2, Institutional Controls/Groundwater Monitoring.

13.5.2 Balancing Criteria

Table 13.5 includes the comparative analysis among the balancing criteria for source area SS35.

13.5.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for this source area.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision.

13.6 ST58 - Old Quartermaster Service Station

13.6.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

All of the alternatives, except the No Action alternative, would implement institutional controls to prevent exposure to contaminated groundwater until federal and state regulatory levels are achieved. Alternatives 3 and 4 would be designed to treat contaminated soils or groundwater and could achieve cleanup objectives more quickly than either Alternatives 1 or 2, which rely on natural processes to achieve groundwater cleanup levels. Within the groundwater, biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination.

All alternatives are expected to require an extended period of time to comply with all state and federal regulatory levels throughout the contaminant plume.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

The primary ARARs for this source area focus on groundwater protection. Compliance with ARARs include compliance with federal MCLs and with state of Alaska Water Quality Standards (18 AAC 70). All alternatives will eventually comply with groundwater chemical-specific ARARs and, with the exception of the No Action alternative, would prevent exposure to contaminated groundwater through the use of institutional controls. If effective in removing contamination in the smear zone or saturated zone, Alternatives 3 and 4 could achieve ARARs in a shorter period of time than Alternatives 1 or 2 that rely on natural processes to achieve ARARs.

It is expected that all action-specific ARARs could be met by all alternatives, including air emission limitations and surface water discharge levels. No action-specific ARARs exist for Alternative 1, No Action, or Alternative 2, Institutional Controls/Groundwater Monitoring.

13.6.2 Balancing Criteria

Table 13.6 includes the comparative analysis among the balancing criteria for source area ST58.

13.6.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for this source area.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

13.7 LF03/FT09 - Inactive Base Landfill/Fire Training Area

13.7.1 Threshold Criteria

Overall Protection of Human Health and the Environment:

Alternatives 1 and 2 do not eliminate any risks associated with exposure to contaminated soils. Alternatives 3 and 4 are effective in preventing exposure to the soil contamination. The contents of the landfill would remain in place; therefore, groundwater monitoring would continue to ensure that levels at the edge of the waste management area do not exceed state or federal standards.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

Currently, no groundwater at the edge of the waste management area exceeds state or federal standards. Alternatives 3 and 4 would be designed to meet the substantive applicable or relevant and appropriate requirements for RCRA Subtitle C Part 264.

13.7.2 Balancing Criteria

Table 13.7 includes the comparative analysis among the balancing criteria for source area LF03/FT09.

13.7.3 Modifying Criteria

State Acceptance:

The State of Alaska concurs with the selected remedy for these source areas.

Community Acceptance:

No public comments were received regarding the alternatives or preferred alternatives included under this Record of Decision

Table 13.1. Comparison of Cleanup Alternatives for Source Area DP44 Using the Five Balancing Criteria

DP44 Battery Shop Leach Field DP44

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives				
1	2	3	4	**BALANCING CRITERIA**
○	⊙	◓	●	**Long-term effectiveness and permanence** Alternatives 1 and 2 both rely on natural processes, but Alternative 2 prevents use of contaminated groundwater. Alternatives 3 and 4 treat the source in soil to minimize future contaminant migration. In addition, Alternative 4 includes groundwater treatment and therefore addresses more of the contamination. However, its effectiveness in achieving groundwater standards is not well established.
○	○	◓	●	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1 or 2 includes treatment. Alternatives 3 and 4 reduce toxicity and volume through treatment, but Alternative 4, which includes groundwater treatment, would treat a larger portion of the contamination.
○	⊙	◓	●	**Short-term effectiveness** Although the effectiveness of groundwater extraction and treatment is not well-established, Alternative 4 might achieve cleanup standards more quickly than Alternative 3.
NA	●	◓	⊙	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies. Alternative 4 is more difficult to implement due to the additional need for installation and construction of a groundwater extraction and treatment system and operational difficulties in an arctic climate.
0	140	1,600	3,600	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

1 No Action

2 Groundwater Monitoring/Institutional Controls

3 Soil Vapor Extraction/Groundwater Monitoring/Institutional Controls

4 Soil Vapor Extraction/Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls

KEY:

● = best ◓ = good

⊙ = poor ○ = worst

NA = Not Applicable

Table 13.2. Comparison of Cleanup Alternatives for Source Area WP45/SS57 Using the Five Balancing Criteria

WP45/SS57 Photo Lab/Fire Station Parking Lot WP45/SS57

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives 1	2	3	4	5	6	BALANCING CRITERIA
○	⊙	◓	◓	●	◓	**Long-term effectiveness and permanence** Alternatives 3 and 4 treat and/or remove the soils which are acting as a continuing source of groundwater contamination, but under Alternative 4, it may not be possible to excavate soils below the groundwater table. Alternatives 5 and 6 also include groundwater treatment and therefore address more of the groundwater contamination. However, its effectiveness in achieving groundwater standards is not well-established.
○	○	◓	◓	●	●	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1 or 2 includes treatment. Alternatives 3-6 reduce toxicity and volume through treatment of soil, but Alternatives 5 and 6, which include groundwater treatment, would treat a larger portion of the contamination.
○	⊙	◓	◓	●	●	**Short-term effectiveness** Although the effectiveness of groundwater extraction and treatment is not well-established, Alternatives 5 and 6 might achieve cleanup standards more quickly than Alternatives 3 and 4. There may be air emissions during soil excavation activities.
NA	●	●	◓	◓	⊙	**Implementability** Under Alternatives 2-6, institutional controls are readily implementable. Alternatives 3-6 include readily available technologies. Alternatives 5 and 6 are more difficult to implement due to the additional need for installation and construction of a groundwater extraction and treatment system and the operational difficulties in an arctic climate. For Alternatives 4 and 6, excavation of soils below the water table and near structures would be very difficult.
0	180	1,200	11,000	5,600	16,000	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

1 No Action

2 Groundwater Monitoring/Institutional Controls

3 Soil Vapor Extraction/Bioventing/Groundwater Monitoring/Institutional Controls

4 Bioventing/Soil Excavation with Offsite Treatment and Disposal/Groundwater Monitoring/Institutional Controls

5 Soil Vapor Extraction/Bioventing/Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls

6 Soil Excavation with Offsite Treatment and Disposal/Bioventing/Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls

KEY:

● = best ◓ = good

⊙ = poor ○ = worst

NA = Not Applicable

Table 13.3. Comparison of Cleanup Alternatives for Source Area SS61 Using the Five Balancing Criteria

SS61 Vehicle Maintenance Building 3213 SS61

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives				
1	2	3	4	**BALANCING CRITERIA**
⊙	◓	◓	◓	**Long-term effectiveness and permanence** No continuing source of groundwater contamination was identified in the soil and groundwater contamination is limited to an area directly beneath the building. Institutional controls will reliably prevent use of the groundwater; therefore, Alternatives 2-4 provide about the same level of protectiveness.
○	○	⊙	◓	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1 or 2 includes treatment. Alternatives 3 and 4 would reduce toxicity and volume of contamination through treatment if an additional source of soil contamination was identified in the future. Alternative 4, which could include groundwater treatment under the building, could potentially treat a larger portion of the contamination.
○	○	⊙	◓	**Short-term effectiveness** Although the effectiveness of groundwater extraction and treatment is not well-established, Alternative 4 might achieve cleanup standards more quickly than Alternative 3. If a concentrated source of soil contamination was found, there may be air emissions during soil excavation activities.
NA	●	⊙	⊙	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies although a source of soil contamination has not been identified. Alternative 4 is more difficult to implement due to the additional need for installation and construction of a groundwater extraction and treatment system under a building and operational difficulties in an arctic climate. For Alternative 3, if a concentrated source of soil contamination was found, excavation of soils below the water table and near structures would be very difficult.
0	700	160	3,100	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

1	No Action
2	Groundwater Monitoring/Institutional Controls
3	Soil Excavation with Offsite Treatment and Disposal/Groundwater Monitoring/Institutional Controls
4	Groundwater Extraction and Treatment/Groundwater Monitoring/Institutional Controls

KEY:

● = best ◓ = good

⊙ = poor ○ = worst

NA = Not Applicable

Table 13.4. Comparison of Cleanup Alternatives for Source Area DP25 Using the Five Balancing Criteria

DP25 E-6 Fuel Storage Tank Area DP25

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives 1	2	3	4	BALANCING CRITERIA
○	◓	◓	◓	**Long-term effectiveness and permanence** Groundwater contamination is limited to to an area directly beneath the bermed area containing the tank farm and the contaminated area does not appear to be expanding. Institutional controls will reliably prevent use of the groundwater; therefore, Alternatives 2-4 provide about the same level of protectiveness.
○	○	⊙	◓	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1 or 2 includes treatment. Alternatives 3 and 4 would reduce toxicity and volume of contamination through treatment. Alternative 4, which could include groundwater treatment and petroleum product removal under the bermed area, could potentially treat a larger portion of the contamination.
○	○	⊙	◓	**Short-term effectiveness** Although the effectiveness of groundwater extraction and treatment is not well-established, Alternative 4 might achieve cleanup standards more quickly than Alternative 3.
NA	●	⊙	⊙	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies although available soil treatment and disposal facilities are limited. Alternative 4 is more difficult to implement due to the additional need for installation and construction of a groundwater extraction and treatment system under the bermed area and the operational difficulties in an arctic climate. For Alternative 3, excavation of soils below the water table and near structures would be very difficult.
0	210	4,000	5,500	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

1 No Action
2 Groundwater Monitoring/Institutional Controls
3 Limited Soil Excavation with Onsite Bioremediation/Groundwater Monitoring/Institutional Controls
4 Groundwater Extraction and Treatment/Groundwater Monitoring/ Institutional Controls

KEY:

● = best ◓ = good
⊙ = poor ○ = worst
NA = Not Applicable

Table 13.5. Comparison of Cleanup Alternatives for Source Area SS35 Using the Five Balancing Criteria

SS35 Asphalt Mixing and Drum Burial Area SS35

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives				
1	2	3	4	BALANCING CRITERIA
○	○	◓	●	**Long-term effectiveness and permanence** Alternatives 1 and 2 rely on natural processes to degrade the pesticides and do not prevent surface water runoff into the slough. Both Alternatives 3 and 4 would prevent direct contact and surface water runoff of the contamination. Alternative 3 would require long-term cover maintenance and monitoring. Alternative 4 would remove the source and would not leave residual contamination.
○	○	○	●	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1, 2, or 3 includes treatment. Only Alternative 4 would reduce toxicity and volume through treatment of contaminated soil.
○	○	●	●	**Short-term effectiveness** Both Alternatives 3 and 4 would meet cleanup objectives in about the same amount of time. Under Alternative 4, there may be air emissions during soil and drum excavation activities.
NA	●	●	⊙	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies. Under Alternative 4, excavation and handling of a large volume of drums and soil would be very difficult and available soil treatment and disposal facilities are limited.
0	0	40	a) 410 b) 490 c) 2,100	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

1 No Action
2 Institutional Controls
3 Soil Cover
4 Soil Excavation/Drum Removal with: a) Onsite Disposal
b) Offsite Disposal
c) Offsite Disposal and Treatment

KEY:

● = best ◓ = good
⊙ = poor ○ = worst
NA = Not Applicable

Table 13.6. Comparison of Cleanup Alternatives for Source Area ST58 Using the Five Balancing Criteria

ST58 Old Quartermaster Service Station Site ST58

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives 1	2	3	4	BALANCING CRITERIA
○	⊙	◓	●	**Long-term effectiveness and permanence** Alternatives 1 and 2 both rely on natural processes to degrade contamination, but Alternative 2 prevents use of contaminated groundwater. Alternatives 3 and 4 treat the source in soil to minimize future contaminant migration. In addition, Alternative 4 includes groundwater treatment and therefore addresses more of the contamination. However, its effectiveness in achieving groundwater standards is not well-established.
○	○	◓	●	**Reduction of toxicity, mobility, or volume through treatment** Neither Alternative 1 or 2 includes treatment. Alternatives 3 and 4 reduce toxicity and volume through treatment, but Alternative 4, which includes groundwater treatment, would treat a larger portion of the contamination.
○	○	◓	●	**Short-term effectiveness** Although the effectiveness of groundwater extraction and treatment is not well-established, Alternative 4 might achieve cleanup standards more quickly than Alternative 3.
NA	●	◓	⊙	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies. Alternative 4 is more difficult to implement due to the additional need for installation and construction of a groundwater extraction and treatment system and operational difficulties in an arctic climate.
0	140	350	2,800	**Cost ($K)** Total cost - capital plus O&M for 30 years at 5% interest.

Clean Up Alternatives

Alternative	Description
1	No Action
2	Groundwater Monitoring/Institutional Controls
3	Bioventing/Groundwater Monitoring/Institutional Controls
4	Bioventing/Groundwater Extraction and Treatment/Groundwater Monitoring/ Institutional Controls

KEY:

● = best ◓ = good

⊙ = poor ○ = worst

NA = Not Applicable

Table 13.7. Comparison of Cleanup Alternatives for Source Area LF03/FT09 Using the Five Balancing Criteria

LF03/FT09 Inactive Base Landfill/Fire-Training Area LF03/FT09

Alternatives are ranked by comparing them to each other.

Clean Up Alternatives				
1	2	3	4	**BALANCING CRITERIA**
○	⊙	◓	●	**Long-term effectiveness and permanence** Through institutional controls, Alternative 2 would prevent digging into the waste, but would not completely eliminate direct contact with any surface contamination or infiltration to groundwater. Both Alternatives 3 and 4 are effective in isolating the landfill contents, but Alternative 4 further minimizes infiltration and contaminant migration to groundwater through use of a composite cap.
○	○	○	○	**Reduction of toxicity, mobility, or volume through treatment** None of the alternatives include treatment of the waste. The investigation did not identify "hot spots" of soil or groundwater contamination suitable for treatment within this large landfill.
○	○	◓	◓	**Short-term effectiveness** Both Alternatives 3 and 4 would meet cleanup objectives in about the same amount of time.
NA	●	◓	◓	**Implementability** Under Alternatives 2-4, institutional controls are readily implementable. Alternatives 3 and 4 include readily available technologies. Techniques for installation, maintenance, and monitoring of landfill covers are well-established.
0	230	4,300	7,500	**Cost ($K)** Total cost - capital plus O&M for 30 years at.5% interest.

Clean Up Alternatives

1	No Action
2	Groundwater Monitoring/Institutional Controls
3	Soil Cover/Groundwater Monitoring/Institutional Controls
4	Soil Cover/Composite Cover/Groundwater Monitoring/Institutional Controls

KEY:

● = best ◓ = good

⊙ = poor ○ = worst

NA = Not Applicable

14.0 Selected Remedies

This section presents the source areas that require no further action, followed by a discussion of the selected remedies for the source areas in OUs 3, 4 and 5 that require action. Table 14.1 summarizes the selected remedy for each source area. Table 14.2 provides a summary of the estimated costs of the selected remedies.

The goal of the Superfund approach is to return usable ground waters to their beneficial uses within a timeframe that is reasonable, given the particular circumstances of the site. Reasonable restoration time periods may range from very rapid (1 to 5 years) to relatively extended (several decades). Factors, such as location, proximity to population, anticipated future land use, and mobility of the contaminant plume, are all considered when determining an appropriate restoration timeframe. The use of: (1) natural attenuation with institutional controls, (2) source reduction through treating soil contamination to prevent additional contaminant leaching into the groundwater; and (3) groundwater pumping and treating were all considered viable options for addressing groundwater contamination at Eielson AFB. For source areas within OUs 3, 4, and 5, the following site-specific conditions were considered when determining reasonable restoration timeframes:

- Contaminant plumes in this relatively homogeneous aquifer do not appear to be spreading or are decreasing in size.
- Biodegradation, dispersion, dilution, or adsorption appear to be effectively containing or reducing the size of the contaminant plume.
- Areas impacted by the contamination are relatively small with little likelihood of extended exposure to groundwater anticipated.
- The future land use as a military installation is not anticipated to change in the foreseeable future.

For source areas at Eielson AFB, natural attenuation, in combination with institutional controls or source reduction, was selected in situations where reduction of contamination in the groundwater would be attained in a similar timeframe as active remediation of the groundwater.

14.1 No Further Action Sites

As indicated in Section 4.1, the source evaluation screening process found that three areas (LF01, WP32, and DP55) contained contaminants below screening levels or the affected pathway was incomplete; therefore, no further action under CERCLA is required. For the source areas within OUs 3, 4, and 5, the cumulative risk for source areas LF02, LF04, LF06, ST27, WP33, SS36, SS37, SS39/SS63, and SS64 is within acceptable regulatory levels and, therefore, environmental cleanup is not proposed for these 10 source areas under CERCLA. The Air Force will continue to monitor groundwater on the base to ensure compliance with state and federal regulations, and to ensure that groundwater use does not pose an unacceptable risk to human health or the environment.

Under a separate federal program, the Air Force has submitted a closure plan for the ordnance area at LF04 under the Resource Conservation and Recovery Act (RCRA), Section 3008(a). The landfills, LF01, LF02, LF06, and, potentially, LF04 will be addressed in accordance with state of Alaska Solid Waste Regulations under 18 AAC 60.

14.2 Recommended Limited Action Sites

Groundwater constituents in five of the source areas (WP45/SS57, ST56, SS61, and DP25) exceed maximum contaminant levels. These source areas are isolated, have no significant contamination or have inaccessible residual contamination in the vadose zone, and are characterized by a stable plume configuration. In the case of DP25, the plume is limited to an active tank farm. Action for these source areas is limited to continued groundwater monitoring and restrictions on the use of the groundwater.

Five of the source areas (WP45/SS57, ST56, SS61, and DP25) will receive limited action including:

- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.
- For groundwater at ST56, wellhead treatment using carbon adsorption or air stripping will be applied, as appropriate, to prevent human exposure to contaminants above regulatory levels.
- If future developments in bioventing technology make implementation practical at DP25, installation of a bioventing system will be re-evaluated at that time.
- Institutional controls to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.

Institutional controls would be used to prevent human exposure to contamination remaining at the source areas at concentrations above state or federal regulatory levels or health-based risk levels. Specific controls would include restrictions limiting access to the source areas, and administrative controls to limit groundwater use and future land use. Access restrictions, including such measures as permanent markers would be used to prevent direct human exposure to contaminants. Groundwater restrictions would be implemented by placing written notification in the base directives prohibiting the use of contaminated groundwater. In addition, all existing and any new wells located within the area of contamination shall be locked to prevent unauthorized use.

The administrative controls for limiting future land use would include placing written notification of these remedial actions in the base land use master plan. The notification shall prohibit any activity that would disrupt aspects of the engineered controls. A copy of the notification would be provided to any prospective transferees of the property and would be included in any transfer documents, including deeds, in the event that the Air Force releases control of the affected property. The Air Force shall provide EPA and the state with written verification that notification(s) have been implemented.

Table 14.1. Summary of Selected Alternatives

OU	Source Area	Source Area Description	Preferred Clean-up Alternatives
3	DP44	Battery Shop Leach Field	Soil Vapor Extraction/Groundwater Monitoring/Institutional Controls
	WP45/SS57	Photo Lab/Fire Station Parking Lot	Groundwater Monitoring/Institutional Controls
	ST56	Engineer Hill Spill Site	Groundwater Monitoring/Wellhead Protection or Treatment as Appropriate
	SS61	Vehicle Maintenance Building 3213	Groundwater Monitoring/Institutional Controls
4	DP25	E-6 Fuel Storage Tank Area	Groundwater Monitoring/Institutional Controls/Bioventing (if feasible)
	ST27	E-11 Fuel Storage Tank Area	No Further Clean-up Action
	WP33	Wastewater Plant Effluent Infiltration Pond	No Further Clean-up Action
	SS35	Asphalt Mixing and Drum Burial Area	Soil Cover/Remove Drums in Future (if appropriate)
	SS36	Drum Storage Area	No Further Clean-up Action
	SS37	Drum Storage Area	No Further Clean-up Action
	SS39/SS63	Asphalt Lake/Asphalt Lake Spill Site	No Further Clean-up Action
	ST58	Old Quartermaster Service Station Site	Bioventing/Groundwater Monitoring/ Institutional Controls
	SS64	Transportation Maintenance Drum Storage Site	No Further Clean-up Action
5	LF02	Old Base Landfill	No Further Clean-up Action
	LF03/FT09	Inactive Base Landfill/Fire-Training Area	Soil Cover / Composite Cover / Groundwater Monitoring/Institutional Controls
	LF04	Old Army Landfill and Ordnance Area	No Further Clean-up Action
	LF06	Old Landfill	No Further Clean-up Action
SER Sites	LF01	Original Base Landfill and Drum Storage Area	No Further Clean-up Action
	WP32	Wastewater Plant Spill Ponds	No Further Clean-up Action
	DP55	Birch Lake Recreation Area	No Further Clean-up Action

14.2.1 Source Area ST56 (OU 3)

Groundwater monitoring/institutional controls constitute the selected remedy for source area ST56. The limited action at ST56 includes supplying drinking water, applying wellhead treatment as applicable, and monitoring groundwater from the water supply well and existing monitoring wells. Subsurface treatment of the groundwater was not selected, because of the complex hydrogeology of the fractured bedrock; the limited extent of the contamination in a remote, restricted area of the base; and the reliability of available institutional controls to restrict the use of the contaminated well.

14.2.2 Source Area WP45/SS57 (OU 3)

Alternative 2, Groundwater Monitoring/Institutional Controls, has been determined to be the most appropriate remedy for source area WP45/SS57. Soil and groundwater investigations previously indicated that groundwater posed a risk to human health or the environment and that residual contamination in the soil could be acting as a source of continuing groundwater contamination. However, data from a report presented by the Utah Water Research Laboratory (UWRL), collected during an independent study of WP45/SS57, indicates that soil contamination is contained around Well 45MW08 and rapid soil contaminant degradation is apparently occurring in the immediate vicinity of that well. In addition, groundwater contamination appears to have reached a steady-state concentration and distribution. The proposed alternative at WP45/SS57 was to implement SVE and bioventing in addition to groundwater monitoring and institutional controls. The selected alternative, groundwater monitoring/institutional controls, is significantly different from the proposed alternative. The reason for changing the remediation alternative for WP45 and SS57 is explained in Section 16.0.

Fire Well C is located in source area WP/57 and is currently connected to the base water supply system. Institutional controls would also apply to this well to prevent use of the contaminated groundwater in a manner that would pose an unacceptable risk to human health or the environment.

14.2.3 Source Area SS61 (OU 3)

Alternative 2, Groundwater Monitoring/Institutional Controls, has been determined to be the most appropriate remedy for source area SS61.

The source of solvent contamination at SS61 was a dry well on the south side of the vehicle maintenance shop. The dry well and surrounding soils were excavated and backfilled. Soil and groundwater investigations indicate that soil above the water table does not pose a significant risk to human health or the environment. Groundwater beneath the vehicle maintenance shop is contaminated with solvent. This plume is limited to the area beneath the building and slightly north beneath the asphalt driveway in front of the building. The majority of the remaining contaminated soil is located below the water table. Therefore, removing this soil would be difficult and of limited usefulness in decreasing timeframes to meet RAOs.

Because of the limited access to the groundwater beneath the building, the action proposed is limited to preventing the use of groundwater and to monitoring the plume to ensure that it does not move from beneath the building. If the groundwater contamination is shown to be moving from beneath the building at concentrations that would pose an unacceptable risk to human health or the environment, the need for cleanup action will be reevaluated.

14.2.4 Source Area DP25 (OU 4)

Alternative 2, Groundwater Monitoring/Institutional Controls, has been determined to be the most appropriate remedy for source area DP25. Currently, all contamination at DP25 is contained within the tank complex berm. The proposed alternative at DP25 is to monitor the groundwater and implement institutional controls. To comply with other state and federal programs, the secondary containment requirement of 18 Alaska Administrative Code 75, the bulk storage fuel tanks will be upgraded with impervious liners in the diked areas. The upgrade project is scheduled to be completed by the state deadline of January 1997. During the installation of the liners, approximately 0.3 m (12 in.) of fuel-contaminated soil from within the berms (21,400 m^3 or approximately 28,000 cu yd) will be excavated. Although the liner is being emplaced to contain possible future fuel spills, it will also serve to prevent infiltration of fuel into the soil, which would otherwise contribute to the spread of contamination at this site.

If monitoring indicates any migration of contaminants outside the tank complex berm in the future, trenches will be emplaced outside the berm to capture any migrating fuel. In addition, if future developments in bioventing technology make implementation practical at DP25, installation of a bioventing system will be re-evaluated at that time.

14.3 Recommended Treatment Action Sites

Five source areas in OUs 3, 4, and 5 will require active remediation. Based upon CERCLA requirements, the detailed analysis of the alternatives using the nine EPA criteria, and public comments, the U.S. Air Force, ADEC, and EPA have determined the alternatives that are the most appropriate remedies for each source area. Table 14.1 summarizes the selected remedy for each source area. These remedies were selected as a result of the comparative analysis of the alternatives against the nine EPA criteria. Additional discussion about the alternatives selected for each source area is included in the following subsections.

Cleanup alternatives will be implemented using a phased approach, where design data gathering and ongoing monitoring will continue to be evaluated to confirm the appropriateness of the selected remedy or, once a remedy is implemented, to determine the effectiveness of the technology. This phased approach will accommodate needed selected remedy or system modifications.

14.3.1 Source Area DP44 (OU 3)

The selected remedy for DP44 is soil vapor extraction/groundwater monitoring/institutional controls. This alternative was chosen because of its effectiveness for treating chlorinated solvents that are found at this source area and because it is believed that SVE will reduce risk to human health and the environment sooner than monitoring and institutional controls alone. Groundwater extraction and treatment/SVE is not the preferred alternative because of its difficult implementation, and because biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination.

The primary components of the selected remedy are:

- Install a soil vapor extraction system to remove solvent contamination in soil that is posing a threat to groundwater through leaching.

- Implement institutional controls, as described, to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.

- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.

It may become apparent, during the design phase, implementation, or operation of the SVE system that solvent and fuel-related compounds in the soil and groundwater have declined or have fallen below levels that would pose an unacceptable risk. In such cases, the system performance standards or the remedy may be re-evaluated to allow for the contaminants to naturally degrade.

14.3.2 Source Area SS35 (OU 4)

A combination of Alternative 3 (Soil Cover) and Alternative 4 (Possible Removal of Drums) has been determined to be the most appropriate remedy for source area SS35. The placement of a clean soil cover is designed to prevent contact with pesticide-contaminated soil and to prevent runoff of contaminated soil into Garrison Slough. The buried drums will be left in place and the groundwater, surface water, sediments, and aquatic organisms monitored, as appropriate. At this time, excavation of the contaminated soil and drums is not considered cost-effective.

The cover alternative focuses on minimizing DDT migration into Garrison Slough and eliminating the surface soil exposure pathway. The cover is proposed for those areas where DDT has been detected above the risk-based levels in the surface soil. The soil cover is primarily for the purpose of limiting the migration of contaminants into Garrison Slough and to prevent direct soil contact and ingestion by the base personnel and ecological receptors.

The primary components of the selected remedy are:

- Installation of a soil cover over the surface soil contamination to prevent direct contact by humans, animals, and surface water runoff into Garrison Slough.

- Removal of drums in the future, if it is determined that they are a continuing source of contamination.

- Monitoring of surface water, sediments, and aquatic organisms in this area, as required to verify effectiveness of the cover and monitoring of the groundwater to verify that levels remain below acceptable screening levels.

14.3.3 Source Area ST58 (OU 4)

Alternative 3, an in situ alternative consisting of bioventing/groundwater monitoring/institutional controls, has been determined to be the most appropriate remedy for source area ST58. This alternative will reduce the fuel source in the soils through degradation of fuel hydrocarbons, and will thus reduce the risk to human health and the environment sooner than with monitoring and institutional controls alone. At present, no proven method is known for removing lead from groundwater at a reasonable cost in a reasonable amount of time. However, a treatability test is being performed at another site at Eielson AFB to determine the fate and transport of lead and the most viable option for extraction and treatment, if warranted. Results from this test will be used to further evaluate lead remediation at ST58. Groundwater extraction/bioventing (Alternative 4) is not the preferred alternative because of its difficult implementation, and because biodegradation, dispersion, dilution, and adsorption appear to be effectively containing and degrading the contamination.

This alternative will reduce the long-term source of contamination by preferentially encouraging the removal of contaminants from the soil through bioventing. Groundwater action will consist of natural attenuation, institutional controls, and monitoring.

The primary components of the selected remedy are:

- Installation of a bioventing system to remove fuels contamination in the soil that poses a threat to groundwater through leaching. This system may include air injection within the upper part of the groundwater table and smear zone to volatilize and promote bioremediation of the contaminants. The system may also include air extraction if deemed appropriate.

- Institutional controls to prevent exposure to contaminated groundwater. In the event of base closure, any remaining contaminated sites will be addressed in accordance with CERCLA Section 120.

- Monitor the groundwater to evaluate contaminant levels and identify changes to contaminant plume configuration until remediation levels are achieved.

14.3.4 Source Area LF03/FT09 (OU 5)

Alternative 4, Soil Cover/Composite Cap/Groundwater Monitoring/Institutional Controls, has been determined to be the most appropriate remedy for source area LF03/FT09. FT09 is considered together with LF03, because FT09 is completely contained within LF03.

This alternative was chosen because it is believed that a soil cover/composite cap will be more protective of human health and the environment than will monitoring and institutional controls alone. Groundwater monitoring will be performed at the edge of the waste management area to detect any movement of contaminants.

The cap alternative focuses on eliminating the threat of direct contact with buried landfill debris, and on soil contamination and monitoring of groundwater at the edge of the waste management area to ensure that federal and state standards are met.

The primary components of the selected remedy are:

- For the portion of the landfill where disposal occurred before 1980, RCRA Part 264 is relevant and appropriate. Currently, no groundwater at the edge of the waste management area exceeds regulatory levels; the residual contamination poses a direct contact threat. A cover to address the direct contact threat will be installed and maintained in accordance with relevant and appropriate requirements of Part 264. Groundwater at the landfill will continue to be monitored, as appropriate, to verify that contaminant concentrations, if any, remain within acceptable screening levels.

- For the portion of the landfill where disposal occurred after 1980, RCRA Part 264 is applicable. The final cover will be constructed to: (1) provide long-term minimization of migration of liquids, (2) function with minimum maintenance, (3) promote drainage and minimize erosion, (4) accommodate settling and subsidence, and (5) have a permeability less than or equal to the natural subsoils present. Post-closure care, including maintenance and monitoring, will be conducted in accordance with 40 CFR 264.117 and 264.228(b).

- Institutional controls will be implemented to restrict land use. In the event of base closure, any remaining contamination will be addressed in accordance with CERCLA Section 120.

14.4 Costs of the Selected Remedies

The estimated costs of the selected remedies are presented in Table 14.2

Table 14.2. Summary of the Estimated Costs for Selected Remedies

Alternatives by Source Area	Capital Cost	Annual O&M	Present Worth(a)
Source Area DP44 (Battery Shop Leach Field)			
SVE Alternative			
SVE components		$65,000 (yrs 1-3)	
Groundwater monitoring components		$8,600 (yrs 1-30)	
Additional site investigation		0	
TOTAL(b)	$1,280,000		$1,600,000
Source Area WP45 (Photo Laboratory Building 1183) and SS57 (Fire Station Parking Lot Spill)			
Monitor Alternative			
TOTAL(b)	$5,300	$11,600 (yrs 1-30)	$180,000
Source Area SS61 (Vehicle Maintenance Building 3213)			
Monitor Alternative			
TOTAL(b)	$5,300	$10,100	$160,000
Source Area DP25 (E-6 Fuel Tank Sludge Burial Site)			
Monitor Alternative			
TOTAL(b)	$5,300	$13,100	$210,000
Source Area SS35 (Asphalt Mixing Area)			
Cover Alternative			
TOTAL(b)	$40,000	$0	$40,000
Source Area ST58 (Old Quartermaster Service Station)			
In Situ Alternative			
Bioventing components		$51,000 (yr 1)	
Groundwater monitoring components		$8,600 (yrs 1-30)	
TOTAL(b)	$170,000		$350,000
Source Area LF03 (Current Base Landfill) and FT09 (Fire Training Area)			
Cap Alternative			
Cover (soil) components		$5,000 (yrs 1-30)	
Cover (geosynthetic) components		$2,500 (yrs 1-30)	
Drainage components		$3,750 (yrs 1-30)	
Groundwater monitoring components		$14,600 (yrs 1-30)	
TOTAL(b)	$7,100,000		$7,500,000

(a) The present worth cost is based on a 5 percent interest rate over 30 years.
(b) TOTAL cost includes mobilization, contingencies, and other costs.

15.0 Statutory Determinations

The selected remedies meet the statutory requirements of Section 121 of CERCLA, as amended by SARA, and to the extent practicable, the National Contingency Plan. The evaluation criteria for compliance with these statutory requirements are discussed in this section.

15.1 Protection of Human Health and the Environment

The selected remedies protect human health and the environment through removal of the sources of groundwater contamination. Institutional controls will eliminate exposure to contaminated groundwater until state and federal standards are achieved. Groundwater monitoring will track the extent of contamination above the MCL. The selected remedy will reduce risks to within the 10^{-4} to 10^{-6} range for carcinogens and hazard indexes will be less than one. No unacceptable short-term risks or cross-media impacts, resulting from implementation of the remedy, are present that cannot be readily controlled.

15.2 Attainment of Applicable or Relevant and Appropriate Requirements of Environmental Laws

CERCLA specifies that remedial actions must attain standards that are defined by EPA and ADEC as applicable or relevant and appropriate requirements (ARARs) for Eielson AFB, unless a waiver is obtained. The selection process for remedial actions may also take into account the *to be considered* (TBC) criteria, if ARARs do not address a particular situation. These criteria may include nonenforceable criteria, advisories, or guidance issued by federal or state agencies that are not legally binding but are considered, if appropriate, in developing remedial action objectives and PRGs.

The selected remedies will comply with all substantive requirements for ARARs of federal and State of Alaska environmental and public health laws.

15.2.1 Applicable or Relevant and Appropriate Requirements

The remedy chosen for each set of source areas will comply with all action-, chemical-, and location-specific ARARs.

15.2.2 Chemical-Specific ARARs

The chemical-specific ARARs for remedial actions to be conducted at source areas in OUs 3, 4, and 5 are:

- Maximum contaminant levels (MCLs) and maximum contaminant level goals (MCLGs) established under the Safe Drinking Water Act for area groundwater that may be used as a drinking water supply (40 CFR 141 and 18 AAC 80) (see Table 15.1).
- Federal ambient water quality criteria (AWQC) established under the Clean Water Act for the protection of aquatic life in Garrison Slough and French Creek (see Table 15.1).

- Federal AWQC for the protection of human health from the consumption of fish from Garrison Slough and French Creek (see Table 15.1).

- Alaska water quality standards under 18 AAC 70 for groundwater, designated beneficial use Class (1)(A) for freshwater water supply, including the water quality standards for (1)(A)(i) drinking, culinary, and food processing; (1)(A)(ii) agriculture, including irrigation and stock watering; (1)(A)(iii) aquaculture; and (1)(A)(iv) industrial. At areas where the selected remedy is active remediation, treatment will continue until MCLs are consistantly attained. Natural attenuation is expected to meet the petroleum requirements of 18 AAC 70.

- Alaska water quality standards for fresh waters (i.e., fresh surface water), designated beneficial use Class (1)(A) for fresh water supply, Class (1)(B) for fresh water recreation, and Class (1)(C) for growth and propagation of aquatic life and wildlife. The surface water quality standards include those for (1)(A)(i) drinking, culinary, and food processing; (1)(A)(ii) agriculture, including irrigation and stock watering; (1)(A)(iii) aquaculture; and (1)(A)(iv) industrial; (1)(B)(i) contact recreation; (1)(B)(ii) secondary recreation; (1)(C) growth and propagation of fish, shellfish, other aquatic life, and wildlife (18 AAC 70.020).

- Alaska Oil Pollution Regulations (18 AAC 75)

  Under the Alaska Oil Pollution Regulations, responsible parties are required to clean up oil or hazardous releases. The U.S. Air Force has proposed a calculation of soil cleanup levels, based on the findings in the baseline risk assessment (U.S. Air Force 1995b) and a methodology using the EPA SESOIL and AT123D models (Anderson 1992). The proposed soil cleanup levels are based on protecting groundwater in accordance with drinking water standards and are specified in Table 15.2.

- Alaska Regulations for Leaking Underground Storage Tanks (18 AAC 78)

  Under this regulation, the regional supervisor may identify alternative cleanup standards based on the potential for leaching to groundwater. In accordance with this requirement, alternative soil cleanup standards have been calculated (Table 15.2) based on the findings in the baseline risk assessment (U.S Air Force 1995b) and a methodology using the EPA SESOIL and AT123D models (Anderson 1992). The soil cleanup levels are based on protecting groundwater in accordance with drinking water standards.

15.2.3 Location-Specific ARARs

The location-specific ARARs identified in the Draft RI for OUs 3, 4, and 5 include:

- designation of the underlying aquifer as a sole source aquifer
- flood plain restrictions
- wetland protection under the Clean Water Act.

Remedial action at source areas within OUs 3, 4, and 5 must consider remediation of contaminated groundwater. Because the aquifer has been identified, but not designated, by the state as the sole source of drinking water supply in the Eielson AFB area, prevention of further water quality deterioration and restoration of water quality to achieve state and federal water quality and drinking water standards are primary objectives of remediation.

Remedial action at source areas within a designated flood plain must be designed to avoid adverse effects, minimize potential harm, and restore and preserve natural and beneficial values of the flood plain (40 CFR 6).

None of the source areas within OUs 3, 4, and 5 contain designated wetlands protected under the Clean Water Act (USAF 1995a).

15.2.4 Action-Specific ARARs

Action-specific ARARs are technology- or activity-based requirements or limitations that relate to specific remedial actions. Potential action-specific requirements are identified in Table 15.2. Compliance with action-specific ARARs is evaluated as part of the detailed evaluation of alternatives conducted in the FS process.

Table 15.1. Chemical-Specific ARARs for Contaminants of Potential Concern

	Groundwater	Surface Water	
Chemical Compound	Drinking Water MCL (µg/L)	AWQC Aquatic Life Freshwater Chronic (µg/L)	AWQC Human Health Fish Consumption (µg/L)
Volatile Organic Compounds			
Benzene	5	5,300	40
Toluene	1,000	17,500	424,000
Ethylbenzene	700	32,000	3,280
Xylenes	10,000		
1,4-Dichlorobenzene	75	763	2,600
1,2-Dichloroethane	5		
cis-1,2-Dichloroethene	70	11,600[d]	1.85
trans-1,2-Dichloroethene	100	11,600[d]	3.2
Trichloroethene	5	21,900[b]	81[c]
Tetrachloroethylene	5	840	8.85
Vinyl Chloride	2		525
Semivolatile Organic Compounds			
DDT	-	1.1[d]	0.000024
Chlordane	2	0.0043	0.00048
Inorganic Compounds			
Lead	15[a]	3.2	
Silver	100[e]	0.12	

(a) EPA action level; MCL expired 12/07/92.

(b) Insufficient data to develop criterion. Value presented is lowest observed effect level.

(c) Criteria based on carcinogenicity (10^{-6} risk).

(d) Freshwater acute criterion; no freshwater chronic criterion exists for this compound.

(e) Secondary MCL.

Because some of the contaminants identified in soils and groundwater within OUs 3, 4, and 5 can be classified as RCRA hazardous wastes, RCRA requirements may be considered action-specific ARARs for those source areas where placement or disposal occurs.

15.2.5 Criteria To Be Considered for Protectiveness

In addition to ARARs, federal and state criteria, policy, and guidance have been considered in defining the appropriate level of protectiveness. The TBC criteria identified for source areas within OUs 3, 4, and 5 are discussed in the following subsections.

Several methods, including the MEPAS model, were evaluated for determining soil cleanup levels. Because of the limitations of using the MEPAS model for source areas with floating product or soil contamination that occurs primarily in the smear zone, it was decided that a simpler approach would probably provide more reliable results.

Table 15.2. Potential Action-Specific ARARs

Action	Requirement	Applicability	Reference
Capping Closure with waste in place	Placement of a cap over waste requires a cover designed and constructed to: (1) provide long-term minimization of liquid migration through the cap; (2) function with minimum maintenance; (3) promote drainage and minimize erosion of the cover; (4) accommodate settling so that the integrity of the cover is maintained; (5) have a permeability less than or equal to the permeability of the bottom liner.	RCRA hazardous waste placed at the site after November 1980 or placement of RCRA waste into another unit. For wastes placed before 1980; RCRA Part 264 is relevant and appropriate.	40CFR264.258(b) for waste piles 40CFR264.310(a) for landfills
	Eliminate free liquids. stabilize remaining waste	Applicable to land disposal of RCRA hazardous waste	40CFR264.228(a)(2)
	30-yr post-closure care and monitoring	Applicable to land disposal of RCRA hazardous waste	40CFR264.310
	Restrict post-closure use of property to prevent damage to the cover	RCRA hazardous waste	40CFR264.117(c)
	Prevent run on and run off from damaging the cover	RCRA hazardous waste	40CFR264.228(b) 40CFR264.310(b)
	Protect and maintain surveyed benchmarks used to locate waste cells	RCRA hazardous waste	40CFR264.310(b)
Discharge of treatment system effluent	Must comply with ambient water quality criteria and federally approved State water quality standards as appropriate	Point source discharge	40CFR122.44 18 AAC 70 18 AAC 80 18 AAC 72
Land disposal	Attain land disposal treatment standards before placing waste in a land disposal unit to comply with land ban restrictions	RCRA hazardous waste	40CFR268(Subpart D)
Treatment	Must comply with design and operating standards for treatment unit, that is, waste piles, land treatment, water treatment	RCRA hazardous waste	40CFR264.251 40CFR264.273 40CFR264.601
Vapor extraction	Total emissions are restricted under the base permit and the National Emission Standards for Hazardous Air Pollutants.	Air emission control equipment may be required because of the vapors extracted from the fuel layer.	18 AAC 50 40CFR61.93
Solid Waste	Includes requirements for disposal of treated soils that are solid waste.	Solid Waste Disposal	18 AAC 60
Source: *CERCLA Compliance with Other Laws Manual*, OSWER Directive 9234.1-01			

The generic leachate pathway soil cleanup levels were developed by the Oregon Department of Environmental Quality using the EPA SESOIL and AT123D models. The cleanup levels are designed to prevent contaminant levels in groundwater from exceeding a health-based safe drinking water level through the leachate pathway. It was decided that although these numbers are based on higher precipitation values than occur in the Fairbanks region, they would provide an adequate margin of safety for cleanup of soils at Eielson. The methodology is described in Appendix A of the FS. The calculated soil concentrations have been included in Table 15.3. However, it is expected that these levels will be refined, if other levels are found to be protective of groundwater and as more site-specific and better fate and transport data become available.

"RCRA ARARs: Focus On Closure Requirements," OSWER Directive 9234.2-04FS, October 1989, is a TBC when RCRA Subtitle C Part 264 is and ARAR.

Table 15.3. Alternative Soil Cleanup Levels Based on Leaching

Chemical Compound	Alternative Soil Cleanup Level (mg/kg)
Trichloroethylene	0.4
Benzene	0.1
Toluene	79
Ethylbenzene	140
Xylenes	760
Sources: Anderson (1992), EPA (1992)	

15.3 Cost-Effectiveness

The selected remedies are considered cost-effective for remediation of the contaminated soils and groundwater, because they have been determined to provide overall effectiveness proportionate to their costs and duration.

15.4 Use of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedies protect human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial actions, and are cost effective. The remedies use permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable and satisfy the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

15.5 Preference for Treatment as a Principal Element

For source areas DP44 and ST58, the selected remedy includes treatment to address the soil contamination which is the principal threat posed by conditions at the site.

For source areas WP45/SS57, ST56, SS61, DP25, SS35, and LF03/FT09, the selected remedy does not include treatment because the contamination does not meet the definition of a principal threat, as defined in the preamble to the NCP and the contamination can be reliably controlled in place.

16.0 Explanation of Significant Differences

CERCLA Section 117(b) requires an explanation of any significant changes from the preferred alternatives originally presented in the proposed plan. Based on recent sampling results, the selected remedy for source areas WP45/SS57 is different than that presented in the proposed plan. The new information indicates that another alternative from the proposed plan provides the best balance of tradeoffs among the alternatives with respect to the nine evaluation criteria.

16.1 Proposed Alternative

The proposed alternative for WP45/SS57 presented in the Proposed Plan for Operable Units 3, 4, 5, and Other Areas (May 1995) was Alternative #3: soil vapor extraction (SVE)/groundwater monitoring and institutional controls for WP45, and bioventing/groundwater monitoring and institutional controls for SS57. SVE was chosen for WP45 because it is an effective method of remediation for solvents in unsaturated soils. It was believed that SVE would reduce the risk to human health and the environment sooner than with monitoring and institutional controls alone. Bioventing was the preferred alternative for SS57, because it may be an effective method for treating the fuel-related contaminants in the smear zone, where most of the contamination had been found. These proposed alternatives were based primarily on information presented in the OU 3, 4, and 5 Remedial Investigation, the Baseline Risk Assessment, and the Feasibility Study (U.S. Air Force 1995a, 1995b, and 1995c).

16.2 Significant Changes

The selected remedy for both sites WP45 and SS57 has been changed to Alternative #2: groundwater monitoring and institutional controls.

16.3 Reason for Change

An independent study of natural attenuation by Utah Water Research Laboratory (UWRL), Utah State University, has been conducted concurrently with the remedial investigation at WP45/SS57. A meeting was held 6 July 1995, during which UWRL presented their findings and modeling of site data collected at WP45/SS57. The soil and groundwater contamination exists at this site in the form of low-level sorbed species and dissolved contaminant mass. Currently, no evidence of residual dense non-aqueous phase liquid (DNAPL) is present within the source area at the site; it also does not appear that any residual fuel material exists in the form of light nonaqueous phase liquid (LNAPL). The contamination is adsorbed and contained or in a dissolved phase and not accessible for source removal or treatment. UWRL focused its study on evaluating the current extent of the dissolved TCE plume, investigating evidence of TCE degradation existing throughout the site in the form of anaerobic dechlorination intermediate products, and evaluating the likelihood of biological mediated reactions based on mass balance estimates and known stoichiometric relationships for these anaerobic transformation processes.

UWRL field data collection confirmed earlier findings reported by PNL. Low levels of soil contamination (< 1 ppm TCE in all samples), an apparently contained groundwater plume (particularly benzene), no free product, and no vinyl chloride detected through DCE was found to be present. New findings include further evidence of TCE anaerobic dechlorination with ethylene and large distribution of DCE product, significantly lower BTEX than previously reported, and rapid transportation of contaminants in the immediate vicinity of monitoring well 45MW08 (suspected source area).

The relative rate and extent of contaminant migration was evaluated through the use of a conventional 3-dimensional advective/dispersive groundwater model that incorporates groundwater flow, contaminant sorption, and contaminant degradation to describe the downgradient movement within the shallow aquifer over time. Model parameters that were not available or measured at the site were estimated using representative literature values.

The results of the UWRL study suggest that groundwater movement from this site is relatively slow (approximately 18 m/yr pore water velocity, with approximately 6 m/yr retarded TCE groundwater velocity based on measured field data). Additionally, with approximately 9 kg of TCE mass apparently lost in the aquifer over a 2-year monitoring period, it appears that TCE degradation is occurring at a first order degradation rate of approximately 0.00027/d (0.027%/d), yielding a TCE half life of approximately 7 years. With these values of contaminant velocity, apparent degradation rate, and an estimated source configuration based on model calibration, the remaining source of TCE contamination is predicted to be exhausted in another 7 years, with the subsequent groundwater plume generated from this source being attenuated within the aquifer to below regulatory limits of 5 μg/L within 70 years, and approximately 500 m of the source (Figures 16.1 and 16.2). Comparatively, it was estimated that by implementing SVE, coupled with bioventing, groundwater monitoring, and institutional controls, soils at WP45/SS57 would attain ARARs within 1 to 4 years, and groundwater would take more than 100 years to attain MCLs (U.S. Air Force 1995c). The data presented by UWRL indicates that active remediation of source areas WP45/SS57 will not significantly increase the rate of contaminant degradation from that now occurring naturally.

UWRL also evaluated a source removal scenario. Figures 16.3 and 16.4 graphically show the response of the dissolved TCE groundwater plume over time to complete source removal at source area WP45/SS57. At Δt - 60 years (that is, 60 years after source removal) the TCE plume centerline concentration is still predicted to be above its current MCL 5 μg/L. TCE centerline concentrations would drop below the MCL for Δt - 70 years. At Δt - 70 years, the maximum centerline concentration was predicted to be 3 μg/L at a distance of 430 to 450 m downgradient from the source. These results, along with the estimate of remaining source lifetime, suggest that source removal alone would be expected to reduce the lifetime of the TCE plume by only approximately 7 years, or 10%, indicating that source removal would not be an effective approach for expediting remediation at source areas WP45/SS57.

In summary, the findings presented by UWRL support several conclusions at WP45/SS57. It is apparent the BTEX plume is contained (see Figures 16.5 and 16.6). The TCE groundwater plume has reached steady-state conditions, and plume containment and TCE degradation are observed (see Figures 16.7 through 16.10). A limited extent of containment distribution was found near the source areas. SVE and bioventing would have limited effectiveness in comparison with the rate of degradation achieved by natural processes.

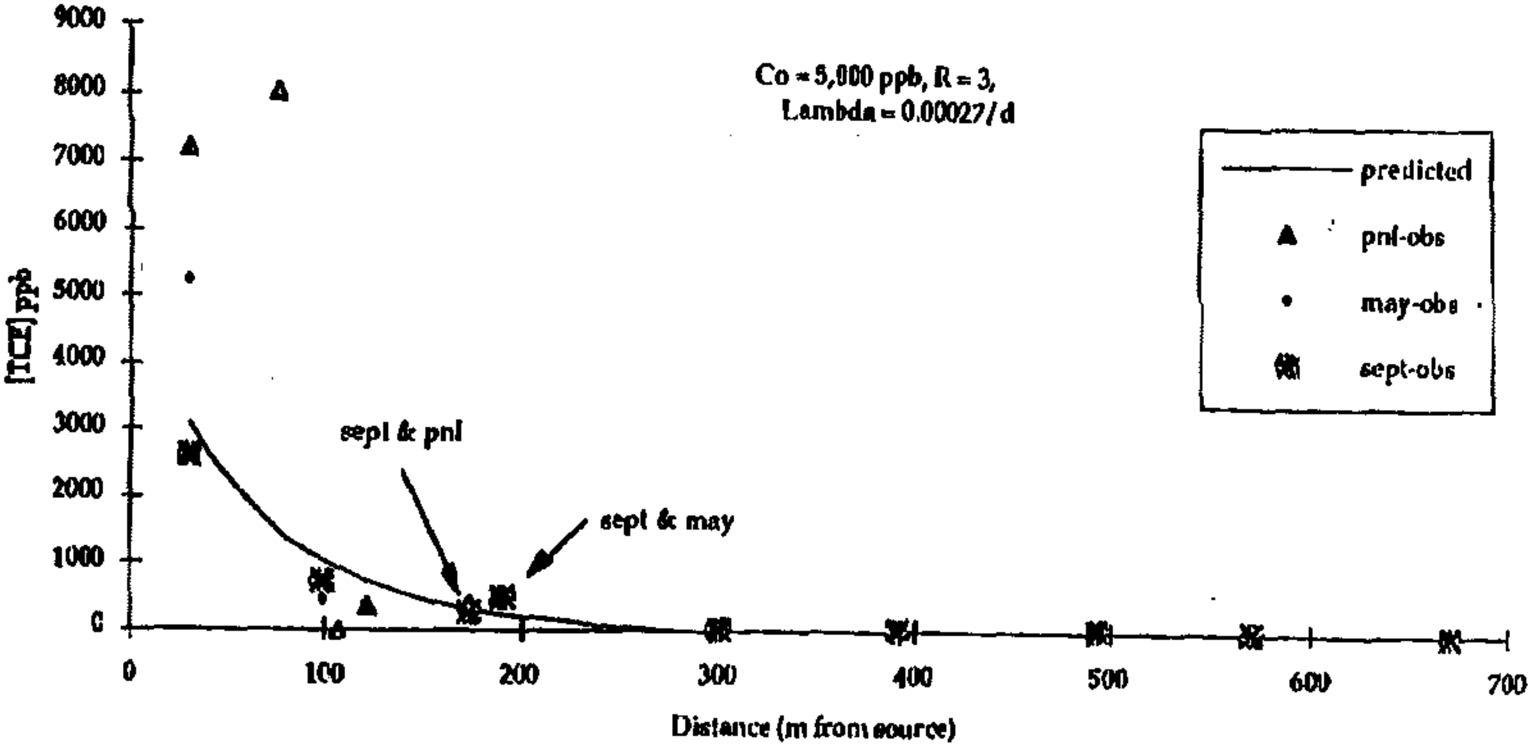


Figure 16.1. Simulated TCE plume centerline concentrations using input parameter values minimizing the mean square error (MSE).

Source area Y dimension is 70 m and total simulation time is 40 years. Observed TCE centerline concentration data collected from source areas WP45/SS57 by PNL in August to September 1992 and UWRL on May to September 1994 are also included for comparison purposes.

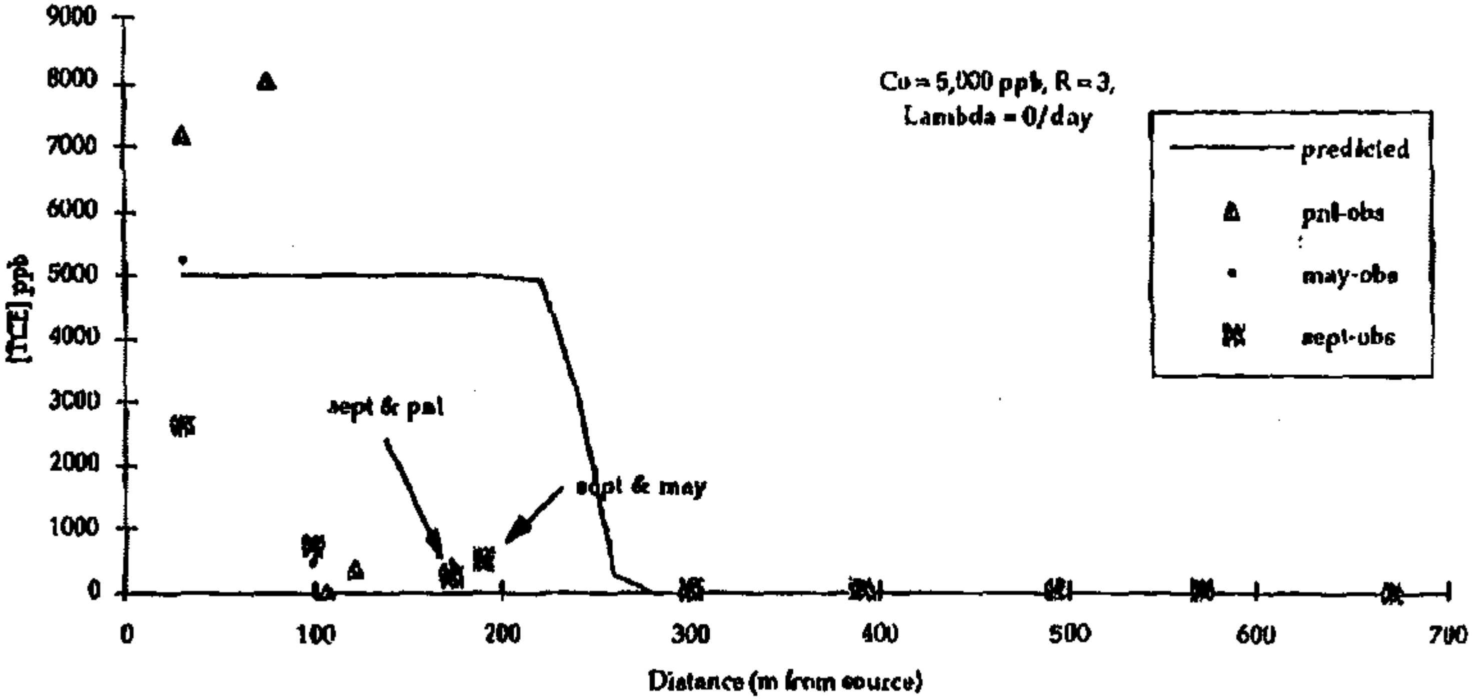


Figure 16.2. Simulated TCE plume centerline concentrations using input parameter values minimizing the mean square error (MSE), but with no degradation (λ = 0/day).

Source area Y dimension is 70 m and total simulation time is 40 years. Observed TCE centerline concentration data collected from source areas WP45/SS57 by PNL in August to September 1992 and UWRL on May to September 1994 are also included for comparison purposes.

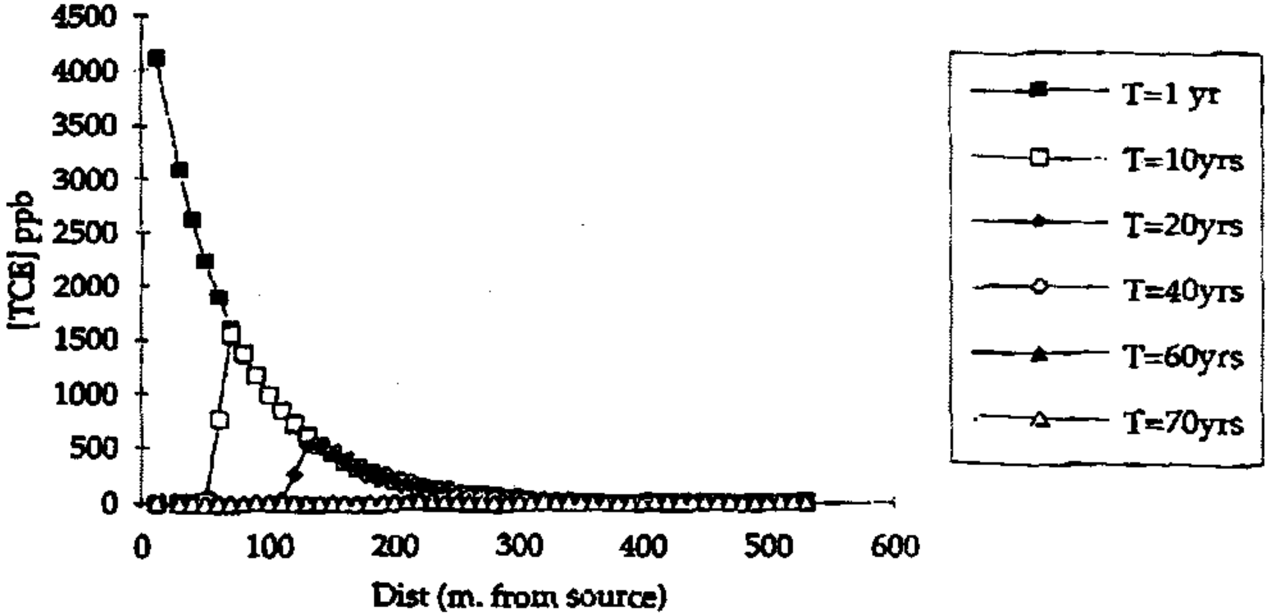


Figure 16.3. Simulated TCE plume centerline concentrations using input parameter values utilizing the calibrated model for source areas WP45/SS57, with the source removal scenario at T = 0 years.

Simulation times from T = 1 to 70 years. Source area Y dimension is 70 m by 40 m.

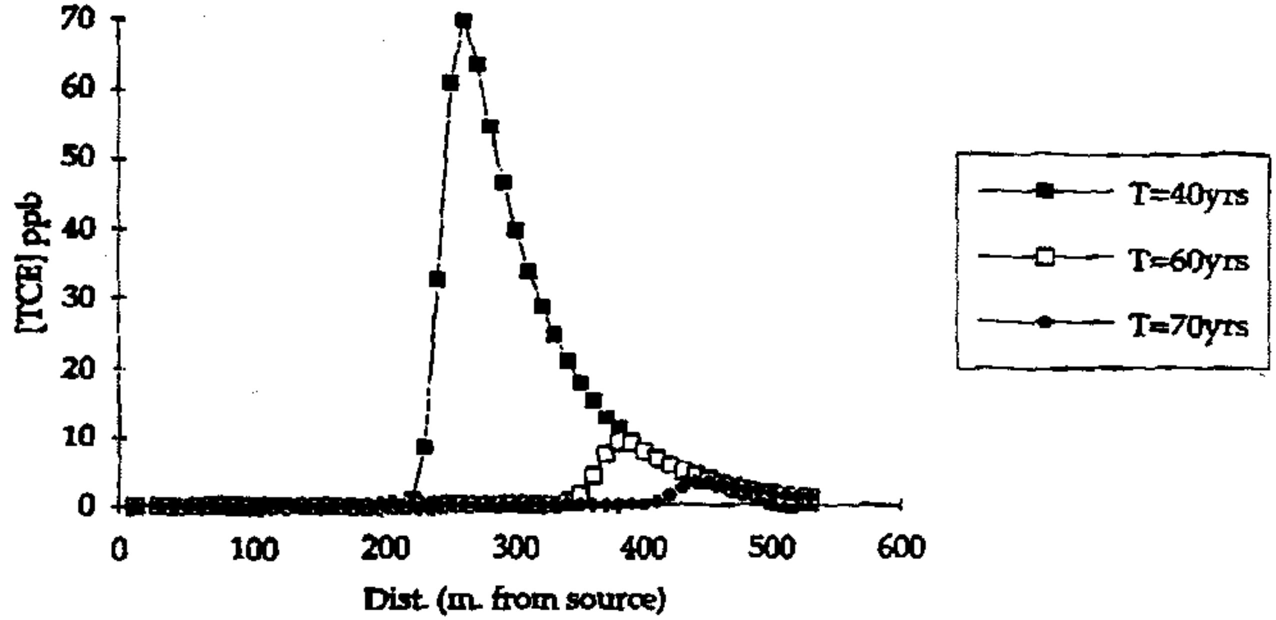


Figure 16.4. Simulated TCE plume centerline concentrations using input parameter values utilizing the calibrated model for source areas WP45/SS57, with the source removal scenario at T = 0 years.

Simulation times from T = 40 to 70 years. Source area Y dimension is 70 m by 40 m.

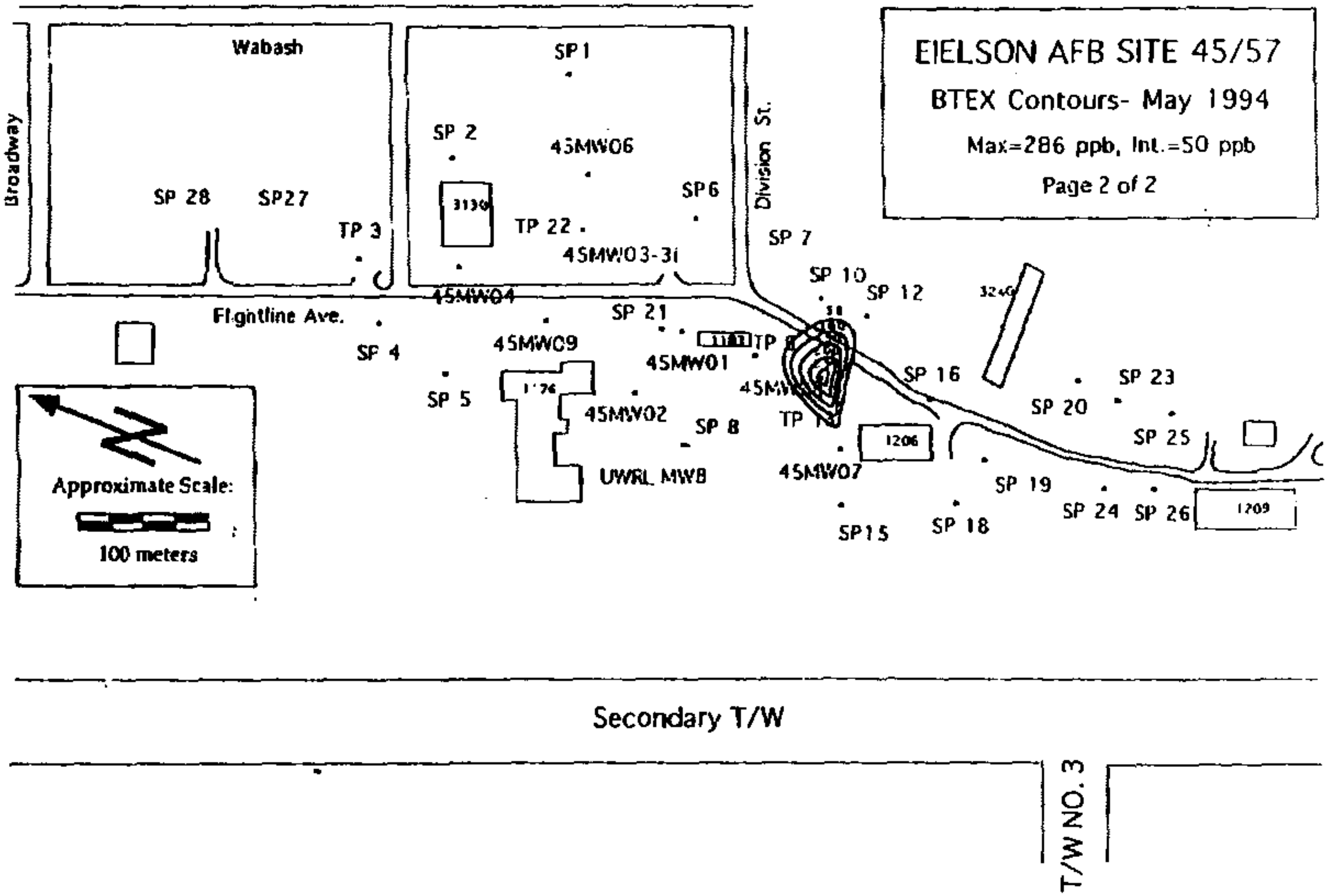


Figure 16.5. BTEX Contours, Eielson AFB Source Areas WP45/SS57, May 1994.

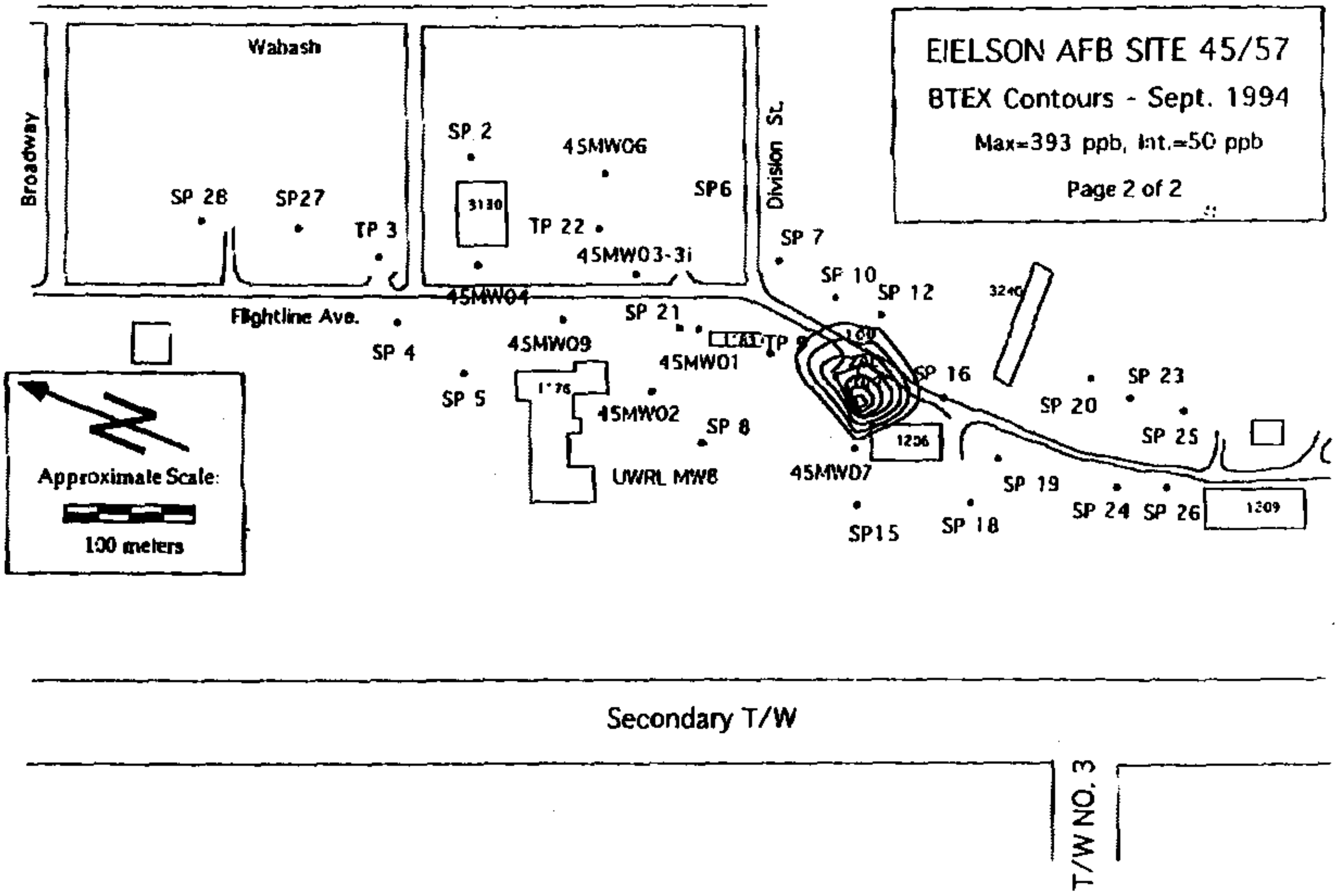


Figure 16.6. BTEX Contours, Eielson AFB Source Areas WP45/SS57, September 1994.

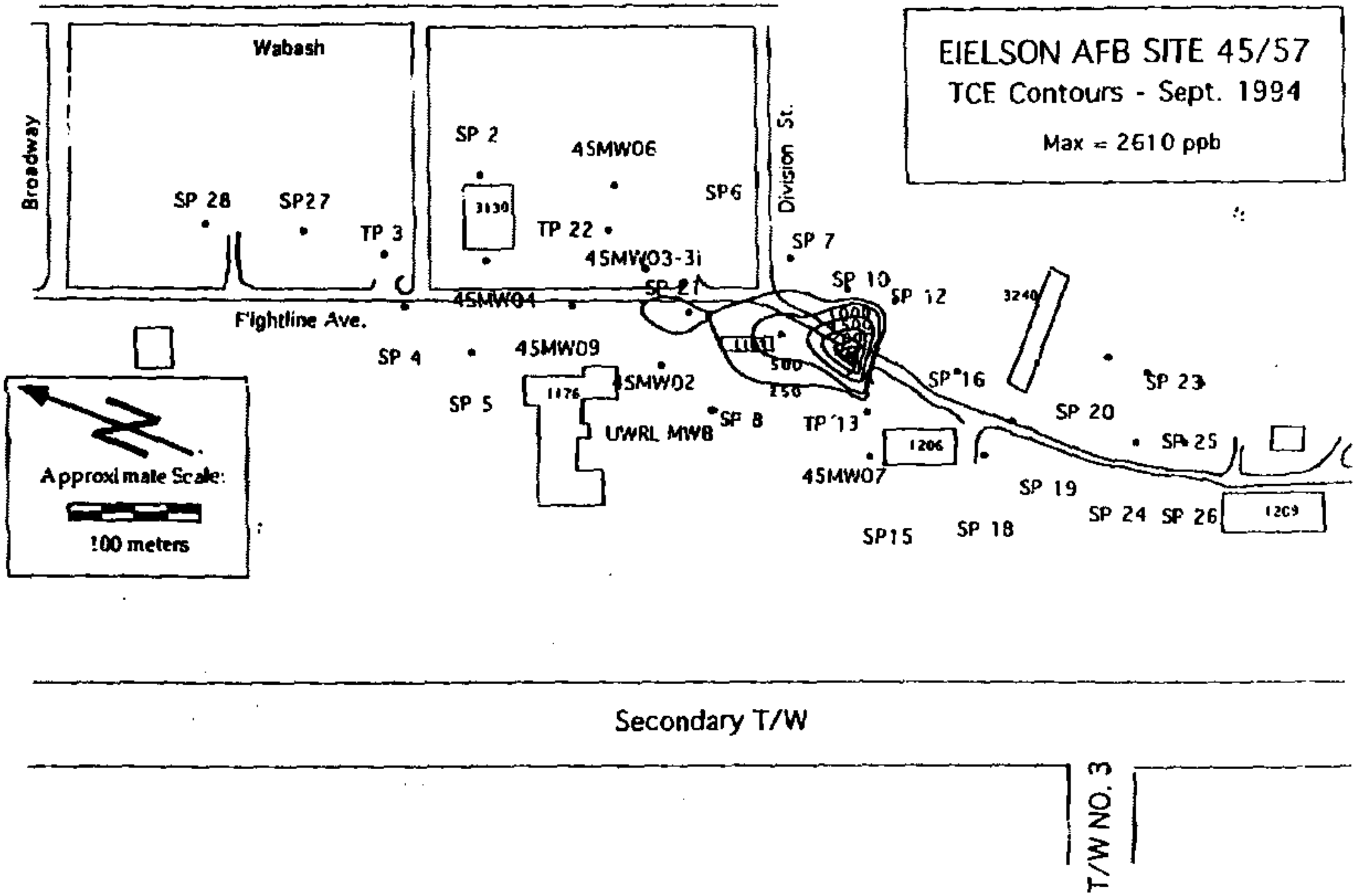


Figure 16.7. TCE Contours, Eielson AFB Source Areas WP45/SS57, September 1994.

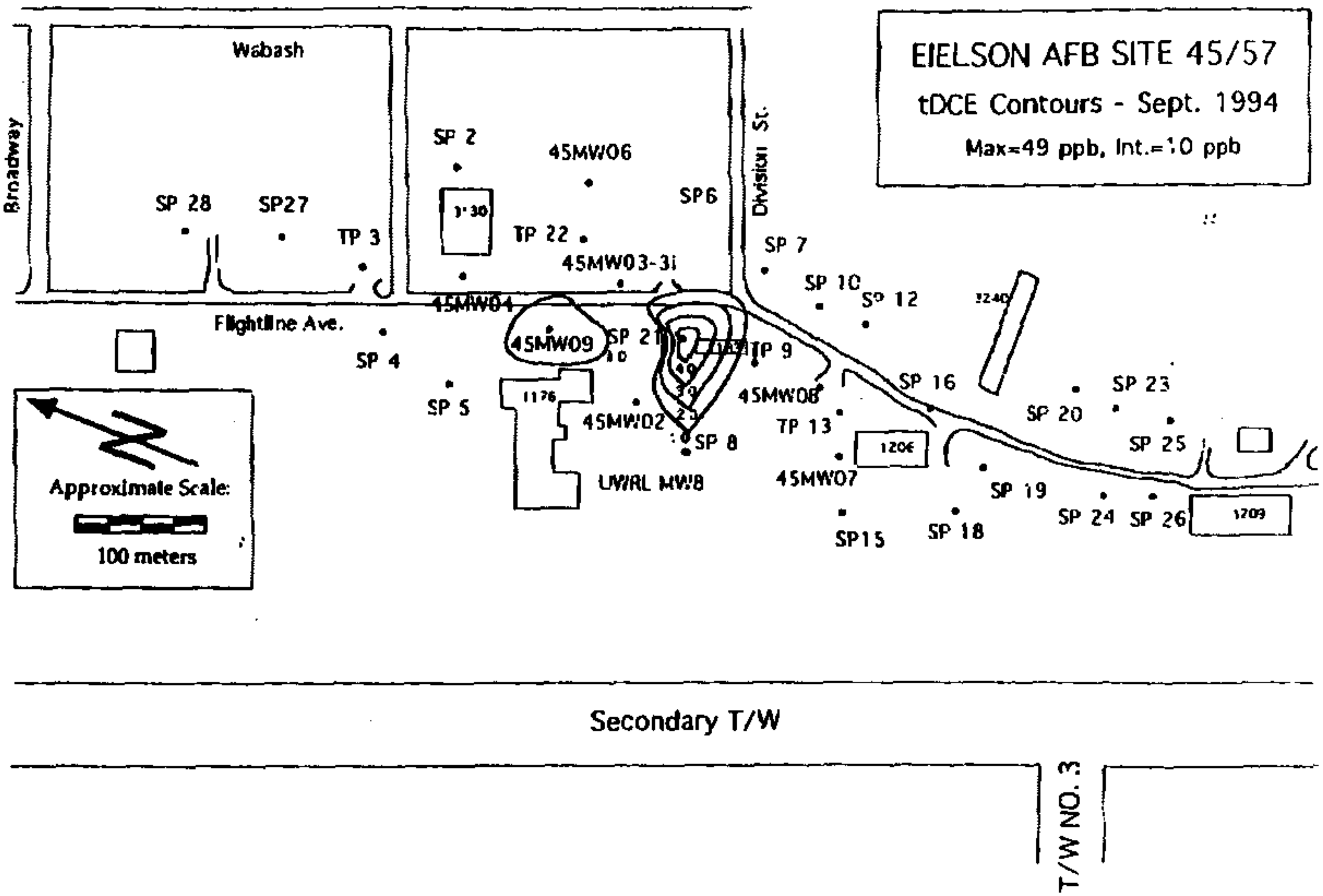


Figure 16.8. tDCE Contours, Eielson AFB Source Areas WP45/SS57, September 1994.

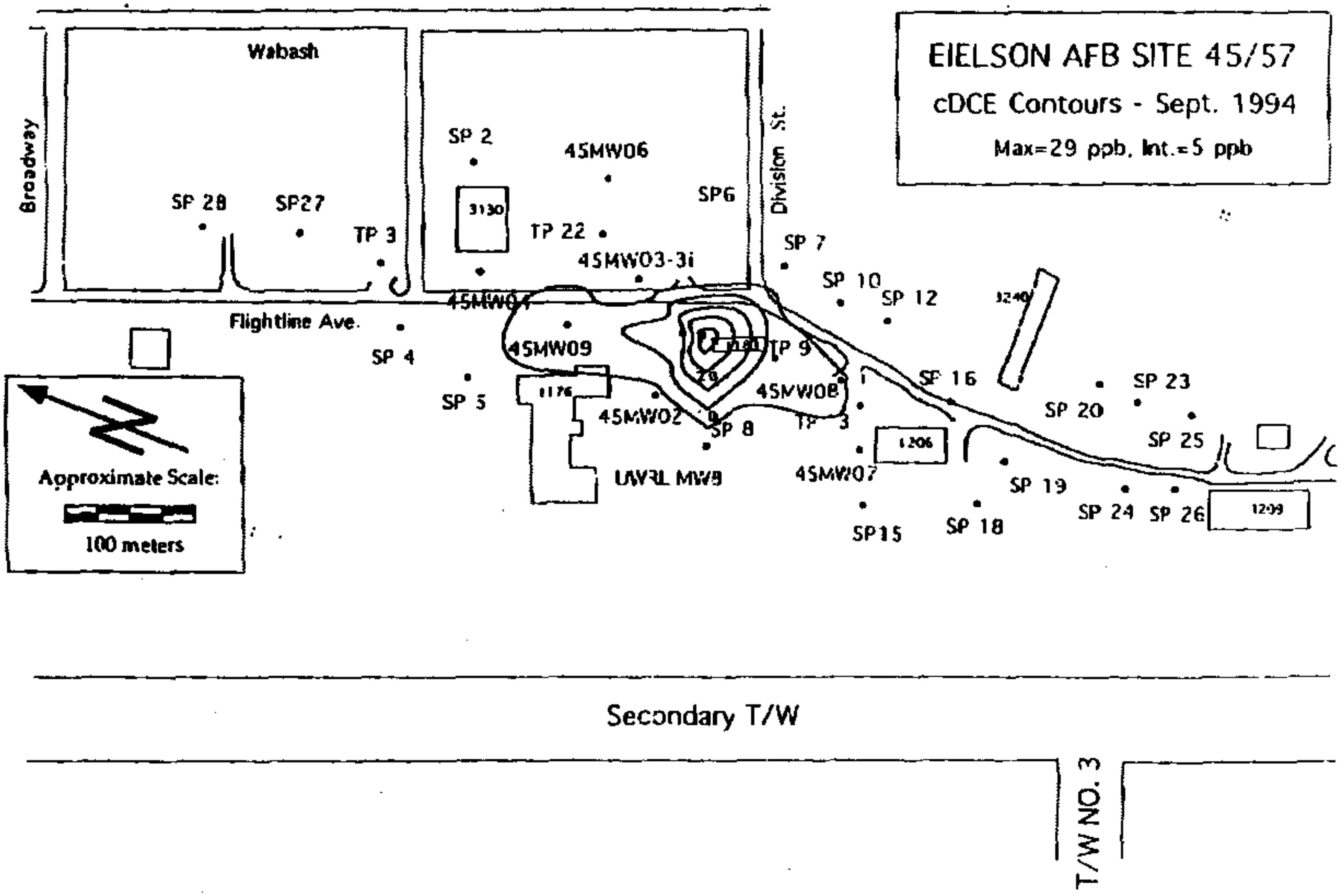


Figure 16.9. cDCE Contours, Eielson AFB Source Areas WP45/SS57, September 1994.

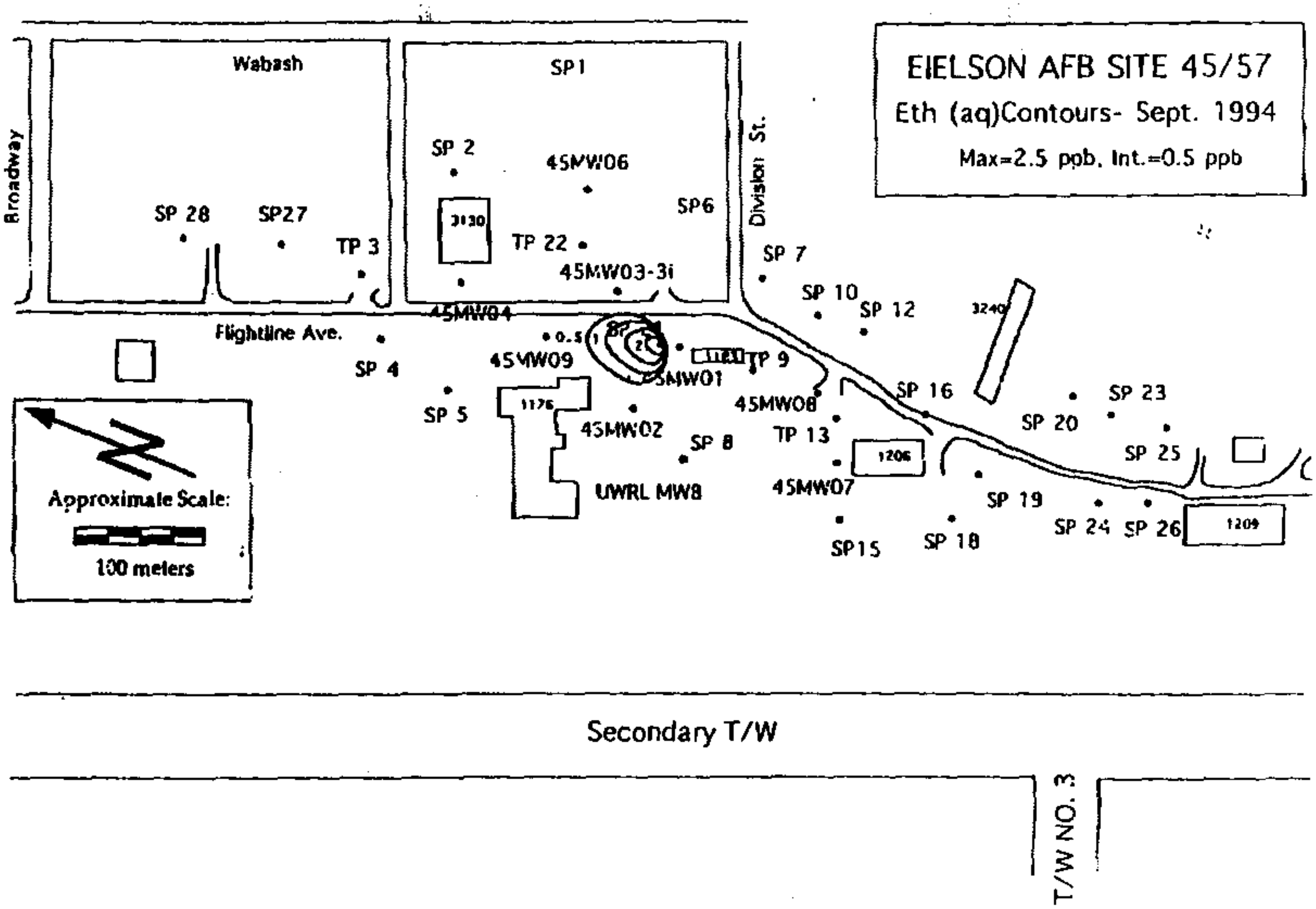


Figure 16.10. Eth (aq) Contours, Eielson AFB Source Areas WP45/SS57, September 1994.

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Eielson Air Force Base
Operable Units 3, 4, 5, and Other Areas
Record of Decision

Responsiveness Summary

A. OVERVIEW

The proposed cleanup alternatives considered by the U.S. Air Force, Alaska Department of Environmental Conservation (ADEC), and U.S. Environmental Protection Agency (EPA) were presented to the public in a proposed plan (U.S. Air Force 1995d) and discussed in a public meeting on 31 May 1995. This plan proposed the preferred alternative to address contamination in the soil and groundwater at Operable Units 3, 4, 5, and other areas. The preferred alternative restricts groundwater use in the contaminated areas through institutional controls. The controls will remain in effect as long as the contamination persists.

Generally, public comments supported the plan as the best compromise among the clean up options.

These sections follow:

- Background on Community Development
- Summary of the Comments Received During the Public Comment Period and USAF Responses
  - Part I: Summary and Response to Local Community Concerns
  - Part II: Response to Specific Technical and Legal Questions
- Remaining Concerns

B. BACKGROUND ON COMMUNITY INVOLVEMENT

Prior to the addition of Eielson AFB to the EPA National Priority List in 1989, the community was offered little opportunity for involvement in environmental activity. From 1982 until 1989, the USAF used the Installation Restoration Program (IRP) to identify potential contaminated areas and investigate what remedial actions might be required. This process was purely technical and did not evaluate community concerns in the decision-making process. However, after signing a Federal Facility Agreement with the State of Alaska and the EPA in 1991, the Air Force began its Superfund clean up program, which does include extensive community involvement.

A technical Review Committee (TRC), established in 1992, included three representatives from the community (selected by local officials and the University of Alaska Chancellor), industry representatives, and environmental representatives. Many of the TRC participants are members of the professional public. The TRC was converted to a Restoration Advisory Board (RAB) in the Spring of 1995. Three community representatives were selected as RAB co-chairpersons, one each from the communities of Salcha, Moose Creek, and North Pole, Alaska. The RAB met on April 27, 1995 to review OU 3, 4, and 5 information and again on 8 June 1995 during the comment period.

The proposed plan and the public meeting for OU 3, 4, and 5 were advertised twice in each of two local newspapers. In addition, more than 3500 copies of this notice were added as an insert in the base newspaper and delivered to every home in the Eielson AFB housing area on May 19, 1995. Proposed plans were mailed to more than 150 people on the clean up mailing list on May 16, 1995. In addition, copies of the plan were delivered to various information repositories, the Alaska Department of Fish and Game, North Pole City Hall, Moose Creek Fire Department, and several local stores and businesses. Flyers were placed on store bulletin boards in the Moose Creek and North Pole communities.

The Administrative Record is available for public review at:

- Elmer E. Rasmuson Library (Archives Section)
  Alaska and Polar Regions Department
  University of Alaska Fairbanks
  Fairbanks, Alaska 99775
  (907)-474-6594

The Index of Administrative Record Documents only, is available at:

- Eielson Air Force Base Library
  3340 Central Ave., Suite 1
  Eielson Air Force Base, Alaska 99720-2150
  (907)-377-3174

- North Pole Library
  601 Snowman Lane
  North Pole, Alaska 99705
  (907)-488-6101

Information is also available at the Information Repositories at:

- Environmental Management Office
  354 CES/CEVR
  2258 Central Ave., Suite 1
  Eielson Air Force Base, Alaska 99702-2225
  (907)-377-1164, Mike Raabe

- Noel Wien Library
  1215 Cowles Street
  Fairbanks, Alaska 99701
  (907)-459-1020

C. SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND USAF RESPONSES

The public comment period on the Operable Unit 3, 4, and 5 Proposed Plan extended from May 18 through June 17, 1995. Comments received during that period are summarized in Parts I and II. Part I addresses nontechnical concerns; Part II responds to technical and legal questions. Each part is grouped by similar topics.

PART I - Summary and Response to Local Community Concerns

- **Topic**: Environmental Questions
- **Public Comment**: One person wanted to know how to get information on clean up work at Eielson, and another asked to be added to the mailing list. A third caller asked for information about source area LF04.
- **USAF Response**: The Air Force provided fact sheets on work opportunities and how to be considered for this clean up work at Eielson. The mailing list was updated to include the names of those people interested in the environmental clean up work at Eielson Air Force Base. A package of information from the Administrative Record on LF04 was mailed to the interested person.

PART II - Response to Specific Technical and Legal Questions

- **Topic**: Alternatives Selection
- **Public Comment**: One person supported the cold mix asphalt process that was used to resurface roads on base with materials recovered from source area SS39 in OU 4. The person commented this procedure should be considered for any diesel-contaminated soil, or any other application where a waste material can be treated and recycled into a useful product, instead of being thrown away.
- **USAF Response**: The Eielson clean up team appreciates this technology, as demonstrated by having already used cold mix asphalt paving in local projects. The team will continue to consider this method for future situations where this technology could feasibly be applied. The selected remedies for source areas in OUs 3, 4, and 5 do not include excavation and disposal for any petroleum contaminated soil; therefore, this technology to recycle contaminated soil is not applicable for these areas.

D. REMAINING CONCERNS

- **Topic**: Transporting Contaminated Soils Through Moose Creek
- **Public Comment**: One person was concerned that dust from contaminated soil and heavy traffic to transport the soil could create a risk for residents in Moose Creek. The soil is being transported to an incinerator in Moose Creek. The caller said residents are worried about the potential for an accident due to the poor condition of the narrow roadway between the base and the treatment facility. The caller requested the trucks be diverted to a back road that leads directly from the base to the incinerator and that avoids populated areas.
- **USAF Response**: The comment was routed through the RAB military co-chairman to the Support Group commander. The contractor was advised of the safety concerns expressed by the area residents. The trucks were directed to drive on the new Richardson Highway, this eliminating excessive traffic in the Moose Creek community. The issue was also addressed at the RAB meeting in North Pole on 8 June 1995.

Attachment A: Community Relations Activities at Eielson Air Force Base, Alaska

COMMUNITY RELATIONS ACTIVITIES
at Eielson Air Force Base, Alaska

1982	Eielson conducts records search and interviews to identify environmental problem areas under the Air Force Installation Restoration Program.
1983-1989	Eielson AFB investigations identify contamination.
Nov. 1989	Eielson AFB listed on EPA National Priority List for priority cleanup.
May 1991	Eielson AFB signs Federal Facility Agreement with EPA and ADEC.
Oct. 1991	Eielson AFB holds first public meeting to announce Superfund cleanup.
Oct. 1991	Public Relations Plan released.
Jan. 1992	Administrative Record established at University of Alaska Fairbanks library.
May 1992	Technical Review Committee established, including three community representatives from North Pole, Fairbanks, and University of Alaska Fairbanks.
Jun. 1992	Public meeting on Operable Unit 1B proposed plan.
Dec. 1992	Public meeting on Record of Decision for OU-1B (signed in Sep. 1992).
1992-1993	Interviews with 40 community members to update Community Relations Plan.
Jan. 1993	International Bioventing Symposium held at Eielson AFB to assess innovative technology.
Sep. 1993	Video documentary on base environmental program released; aired on base TV.
Nov. 1993	Public meeting on OU-2 Proposed Plan and SER Phase 1 recommendations.
Apr. 1994	Public meeting on OU-6 Proposed Plan and Removal Actions for three sources.
Jun. 1994	Public meeting on OU-1 Proposed Plan and Removal Actions for three sources.
Apr. 1995	Restoration Advisory Board established to include community co-chairs.
May 1995	Public meeting on OU-3,4,5 Proposed Plan and other areas.

In October 1991 at the first environmental clean up public meeting, Eielson AFB released its Community Relations Plan. In subsequent public meetings from 1992 to 1995, Eielson AFB presented the Proposed Plans for Operable Unit 1 and 1B; Operable Unit 2; Operable Units 3, 4, and 5; and Operable Unit 6, and discussed the Source Evaluation Report areas.

From 1992 through 1993, surveys and interviews of more than 100 community residents were used to update the Community Relations Plan. Eielson AFB prepared fact sheets on such topics as water quality, Technical Assistance Grants, Information Repositories, clean up technologies, and work opportunities to keep the public advised on clean up activity. These publications are available at the information repositories, or from the Eielson AFB community relations point of contact.

Appendix A

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2	DP25	Water	1992	0,0,0-Triethyl phosphorothioate	10	µg/L	1	–	–	–	
3	DP25	Water	1992	0,0-Diethyl 0-2-pyrazinyl phosphorothioa	10	µg/L	1	–	–	–	
4	DP25	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	9	–	–	–	
5	DP25	Water	1993	1,1,1-Trichloroethane	5	µg/L	13	–	–	–	
6	DP25	Water	1993	1,1,2-Trichloroethane	0.5	µg/L	9	–	–	–	
7	DP25	Water	1993	1,1,2-Trichloroethane	5	µg/L	13	–	–	–	
8	DP25	Water	1992	1,1-Dichloroethane	1	µg/L	9	–	–	–	
9	DP25	Water	1993	1,1-Dichloroethane	5	µg/L	13	–	–	–	
10	DP25	Water	1992	1,2,4-Trichlorobenzene	10	µg/L	1	–	–	–	
11	DP25	Water	1992	1,2-Dichlorobenzene	10	µg/L	1	–	–	–	
12	DP25	Water	1992	1,2-Dichloroethane	0.5	µg/L	9	–	–	–	
13	DP25	Water	1993	1,2-Dichloroethane	5	µg/L	13	–	–	–	
14	DP25	Water	1993	1,2-Dichloroethene (total)	1.2	µg/L	13	–	–	–	
15	DP25	Water	1992	1,3-Dichlorobenzene	10	µg/L	1	–	–	–	
16	DP25	Water	1992	1,4-Dichlorobenzene	2	µg/L	10	–	–	–	
17	DP25	Water	1993	1,4-Dichlorobenzene	5	µg/L	13	–	–	–	
18	DP25	Water	1992	1,4-Naphthoquinone	10	µg/L	1	–	–	–	
19	DP25	Water	1993	1-Butanol	N/A	µg/L	13	–	–	–	
20	DP25	Water	1992	1-Naphthylamine	10	µg/L	1	–	–	–	
21	DP25	Water	1992	2,3,4,6-Tetrachlorophenol	10	µg/L	1	–	–	–	
22	DP25	Water	1992	2,4,5-Trichlorophenol	10	µg/L	1	–	–	–	
23	DP25	Water	1992	2,4,6-Trichlorophenol	10	µg/L	1	–	–	–	
24	DP25	Water	1992	2,4-Dichlorophenol	10	µg/L	1	–	–	–	
25	DP25	Water	1992	2,4-Dimethylphenol	10	µg/L	1	–	–	–	
26	DP25	Water	1992	2,4-Dinitrophenol	50	µg/L	1	–	–	–	
27	DP25	Water	1992	2,4-Dinitrotoluene	10	µg/L	1	–	–	–	
28	DP25	Water	1992	2,6-Dichlorophenol	10	µg/L	1	–	–	–	
29	DP25	Water	1992	2,6-Dinitrotoluene	10	µg/L	1	–	–	–	
30	DP25	Water	1992	2-Acetylaminofluorene	10	µg/L	1	–	–	–	
31	DP25	Water	1993	2-Butanone	100	µg/L	13	–	–	–	
32	DP25	Water	1992	2-Chloronaphthalene	10	µg/L	1	–	–	–	
33	DP25	Water	1992	2-Chlorophenol	10	µg/L	1	–	–	–	
34	DP25	Water	1992	2-Methylnaphthalene	10	µg/L	1	–	–	–	
35	DP25	Water	1992	2-Methylphenol	10	µg/L	1	–	–	–	
36	DP25	Water	1992	2-Naphthylamine	10	µg/L	1	–	–	–	
37	DP25	Water	1992	2-Nitroaniline	50	µg/L	1	–	–	–	
38	DP25	Water	1992	2-Nitrophenol	10	µg/L	1	–	–	–	
39	DP25	Water	1992	3,3'-Dichlorobenzidine	20	µg/L	1	–	–	–	
40	DP25	Water	1992	3,3'-Dimethylbenzidine	10	µg/L	1	–	–	–	
41	DP25	Water	1992	3-Methylcholanthrene	10	µg/L	1	–	–	–	
42	DP25	Water	1992	3-Nitroaniline	50	µg/L	1	–	–	–	
43	DP25	Water	1992	4,6-Dinitro-2-methylphenol	50	µg/L	1	–	–	–	
44	DP25	Water	1992	4-Aminobiphenyl	10	µg/L	1	–	–	–	
45	DP25	Water	1992	4-Bromophenylphenyl ether	10	µg/L	1	–	–	–	
46	DP25	Water	1992	4-Chloro-3-methylphenol	20	µg/L	1	–	–	–	
47	DP25	Water	1992	4-Chloroaniline	20	µg/L	1	–	–	–	
48	DP25	Water	1992	4-Chlorophenylphenyl ether	10	µg/L	1	–	–	–	
49	DP25	Water	1993	4-Methyl-2-pentanone	50	µg/L	13	–	–	–	
50	DP25	Water	1992	4-Methylphenol	10	µg/L	1	–	–	–	
51	DP25	Water	1992	4-Nitroaniline	50	µg/L	1	–	–	–	
52	DP25	Water	1992	4-Nitrophenol	50	µg/L	1	–	–	–	
53	DP25	Water	1992	4-Nitroquinoline-1-oxide	10	µg/L	1	–	–	–	
54	DP25	Water	1992	5-Nitro-o-toluidine	10	µg/L	1	–	–	–	
55	DP25	Water	1992	7,12-Dimethylbenz(a)anthracene	10	µg/L	1	–	–	–	
56	DP25	Water	1992	Acenaphthene	10	µg/L	1	–	–	–	
57	DP25	Water	1992	Acenaphthylene	10	µg/L	1	–	–	–	
58	DP25	Water	1993	Acetone	10	µg/L	13	3	5.1	15	25M02
59	DP25	Water	1992	Acetophenone	10	µg/L	1	–	–	–	
60	DP25	Water	1992	Alpha,alpha-dimethylphenethylamine	10	µg/L	1	–	–	–	
61	DP25	Water	1992	Aniline	10	µg/L	1	–	–	–	
62	DP25	Water	1992	Anthracene	10	µg/L	1	–	–	–	
63	DP25	Water	1992	Antimony	200	µg/L	5	–	–	–	
64	DP25	Water	1992	Aramite	10	µg/L	1	–	–	–	
65	DP25	Water	1992	Arsenic	5	µg/L	2	1	31	31	25B-1
66	DP25	Water	1992	Barium	N/A	µg/L	5	5	89	210	25B-1
67	DP25	Water	1992	Benzene	2	µg/L	9	3	53	63	25B-1
68	DP25	Water	1993	Benzene	5	µg/L	13	3	20	1.70E+03	25B-16
69	DP25	Water	1992	Benzo(a)anthracene	10	µg/L	1	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
70	DP25	Water	1992	Benzo(a)pyrene	10	µg/L	1	–	–	–	
71	DP25	Water	1992	Benzo(b)fluoranthene	10	µg/L	1	–	–	–	
72	DP25	Water	1992	Benzo(ghi)perylene	10	µg/L	1	–	–	–	
73	DP25	Water	1992	Benzo(k)fluoranthene	10	µg/L	1	–	–	–	
74	DP25	Water	1992	Benzyl alcohol	20	µg/L	1	–	–	–	
75	DP25	Water	1992	Beryllium	3	µg/L	5	–	–	–	
76	DP25	Water	1992	Bis(2-chloroethoxy)methane	10	µg/L	1	–	–	–	
77	DP25	Water	1992	Bis(2-chloroethyl) ether	10	µg/L	1	–	–	–	
78	DP25	Water	1992	Bis(2-chloroisopropyl) ether	10	µg/L	1	–	–	–	
79	DP25	Water	1992	Bis(2-ethylhexyl) phthalate	10	µg/L	1	–	–	–	
80	DP25	Water	1992	Bromide	500	µg/L	2	–	–	–	
81	DP25	Water	1992	Butylbenzylphthalate	10	µg/L	1	–	–	–	
82	DP25	Water	1992	Cadmium	10	µg/L	5	–	–	–	
83	DP25	Water	1992	Calcium	N/A	µg/L	5	5	4.20E+04	7.70E+04	25M02
84	DP25	Water	1993	Carbon tetrachloride	5	µg/L	13	–	–	–	
85	DP25	Water	1992	Chloride	N/A	µg/L	2	2	1.40E+03	1.70E+03	25B-1
86	DP25	Water	1992	Chlorinated benzenes	10	µg/L	2	–	–	–	
87	DP25	Water	1992	Chlorobenzilate	10	µg/L	1	–	–	–	
88	DP25	Water	1992	Chloroform	0.5	µg/L	13	–	–	–	
89	DP25	Water	1993	Chloroform	5	µg/L	13	–	–	–	
90	DP25	Water	1992	Chromium	20	µg/L	5	–	–	–	
91	DP25	Water	1992	Chrysene	10	µg/L	1	–	–	–	
92	DP25	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	9	1	1.1	1.1	25B-15
93	DP25	Water	1992	Cobalt	20	µg/L	5	–	–	–	
94	DP25	Water	1992	Copper	20	µg/L	5	2	25	28	25M02
95	DP25	Water	1992	Di-n-butylphthalate	10	µg/L	1	–	–	–	
96	DP25	Water	1992	Di-n-octylphthalate	10	µg/L	1	–	–	–	
97	DP25	Water	1992	Diallate	10	µg/L	1	–	–	–	
98	DP25	Water	1992	Dibenz[a,h]anthracene	10	µg/L	1	–	–	–	
99	DP25	Water	1992	Dibenzofuran	10	µg/L	1	–	–	–	
100	DP25	Water	1992	Diethyl phthalate	10	µg/L	1	–	–	–	
101	DP25	Water	1992	Dimethoate	10	µg/L	1	–	–	–	
102	DP25	Water	1992	Dimethyl phthalate	10	µg/L	1	–	–	–	
103	DP25	Water	1992	Diphenylamine	10	µg/L	1	–	–	–	
104	DP25	Water	1992	Ethyl methanesulfonate	10	µg/L	1	–	–	–	
105	DP25	Water	1992	Ethylbenzene	2	µg/L	9	3	15	150	25B-15
106	DP25	Water	1992	Famphur	10	µg/L	1	–	–	–	
107	DP25	Water	1992	Fluoranthene	10	µg/L	1	–	–	–	
108	DP25	Water	1992	Fluorene	10	µg/L	1	–	–	–	
109	DP25	Water	1992	Fluoride	N/A	µg/L	2	2	200	400	25-2
110	DP25	Water	1992	h-Chlorofluorobenzene	N/A	µg/L	1	1	11	11	25B-1
111	DP25	Water	1992	Hexachlorobenzene	10	µg/L	1	–	–	–	
112	DP25	Water	1992	Hexachlorobutadiene	10	µg/L	1	–	–	–	
113	DP25	Water	1992	Hexachlorocyclopentadiene	10	µg/L	1	–	–	–	
114	DP25	Water	1992	Hexachloroethane	10	µg/L	1	–	–	–	
115	DP25	Water	1992	Hexachlorophene	10	µg/L	1	–	–	–	
116	DP25	Water	1992	Hexachloropropene	10	µg/L	1	–	–	–	
117	DP25	Water	1992	Indeno(1,2,3-cd)pyrene	10	µg/L	1	–	–	–	
118	DP25	Water	1992	Iron	N/A	µg/L	5	5	710	1.60E+04	25B-1
119	DP25	Water	1992	Isodrin	10	µg/L	1	–	–	–	
120	DP25	Water	1992	Isophorone	10	µg/L	1	–	–	–	
121	DP25	Water	1992	Isosafrole	10	µg/L	1	–	–	–	
122	DP25	Water	1992	Kepone	10	µg/L	1	–	–	–	
123	DP25	Water	1992	Kerosene	1.00E+04	µg/L	1	–	–	–	
124	DP25	Water	1992	Lead	5	µg/L	9	1	11	11	25B-1
125	DP25	Water	1993	Lead	5	µg/L	17	7	5.7	60	25B-17
126	DP25	Water	1992	m-Cresol	10	µg/L	1	–	–	–	
127	DP25	Water	1992	m-Dinitrobenzene	10	µg/L	1	–	–	–	
128	DP25	Water	1992	Magnesium	N/A	µg/L	5	5	9.90E+03	1.70E+04	25M02
129	DP25	Water	1992	Manganese	N/A	µg/L	5	5	1.40E+03	6.60E+03	25B-1
130	DP25	Water	1992	Methapyrilene	10	µg/L	1	–	–	–	
131	DP25	Water	1992	Methyl methanesulfonate	10	µg/L	1	–	–	–	
132	DP25	Water	1992	Methylen chloride	5	µg/L	13	–	–	–	
133	DP25	Water	1993	Methylene chloride	5	µg/L	13	1	2.3	24	25B-4
134	DP25	Water	1992	n-Nitroso-di-n-dipropylamine	10	µg/L	1	–	–	–	
135	DP25	Water	1992	n-Nitrosodi-n-butylamine	10	µg/L	1	–	–	–	
136	DP25	Water	1992	n-Nitrosodiethylamine	10	µg/L	1	–	–	–	
137	DP25	Water	1992	n-Nitrosodimethylamine	10	µg/L	1	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
138	DP25	Water	1992	n-Nitrosodiphenylamine	10	µg/L	1	–	–	–	
139	DP25	Water	1992	n-Nitrosomethylethylamine	10	µg/L	1	–	–	–	
140	DP25	Water	1992	n-Nitrosomorpholine	10	µg/L	1	–	–	–	
141	DP25	Water	1992	n-Nitrosopiperidine	10	µg/L	1	–	–	–	
142	DP25	Water	1992	Naphthalene	10	µg/L	1	–	–	–	
143	DP25	Water	1992	Nickel	30	µg/L	5	–	–	–	
144	DP25	Water	1992	Nitrate	N/A	µg/L	2	2	200	400	25B-1
145	DP25	Water	1992	Nitrite	200	µg/L	2	–	–	–	
146	DP25	Water	1992	Nitrobenzene	10	µg/L	1	–	–	–	
147	DP25	Water	1992	Nitrosopyrrolidine	10	µg/L	1	–	–	–	
148	DP25	Water	1992	o-Toluidine	10	µg/L	1	–	–	–	
149	DP25	Water	1992	p-Chlorofluorobenzene	N/A	µg/L	1	1	11	11	25B-1
150	DP25	Water	1992	p-Dimethylaminoazobenzene	10	µg/L	1	–	–	–	
151	DP25	Water	1992	p-Phenylenediamine	10	µg/L	1	–	–	–	
152	DP25	Water	1992	Parathion	10	µg/L	1	–	–	–	
153	DP25	Water	1992	Pentachloronitrobenzene (pcnb)	10	µg/L	1	–	–	–	
154	DP25	Water	1992	Pentachlorophenol	50	µg/L	1	–	–	–	
155	DP25	Water	1992	Phenacetin	10	µg/L	1	–	–	–	
156	DP25	Water	1992	Phenanthrene	10	µg/L	1	–	–	–	
157	DP25	Water	1992	Phenol	10	µg/L	1	–	–	–	
158	DP25	Water	1992	Phosphate	400	µg/L	2	–	–	–	
159	DP25	Water	1992	Potassium	N/A	µg/L	5	5	3.40E+03	4.50E+03	25M02
160	DP25	Water	1992	Pronamide	10	µg/L	1	–	–	–	
161	DP25	Water	1992	Pyrene	10	µg/L	1	–	–	–	
162	DP25	Water	1992	Safrol	10	µg/L	1	–	–	–	
163	DP25	Water	1992	Silver	20	µg/L	5	–	–	–	
164	DP25	Water	1992	Sodium	N/A	µg/L	5	5	4.10E+03	7.00E+03	25B-1
165	DP25	Water	1992	Sulfate	N/A	µg/L	2	2	1.10E+03	2.20E+04	25-2
166	DP25	Water	1992	Sym-trinitrobenzene	10	µg/L	1	–	–	–	
167	DP25	Water	1992	Tetrachloroethene	0.5	µg/L	9	–	–	–	
168	DP25	Water	1993	Tetrachloroethene	5	µg/L	13	–	–	–	
169	DP25	Water	1992	Tetraethyl dithiopyrophosphate	10	µg/L	1	–	–	–	
170	DP25	Water	1993	Tetrahydrofuran	10	µg/L	13	–	–	–	
171	DP25	Water	1992	Tin	100	µg/L	5	–	–	–	
172	DP25	Water	1992	Toluene	2	µg/L	9	1	210	210	25B-15
173	DP25	Water	1993	Toluene	5	µg/L	13	3	36	8.90E+03	25B-18
174	DP25	Water	1992	Total organic carb	N/A	µg/L	1	1	1.00E+03	1.00E+03	25-2
175	DP25	Water	1993	TPH-diesel	100	µg/L	14	6	100	1.10E+04	25B-4
176	DP25	Water	1993	TPH-gasoline	2.00E+03	µg/L	14	2	9.50E+03	1.90E+04	25B-4
177	DP25	Water	1992	Trans-DCE	1	µg/L	9	–	–	–	
178	DP25	Water	1992	Tributyl phosphate	10	µg/L	1	–	–	–	
179	DP25	Water	1992	Trichloroethene	1	µg/L	9	–	–	–	
180	DP25	Water	1993	Trichloroethene	5	µg/L	13	–	–	–	
181	DP25	Water	1992	Vanadium	30	µg/L	5	–	–	–	
182	DP25	Water	1992	Vinyl chloride	2	µg/L	9	–	–	–	
183	DP25	Water	1993	Vinyl chloride	10	µg/L	13	–	–	–	
184	DP25	Water	1992	Xylenes (total)	5	µg/L	9	3	180	480	25B-15
185	DP25	Water	1993	Xylenes (total)	5	µg/L	13	4	230	3.40E+03	25B-18
186	DP25	Water	1992	Zinc	10	µg/L	5	4	18	66	25B-1
187	DP25	Surface Soil	1988	Aldrin	1	µg/kg	5	–	–	–	
188	DP25	Surface Soil	1988	Benzene	N/A	µg/kg	1	1	410	410	25AB-5
189	DP25	Surface Soil	1988	BHC. beta	1	µg/kg	6	–	–	–	
190	DP25	Surface Soil	1988	BHC. gamma (lindane)	1	µg/kg	6	–	–	–	
191	DP25	Surface Soil	1988	Chlordane	1	µg/kg	6	–	–	–	
192	DP25	Surface Soil	1988	DDD. pp'	1	µg/kg	6	–	–	–	
193	DP25	Surface Soil	1988	DDE. pp'	1	µg/kg	6	–	–	–	
194	DP25	Surface Soil	1988	DDT. pp'	1	µg/kg	6	2	1.5	5.7	25M02
195	DP25	Surface Soil	1988	Dieldrin	1	µg/kg	6	1	8	8	25TP05
196	DP25	Surface Soil	1988	Diethyl ether	200	µg/kg	5	–	–	–	
197	DP25	Surface Soil	1988	Endosulfan sulfate	1	µg/kg	6	–	–	–	
198	DP25	Surface Soil	1988	Endosulfan, a	1	µg/kg	6	2	6	9	25TP01
199	DP25	Surface Soil	1988	Endosulfan, b	1	µg/kg	6	–	–	–	
200	DP25	Surface Soil	1988	Endrin aldehyde	1	µg/kg	6	–	–	–	
201	DP25	Surface Soil	1988	Ethylbenzene	80	µg/kg	9	4	13	3.00E+03	25AB-5
202	DP25	Surface Soil	1988	Heptachlor	1	µg/kg	5	–	–	–	
203	DP25	Surface Soil	1988	Heptachlor epoxide	1	µg/kg	6	1	1.4	1.4	25TP01
204	DP25	Surface Soil	1986	Lead	N/A	µg/kg	20	20	4.00E+03	1.00E+04	25-2
205	DP25	Surface Soil	1988	Lead	N/A	µg/kg	38	38	1.80E+03	2.53E+04	25B-15

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
206	DP25	Surface Soil	1988	PCB-1254 (aroclor)	54	µg/kg	5	1	172	172	25TP05
207	DP25	Surface Soil	1988	Toluene	N/A	µg/kg	3	3	0.022	3.10E+03	25AB-5
208	DP25	Surface Soil	1988	TPH	1.02E+04	µg/kg	6	4	1.16E+04	5.89E+05	25TP01
209	DP25	Surface Soil	1988	Xylenes (total)	N/A	µg/kg	4	4	48	1.50E+04	25AB-5
210	DP25	Surface Soil	1988	Xylenes (total)	80	µg/kg	5	–	–	–	
211	DP25	Soil	1988	Aldrin	1	µg/kg	9	–	–	–	
212	DP25	Soil	1988	BHC, beta	1	µg/kg	9	–	–	–	
213	DP25	Soil	1988	BHC, gamma (lindane)	1	µg/kg	9	–	–	–	
214	DP25	Soil	1988	Chlordane	1	µg/kg	9	–	–	–	
215	DP25	Soil	1988	DDD, pp'	1	µg/kg	9	–	–	–	
216	DP25	Soil	1988	DDE, pp'	1	µg/kg	9	1	2	2	25TP02
217	DP25	Soil	1988	DDT, pp'	1	µg/kg	9	3	2	17	25TP02
218	DP25	Soil	1988	Dieldrin	1	µg/kg	9	–	–	–	
219	DP25	Soil	1988	Diethyl ether	200	µg/kg	9	1	500	500	25M01
220	DP25	Soil	1988	Endosulfan sulfate	1	µg/kg	9	–	–	–	
221	DP25	Soil	1988	Endosulfan, a	1	µg/kg	9	–	–	–	
222	DP25	Soil	1988	Endosulfan, b	1	µg/kg	9	–	–	–	
223	DP25	Soil	1988	Endrin aldehyde	1	µg/kg	9	–	–	–	
224	DP25	Soil	1988	Ethylbenzene	80	µg/kg	9	1	190	190	25M01
225	DP25	Soil	1988	Heptachlor	1	µg/kg	9	–	–	–	
226	DP25	Soil	1988	Heptachlor epoxide	1	µg/kg	9	1	250	250	25TP01
227	DP25	Soil	1986	Lead	N/A	µg/kg	1	1	8.70E+05	8.70E+05	25SD-1
228	DP25	Soil	1988	Lead	N/A	µg/kg	6	6	5.20E+03	9.80E+03	25AB-5
229	DP25	Soil	1988	PCB-1254 (aroclor)	54	µg/kg	9	1	613	613	25TP01
230	DP25	Soil	1988	TPH	1.02E+04	µg/kg	9	4	1.02E+04	2.89E+05	25M03
231	DP25	Soil	1988	Xylenes (total)	80	µg/kg	9	1	110	110	25M01
232	DP44	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	15	–	–	–	
233	DP44	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	15	–	–	–	
234	DP44	Water	1992	1,1-Dichloroethane	1	µg/L	15	–	–	–	
235	DP44	Water	1992	1,2-Dichloroethane	0.5	µg/L	15	–	–	–	
236	DP44	Water	1992	1,4-Dichlorobenzene	2	µg/L	15	–	–	–	
237	DP44	Water	1992	Antimony	200	µg/L	4	–	–	–	
238	DP44	Water	1992	Barium	20	µg/L	4	3	190	200	44M04
239	DP44	Water	1992	Benzene	2	µg/L	15	2	3.7	5.3	44M05
240	DP44	Water	1992	Beryllium	3	µg/L	4	–	–	–	
241	DP44	Water	1992	Bromide	500	µg/L	4	–	–	–	
242	DP44	Water	1992	Cadmium	10	µg/L	4	–	–	–	
243	DP44	Water	1992	Calcium	100	µg/L	4	3	5.60E+04	6.00E+04	44M06D
244	DP44	Water	1992	Carbon tetrachloride	1	µg/L	15	–	–	–	
245	DP44	Water	1992	Chloride	200	µg/L	4	3	2.30E+03	2.30E+03	44M04
246	DP44	Water	1992	Chloroform	0.5	µg/L	15	–	–	–	
247	DP44	Water	1992	Chromium	20	µg/L	4	–	–	–	
248	DP44	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	15	12	1.1	260	44M04
249	DP44	Water	1992	Cobalt	20	µg/L	4	–	–	–	
250	DP44	Water	1992	Copper	20	µg/L	4	–	–	–	
251	DP44	Water	1992	Ethylbenzene	2	µg/L	15	–	–	–	
252	DP44	Water	1992	Fluoride	100	µg/L	4	3	100	100	44M04
253	DP44	Water	1992	h-Chlorofluorobenzene	N/A	µg/L	9	9	9	12	44M04
254	DP44	Water	1992	Iron	20	µg/L	4	3	6.00E+03	8.40E+03	44M04
255	DP44	Water	1992	Magnesium	100	µg/L	4	3	1.20E+04	1.20E+04	44M04
256	DP44	Water	1992	Manganese	10	µg/L	4	3	3.30E+03	4.60E+03	44M06
257	DP44	Water	1992	Methylenechloride	5	µg/L	15	–	–	–	
258	DP44	Water	1992	Nickel	30	µg/L	4	–	–	–	
259	DP44	Water	1992	Nitrate	200	µg/L	4	1	700	700	44M06B
260	DP44	Water	1992	Nitrite	200	µg/L	4	–	–	–	
261	DP44	Water	1992	p-Chlorofluorobenzene	N/A	µg/L	9	9	8.5	10	44M02
262	DP44	Water	1992	Phosphate	400	µg/L	4	–	–	–	
263	DP44	Water	1992	Potassium	300	µg/L	4	3	3.30E+03	3.50E+03	44M06D
264	DP44	Water	1992	Silver	20	µg/L	4	–	–	–	
265	DP44	Water	1992	Sodium	300	µg/L	4	3	4.90E+03	5.60E+03	44M04
266	DP44	Water	1992	Sulfate	500	µg/L	4	3	1.20E+04	1.60E+04	44M06
267	DP44	Water	1992	Tetrachloroethene	0.5	µg/L	15	1	0.7	0.7	44M09
268	DP44	Water	1992	Tin	100	µg/L	4	–	–	–	
269	DP44	Water	1992	Toluene	2	µg/L	15	–	–	–	
270	DP44	Water	1992	Trans-DCE	1	µg/L	15	8	1.3	5.4	44M04
271	DP44	Water	1992	Trichloroethene	1	µg/L	15	3	1.2	2.50E+03	44M04
272	DP44	Water	1992	Vanadium	30	µg/L	4	–	–	–	
273	DP44	Water	1992	Vinyl chloride	2	µg/L	15	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
274	DP44	Water	1992	Xylenes (total)	5	µg/L	15	–	–	–	
275	DP44	Water	1992	Zinc	10	µg/L	4	–	–	–	
276	DP44	Surface Soil	1992	1,1,1-Trichloroethane	0.5	µg/kg	9	–	–	–	
277	DP44	Surface Soil	1992	1,1,2-Trichloroethane	0.5	µg/kg	9	–	–	–	
278	DP44	Surface Soil	1992	1,1-Dichloroethane	1	µg/kg	9	–	–	–	
279	DP44	Surface Soil	1992	1,2-Dichloroethane	0.5	µg/kg	9	–	–	–	
280	DP44	Surface Soil	1992	1,4-Dichlorobenzene	2	µg/kg	9	–	–	–	
281	DP44	Surface Soil	1988	2-Methylnaphthalenee	30	µg/kg	3	1	550	550	44M03
282	DP44	Surface Soil	1988	Acenaphthene	10	µg/kg	3	1	2.90E+03	2.90E+03	44M03
283	DP44	Surface Soil	1988	Acenaphthylene	10	µg/kg	3	1	480	480	44M03
284	DP44	Surface Soil	1988	Aluminum	N/A	µg/kg	3	3	5.21E+06	1.39E+07	44M01
285	DP44	Surface Soil	1988	Anthracene	20	µg/kg	3	1	5.50E+03	5.50E+03	44M03
286	DP44	Surface Soil	1988	Antimony	4.50E+03	µg/kg	3	1	8.00E+03	8.00E+03	44M01
287	DP44	Surface Soil	1988	Barium	N/A	µg/kg	3	3	7.90E+04	1.63E+05	44M01
288	DP44	Surface Soil	1992	Benzene	2	µg/kg	9	–	–	–	
289	DP44	Surface Soil	1988	Benzo(a)anthracene	10	µg/kg	3	2	240	4.80E+04	44M03
290	DP44	Surface Soil	1988	Benzo(a)pyrene	9	µg/kg	3	2	470	1.80E+04	44M03
291	DP44	Surface Soil	1988	Benzo(b)fluoranthenene	30	µg/kg	3	2	690	2.10E+05	44M03
292	DP44	Surface Soil	1988	Benzo(g,h,i)perylene	40	µg/kg	3	2	630	1.40E+04	44M03
293	DP44	Surface Soil	1988	Cadmium	N/A	µg/kg	3	3	726	906	44M02
294	DP44	Surface Soil	1988	Calcium	N/A	µg/kg	3	3	2.70E+06	1.10E+07	44M01
295	DP44	Surface Soil	1992	Carbon tetrachloride	1	µg/kg	9	–	–	–	
296	DP44	Surface Soil	1988	Chloroform	20	µg/kg	3	1	170	170	44M01
297	DP44	Surface Soil	1992	Chloroform	0.5	µg/kg	9	–	–	–	
298	DP44	Surface Soil	1988	Chromium	N/A	µg/kg	3	3	1.53E+04	2.74E+04	44M01
299	DP44	Surface Soil	1988	Chrysene	70	µg/kg	3	1	2.10E+04	2.10E+04	44M03
300	DP44	Surface Soil	1992	Cis-1,2-dichloroethylene	1	µg/kg	9	–	–	–	
301	DP44	Surface Soil	1988	Cobalt	N/A	µg/kg	3	3	4.72E+03	1.37E+04	44M01
302	DP44	Surface Soil	1988	Copper	N/A	µg/kg	3	3	1.22E+04	3.65E+04	44M01
303	DP44	Surface Soil	1988	Dibenzo(a,h)anthracene	50	µg/kg	3	1	6.50E+03	6.50E+03	44M03
304	DP44	Surface Soil	1988	Dibenzofuran	10	µg/kg	3	1	2.30E+03	2.30E+03	44M03
305	DP44	Surface Soil	1992	Ethylbenzene	2	µg/kg	9	–	–	–	
306	DP44	Surface Soil	1988	Fluoranthene	50	µg/kg	3	1	4.90E+04	4.90E+04	44M03
307	DP44	Surface Soil	1988	Fluorene	30	µg/kg	3	1	3.80E+03	3.80E+03	44M03
308	DP44	Surface Soil	1988	Indeno(1,2,3-cd)pyrene	50	µg/kg	3	2	660	1.50E+04	44M03
309	DP44	Surface Soil	1988	Iron	N/A	µg/kg	3	3	9.55E+06	2.58E+07	44M01
310	DP44	Surface Soil	1988	Lead	N/A	µg/kg	6	6	1.17E+04	4.79E+04	44M02
311	DP44	Surface Soil	1988	Magnesium	N/A	µg/kg	3	3	2.65E+06	7.12E+06	44M01
312	DP44	Surface Soil	1988	Manganese	N/A	µg/kg	3	3	1.63E+05	4.45E+05	44M01
313	DP44	Surface Soil	1988	Methylene chloride	N/A	µg/kg	3	3	1.80E+03	1.10E+04	44M01
314	DP44	Surface Soil	1992	Methylenechloride	5	µg/kg	9	–	–	–	
315	DP44	Surface Soil	1988	Naphthalene	9	µg/kg	3	1	880	880	44M03
316	DP44	Surface Soil	1988	Nickel	N/A	µg/kg	3	3	1.10E+04	3.40E+04	44M01
317	DP44	Surface Soil	1988	Phenanthrene	20	µg/kg	3	1	3.70E+04	3.70E+04	44M03
318	DP44	Surface Soil	1988	Potassium	N/A	µg/kg	3	3	5.95E+05	9.40E+05	44M01
319	DP44	Surface Soil	1988	Pyrene	60	µg/kg	3	1	3.20E+04	3.20E+04	44M03
320	DP44	Surface Soil	1988	Sodium	N/A	µg/kg	3	3	2.04E+05	4.10E+05	44M01
321	DP44	Surface Soil	1992	Tetrachloroethene	0.5	µg/kg	9	1	- 1.8	1.8	44SYS04
322	DP44	Surface Soil	1992	Toluene	2	µg/kg	9	5	- 2.1	34	44SYS06
323	DP44	Surface Soil	1988	TPH	1.02E+04	µg/kg	3	2	3.09E+05	4.44E+05	44M02
324	DP44	Surface Soil	1990	TPH	2.00E+04	µg/kg	22	21	2.40E+04	7.00E+06	44SS10
325	DP44	Surface Soil	1992	Trans-DCE	1	µg/kg	9	–	–	–	
326	DP44	Surface Soil	1992	Trichloroethene	1	µg/kg	9	–	–	–	
327	DP44	Surface Soil	1988	Vanadium	N/A	µg/kg	3	3	2.03E+04	5.41E+04	44M01
328	DP44	Surface Soil	1992	Vinyl chloride	2	µg/kg	9	–	–	–	
329	DP44	Surface Soil	1992	Xylenes (total)	5	µg/kg	9	–	–	–	
330	DP44	Surface Soil	1988	Zinc	N/A	µg/kg	3	3	3.18E+04	1.48E+05	44M02
331	DP44	Soil	1988	2-Methylnaphthalenee	N/A	µg/kg	1	1	30	30	44M01
332	DP44	Soil	1988	Acenaphthene	10	µg/kg	1	–	–	–	
333	DP44	Soil	1988	Acenaphthylene	10	µg/kg	1	–	–	–	
334	DP44	Soil	1990	Acetophenone	30	µg/kg	22	1	100	100	44M04
335	DP44	Soil	1988	Aluminum	N/A	µg/kg	1	1	6.65E+06	6.65E+06	44M01
336	DP44	Soil	1988	Anthracene	20	µg/kg	1	–	–	–	
337	DP44	Soil	1988	Antimony	4.50E+03	µg/kg	1	–	–	–	
338	DP44	Soil	1988	Barium	N/A	µg/kg	1	1	1.13E+05	1.13E+05	44M01
339	DP44	Soil	1988	Benzo(a)anthracene	N/A	µg/kg	1	1	200	200	44M01
340	DP44	Soil	1988	Benzo(a)pyrene	N/A	µg/kg	1	1	390	390	44M01
341	DP44	Soil	1988	Benzo(b)fluoranthenene	N/A	µg/kg	1	1	460	460	44M01

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
342	DP44	Soil	1988	Benzo(g,h,i)perylene	N/A	µg/kg	1	1	280	280	44M01
343	DP44	Soil	1990	Bis(2-ethylhexyl) phthalate	50	µg/kg	22	1	90	90	44M07
344	DP44	Soil	1990	Butyl benzyl phthalate	30	µg/kg	22	1	60	60	44SB05
345	DP44	Soil	1988	Cadmium	455	µg/kg	1	–	–	–	
346	DP44	Soil	1988	Calcium	N/A	µg/kg	1	1	4.48E+06	4.48E+06	44M01
347	DP44	Soil	1988	Chloroform	20	µg/kg	1	–	–	–	
348	DP44	Soil	1988	Chromium	N/A	µg/kg	1	1	1.12E+04	1.12E+04	44M01
349	DP44	Soil	1988	Chrysene	N/A	µg/kg	1	1	280	280	44M01
350	DP44	Soil	1988	Cobalt	N/A	µg/kg	1	1	6.49E+03	6.49E+03	44M01
351	DP44	Soil	1988	Copper	N/A	µg/kg	1	1	1.39E+04	1.39E+04	44M01
352	DP44	Soil	1988	Dibenzo(a,h)anthracene	50	µg/kg	1	–	–	–	
353	DP44	Soil	1988	Dibenzofuran	10	µg/kg	1	–	–	–	
354	DP44	Soil	1988	Fluoranthene	N/A	µg/kg	1	1	770	770	44M01
355	DP44	Soil	1988	Fluorene	30	µg/kg	1	–	–	–	
356	DP44	Soil	1988	Indeno(1,2,3-cd)pyrene	N/A	µg/kg	1	1	270	270	44M01
357	DP44	Soil	1988	Iron	N/A	µg/kg	1	1	1.15E+07	1.15E+07	44M01
358	DP44	Soil	1992	Kerosene	660	µg/kg	10	4	50	510	44SS05
359	DP44	Soil	1988	Lead	N/A	µg/kg	2	2	6.54E+03	1.24E+04	44M01
360	DP44	Soil	1990	Lead	N/A	µg/kg	22	22	2.66E+03	4.67E+04	44SB08
361	DP44	Soil	1988	Magnesium	N/A	µg/kg	1	1	3.56E+06	3.56E+06	44M01
362	DP44	Soil	1988	Manganese	N/A	µg/kg	1	1	2.15E+05	2.15E+05	44M01
363	DP44	Soil	1988	Methylene chloride	N/A	µg/kg	1	1	1.70E+03	1.70E+03	44M01
364	DP44	Soil	1988	Naphthalene	9	µg/kg	1	–	–	–	
365	DP44	Soil	1990	Naphthalene	30	µg/kg	22	1	80	80	44M04
366	DP44	Soil	1988	Nickel	N/A	µg/kg	1	1	1.43E+04	1.43E+04	44M01
367	DP44	Soil	1988	Phenanthrene	N/A	µg/kg	1	1	530	530	44M01
368	DP44	Soil	1988	Potassium	N/A	µg/kg	1	1	6.05E+05	6.05E+05	44M01
369	DP44	Soil	1988	Pyrene	N/A	µg/kg	1	1	400	400	44M01
370	DP44	Soil	1988	Sodium	N/A	µg/kg	1	1	2.55E+05	2.55E+05	44M01
371	DP44	Soil	1992	Total dissolved solids	N/A	%	10	10	83.9	97.5	44SS07
372	DP44	Soil	1992	Total petroleum hydrocarbons	N/A	µg/kg	10	10	0.063	3.1	44SS04
373	DP44	Soil	1988	TPH	N/A	µg/kg	1	1	4.76E+04	4.76E+04	44M01
374	DP44	Soil	1990	TPH	1.40E+04	µg/kg	55	30	1.10E+04	7.20E+06	44SB08
375	DP44	Soil	1988	Vanadium	N/A	µg/kg	1	1	2.44E+04	2.44E+04	44M01
376	DP44	Soil	1988	Zinc	N/A	µg/kg	1	1	2.87E+04	2.87E+04	44M01
377	LF02	Water	1994	(Technical) chlordane	1	µg/L	4	–	–	–	
378	LF02	Water	1994	1,1,1-Trichloroethane	1	µg/L	6	–	–	–	
379	LF02	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	6	–	–	–	
380	LF02	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	6	–	–	–	
381	LF02	Water	1994	1,1-Dichloroethane	1	µg/L	6	–	–	–	
382	LF02	Water	1994	1,1-Dichloroethene	0.5	µg/L	6	–	–	–	
383	LF02	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	4	–	–	–	
384	LF02	Water	1994	1,2-Dichlorobenzene	10	µg/L	16	–	–	–	
385	LF02	Water	1994	1,2-Dichloroethane	0.5	µg/L	6	–	–	–	
386	LF02	Water	1994	1,2-Dichloropropane	0.5	µg/L	6	–	–	–	
387	LF02	Water	1994	1,3-Dichlorobenzene	10	µg/L	16	–	–	–	
388	LF02	Water	1994	1,4-Dichlorobenzene	10	µg/L	16	–	–	–	
389	LF02	Water	1994	2,4,5-Trichlorophenol	10	µg/L	4	–	–	–	
390	LF02	Water	1994	2,4,6-Trichlorophenol	10	µg/L	4	–	–	–	
391	LF02	Water	1994	2,4-Dichlorophenol	10	µg/L	4	–	–	–	
392	LF02	Water	1994	2,4-Dimethylphenol	10	µg/L	4	–	–	–	
393	LF02	Water	1994	2,4-Dinitrophenol	50	µg/L	4	–	–	–	
394	LF02	Water	1994	2,4-Dinitrotoluene	50	µg/L	8	–	–	–	
395	LF02	Water	1994	2,6-Dinitrotoluene	10	µg/L	4	–	–	–	
396	LF02	Water	1994	2-Chloroethylvinyl ether	2	µg/L	6	–	–	–	
397	LF02	Water	1994	2-Chloronaphthalene	10	µg/L	4	–	–	–	
398	LF02	Water	1994	2-Chlorophenol	10	µg/L	4	–	–	–	
399	LF02	Water	1994	2-Methylnaphthalene	10	µg/L	4	–	–	–	
400	LF02	Water	1994	2-Methylphenol	10	µg/L	4	–	–	–	
401	LF02	Water	1994	2-Nitroaniline	50	µg/L	4	–	–	–	
402	LF02	Water	1994	2-Nitrophenol	10	µg/L	4	–	–	–	
403	LF02	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	4	–	–	–	
404	LF02	Water	1994	3-Nitroaniline	50	µg/L	4	–	–	–	
405	LF02	Water	1994	4,4'-DDD	0.1	µg/L	4	–	–	–	
406	LF02	Water	1994	4,4'-DDE	0.1	µg/L	4	–	–	–	
407	LF02	Water	1994	4,4'-DDT	0.1	µg/L	4	–	–	–	
408	LF02	Water	1994	4-Bromophenyl-phenylether	10	µg/L	4	–	–	–	
409	LF02	Water	1994	4-Chloro-3-methylphenol	20	µg/L	4	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
410	LF02	Water	1994	4-Chloroaniline	20	µg/L	4	–	–	–	
411	LF02	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	4	–	–	–	
412	LF02	Water	1994	4-Methylphenol	10	µg/L	4	–	–	–	
413	LF02	Water	1994	4-Nitroaniline	20	µg/L	4	–	–	–	
414	LF02	Water	1994	4-Nitrophenol	50	µg/L	4	–	–	–	
415	LF02	Water	1994	a-BHC	0.05	µg/L	4	–	–	–	
416	LF02	Water	1994	a-Chlordane	0.05	µg/L	4	–	–	–	
417	LF02	Water	1994	Acenaphthene	10	µg/L	4	–	–	–	
418	LF02	Water	1994	Acenaphthylene	10	µg/L	4	–	–	–	
419	LF02	Water	1994	Aldrin	0.05	µg/L	4	–	–	–	
420	LF02	Water	1994	Aluminum	N/A	µg/L	4	4	2.53E+03	8.57E+03	02M08
421	LF02	Water	1994	Anthracene	10	µg/L	4	–	–	–	
422	LF02	Water	1994	Antimony	1	µg/L	8	1	19.8	19.8	02MW9
423	LF02	Water	1994	Arsenic	N/A	µg/L	8	8	21.4	295	02M08
424	LF02	Water	1994	b-BHC	0.05	µg/L	4	–	–	–	
425	LF02	Water	1994	Barium	N/A	µg/L	8	8	37.7	392	02M01
426	LF02	Water	1994	Benzene	1	µg/L	6	–	–	–	
427	LF02	Water	1994	Benzo(a)anthracene	10	µg/L	4	–	–	–	
428	LF02	Water	1994	Benzo(a)pyrene	10	µg/L	4	–	–	–	
429	LF02	Water	1994	Benzo(b)fluoranthene	10	µg/L	4	–	–	–	
430	LF02	Water	1994	Benzo(g,h,i)perylene	10	µg/L	4	–	–	–	
431	LF02	Water	1994	Benzo(k)fluoranthene	10	µg/L	4	–	–	–	
432	LF02	Water	1994	Benzoic acid	50	µg/L	4	–	–	–	
433	LF02	Water	1994	Benzyl alcohol	20	µg/L	4	–	–	–	
434	LF02	Water	1994	Beryllium	2	µg/L	8	–	–	–	
435	LF02	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	4	–	–	–	
436	LF02	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	4	–	–	–	
437	LF02	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	4	–	–	–	
438	LF02	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	4	–	–	–	
439	LF02	Water	1994	Bromide	100	µg/L	4	–	–	–	
440	LF02	Water	1994	Bromodichloromethane	1	µg/L	6	–	–	–	
441	LF02	Water	1994	Bromoform	1	µg/L	6	–	–	–	
442	LF02	Water	1994	Bromomethane	2	µg/L	6	–	–	–	
443	LF02	Water	1994	Butylbenzylphthalate	10	µg/L	4	–	–	–	
444	LF02	Water	1994	Cadmium	1	µg/L	8	–	–	–	
445	LF02	Water	1994	Calcium	N/A	µg/L	8	8	2.97E+04	6.17E+04	02M02F
446	LF02	Water	1994	Carbazole	10	µg/L	4	–	–	–	
447	LF02	Water	1994	Carbon tetrachloride	0.5	µg/L	6	–	–	–	
448	LF02	Water	1994	Chloride	N/A	µg/L	4	4	960	1.60E+04	02M02
449	LF02	Water	1994	Chlorobenzene	1	µg/L	12	–	–	–	
450	LF02	Water	1994	Chloroethane	1	µg/L	6	–	–	–	
451	LF02	Water	1994	Chloroform	1	µg/L	6	–	–	–	
452	LF02	Water	1994	Chloromethane	1	µg/L	6	–	–	–	
453	LF02	Water	1994	Chromium	N/A	µg/L	3	3	11	19.9	02M08
454	LF02	Water	1994	Chrysene	10	µg/L	4	–	–	–	
455	LF02	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	6	–	–	–	
456	LF02	Water	1994	Cobalt	1	µg/L	3	–	–	–	
457	LF02	Water	1994	Copper	1	µg/L	7	4	26.2	55.9	02M01
458	LF02	Water	1994	d-BHC	0.05	µg/L	4	–	–	–	
459	LF02	Water	1994	Di-n-butylphthalate	N/A	µg/L	4	4	1	2	02M01
460	LF02	Water	1994	Di-n-octylphthalate	10	µg/L	4	–	–	–	
461	LF02	Water	1994	Dibenz(a,h)anthracene	10	µg/L	4	–	–	–	
462	LF02	Water	1994	Dibenzofuran	10	µg/L	4	–	–	–	
463	LF02	Water	1994	Dibromochloromethane	1	µg/L	6	–	–	–	
464	LF02	Water	1994	Dichlorodifluoromethane	1	µg/L	6	–	–	–	
465	LF02	Water	1994	Dieldrin	0.1	µg/L	4	–	–	–	
466	LF02	Water	1994	Diethylphthalate	10	µg/L	4	–	–	–	
467	LF02	Water	1994	Dimethylphthalate	10	µg/L	4	–	–	–	
468	LF02	Water	1994	Endosulfan I	0.05	µg/L	4	–	–	–	
469	LF02	Water	1994	Endosulfan II	0.1	µg/L	4	–	–	–	
470	LF02	Water	1994	Endosulfan sulfate	0.1	µg/L	4	–	–	–	
471	LF02	Water	1994	Endrin	0.1	µg/L	4	–	–	–	
472	LF02	Water	1994	Endrin aldehyde	0.1	µg/L	4	–	–	–	
473	LF02	Water	1994	Ethylbenzene	1	µg/L	6	–	–	–	
474	LF02	Water	1994	Fluoranthene	10	µg/L	4	–	–	–	
475	LF02	Water	1994	Fluorene	10	µg/L	4	–	–	–	
476	LF02	Water	1994	g-BHC	0.05	µg/L	4	–	–	–	
477	LF02	Water	1994	g-Chlordane	0.05	µg/L	4	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
478	LF02	Water	1994	Heptachlor	0.05	µg/L	4	–	–	–	
479	LF02	Water	1994	Heptachlor epoxide	0.05	µg/L	4	–	–	–	
480	LF02	Water	1994	Hexachlorobenzene	10	µg/L	4	–	–	–	
481	LF02	Water	1994	Hexachlorobutadiene	10	µg/L	4	–	–	–	
482	LF02	Water	1994	Hexachlorocyclopentadiene	10	µg/L	4	–	–	–	
483	LF02	Water	1994	Hexachloroethane	10	µg/L	4	–	–	–	
484	LF02	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	4	–	–	–	
485	LF02	Water	1994	Iron	N/A	µg/L	8	8	4.65E+03	6.06E+04	02M08
486	LF02	Water	1994	Isophorone	10	µg/L	4	–	–	–	
487	LF02	Water	1994	Lead	1	µg/L	8	4	6.1	18.3	02M01
488	LF02	Water	1994	M,p-xylene	1	µg/L	6	–	–	–	
489	LF02	Water	1994	Magnesium	N/A	µg/L	8	8	7.15E+03	2.32E+04	02M01
490	LF02	Water	1994	Manganese	N/A	µg/L	8	8	1.02E+03	1.67E+03	02M02F
491	LF02	Water	1994	Methoxychlor	0.5	µg/L	4	–	–	–	
492	LF02	Water	1994	Methylene chloride	1	µg/L	6	1	1.7	1.7	02M01
493	LF02	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	4	–	–	–	
494	LF02	Water	1994	n-Nitrosodiphenylamine	10	µg/L	4	–	–	–	
495	LF02	Water	1994	Naphthalene	10	µg/L	4	–	–	–	
496	LF02	Water	1994	Nickel	N/A	µg/L	1	1	22.9	22.9	02M02
497	LF02	Water	1994	Nitrobenzene	10	µg/L	4	–	–	–	
498	LF02	Water	1994	o-Xylene	1	µg/L	6	–	–	–	
499	LF02	Water	1994	PCB-1016	1	µg/L	4	–	–	–	
500	LF02	Water	1994	PCB-1221	2	µg/L	4	–	–	–	
501	LF02	Water	1994	PCB-1232	1	µg/L	4	–	–	–	
502	LF02	Water	1994	PCB-1242	1	µg/L	4	–	–	–	
503	LF02	Water	1994	PCB-1248	1	µg/L	4	–	–	–	
504	LF02	Water	1994	PCB-1254	1	µg/L	4	–	–	–	
505	LF02	Water	1994	PCB-1260	1	µg/L	4	–	–	–	
506	LF02	Water	1994	Pentachlorophenol	50	µg/L	4	–	–	–	
507	LF02	Water	1994	Phenanthrene	10	µg/L	4	–	–	–	
508	LF02	Water	1994	Phenol	10	µg/L	4	–	–	–	
509	LF02	Water	1994	Potassium	N/A	µg/L	4	4	7.10E+03	1.14E+04	02M01
510	LF02	Water	1994	Pyrene	10	µg/L	4	–	–	–	
511	LF02	Water	1994	Silver	1	µg/L	8	–	–	–	
512	LF02	Water	1994	Sodium	N/A	µg/L	6	6	8.39E+03	2.24E+04	02M01
513	LF02	Water	1994	Sulfate	N/A	µg/L	4	4	300	3.90E+04	02M01
514	LF02	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	6	–	–	–	
515	LF02	Water	1994	Tin	1	µg/L	6	–	–	–	
516	LF02	Water	1994	Toluene	1	µg/L	6	1	2.2	2.2	02M02
517	LF02	Water	1994	Total dissolved solids	N/A	µg/L	4	4	1.50E+05	3.10E+05	02M01
518	LF02	Water	1994	Toxaphene	5	µg/L	4	–	–	–	
519	LF02	Water	1994	Trans-1,2-dichloroethene	1	µg/L	6	1	1.4	1.4	02M01
520	LF02	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	6	–	–	–	
521	LF02	Water	1994	Trichloroethene (TCE)	0.5	µg/L	6	–	–	–	
522	LF02	Water	1994	Trichlorofluoromethane	1	µg/L	6	–	–	–	
523	LF02	Water	1994	Vanadium	N/A	µg/L	4	4	11	35.2	02M08
524	LF02	Water	1994	Vinyl chloride	0.5	µg/L	6	–	–	–	
525	LF02	Water	1994	Zinc	N/A	µg/L	4	4	76	126	02M08
526	LF03-sp	Water	1994	(Technical) chlordane	1	µg/L	1	–	–	–	
527	LF03-sp	Water	1994	1,1,1-Trichloroethane	10	µg/L	1	–	–	–	
528	LF03-sp	Water	1994	1,1,2,2-Tetrachloroethane	10	µg/L	1	–	–	–	
529	LF03-sp	Water	1994	1,1,2-Trichloroethane	5	µg/L	1	–	–	–	
530	LF03-sp	Water	1994	1,1-Dichloroethane	N/A	µg/L	1	1	33	33	83M08
531	LF03-sp	Water	1994	1,1-Dichloroethene	5	µg/L	1	–	–	–	
532	LF03-sp	Water	1994	1,2,4-Trichlorobenzene	500	µg/L	2	–	–	–	
533	LF03-sp	Water	1994	1,2-Dichlorobenzene	500	µg/L	4	2	24	25	83M08DO
534	LF03-sp	Water	1994	1,2-Dichloroethane	5	µg/L	1	–	–	–	
535	LF03-sp	Water	1994	1,2-Dichloropropane	5	µg/L	1	–	–	–	
536	LF03-sp	Water	1994	1,3-Dichlorobenzene	500	µg/L	4	–	–	–	
537	LF03-sp	Water	1994	1,4-Dichlorobenzene	500	µg/L	4	2	64	82	83M08
538	LF03-sp	Water	1994	2,4,5-Trichlorophenol	500	µg/L	2	–	–	–	
539	LF03-sp	Water	1994	2,4,6-Trichlorophenol	500	µg/L	2	–	–	–	
540	LF03-sp	Water	1994	2,4-Dichlorophenol	500	µg/L	2	–	–	–	
541	LF03-sp	Water	1994	2,4-Dimethylphenol	500	µg/L	2	–	–	–	
542	LF03-sp	Water	1994	2,4-Dinitrophenol	2.50E+03	µg/L	2	–	–	–	
543	LF03-sp	Water	1994	2,4-Dinitrotoluene	2.50E+03	µg/L	4	–	–	–	
544	LF03-sp	Water	1994	2,6-Dinitrotoluene	500	µg/L	2	–	–	–	
545	LF03-sp	Water	1994	2-Chloroethylvinyl ether	20	µg/L	1	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
546	LF03-sp	Water	1994	2-Chloronaphthalene	500	µg/L	2	–	–	–	
547	LF03-sp	Water	1994	2-Chlorophenol	500	µg/L	2	–	–	–	
548	LF03-sp	Water	1994	2-Methylnaphthalene	500	µg/L	2	–	–	–	
549	LF03-sp	Water	1994	2-Methylphenol	500	µg/L	2	–	–	–	
550	LF03-sp	Water	1994	2-Nitroaniline	2.50E+03	µg/L	2	–	–	–	
551	LF03-sp	Water	1994	2-Nitrophenol	500	µg/L	2	–	–	–	
552	LF03-sp	Water	1994	3,3'-Dichlorobenzidine	1.00E+03	µg/L	2	–	–	–	
553	LF03-sp	Water	1994	3-Nitroaniline	2.50E+03	µg/L	2	–	–	–	
554	LF03-sp	Water	1994	4,4'-DDD	0.1	µg/L	1	–	–	–	
555	LF03-sp	Water	1994	4,4'-DDE	0.1	µg/L	1	–	–	–	
556	LF03-sp	Water	1994	4,4'-DDT	0.1	µg/L	1	–	–	–	
557	LF03-sp	Water	1994	4-Bromophenyl-phenylether	500	µg/L	2	–	–	–	
558	LF03-sp	Water	1994	4-Chloro-3-methylphenol	1.00E+03	µg/L	2	–	–	–	
559	LF03-sp	Water	1994	4-Chloroaniline	1.00E+03	µg/L	2	–	–	–	
560	LF03-sp	Water	1994	4-Chlorophenyl-phenylether	500	µg/L	2	–	–	–	
561	LF03-sp	Water	1994	4-Methylphenol	N/A	µg/L	2	2	4.80E+03	6.20E+03	83M08
562	LF03-sp	Water	1994	4-Nitroaniline	1.00E+03	µg/L	2	–	–	–	
563	LF03-sp	Water	1994	4-Nitrophenol	2.50E+03	µg/L	2	–	–	–	
564	LF03-sp	Water	1994	a-BHC	0.05	µg/L	1	–	–	–	
565	LF03-sp	Water	1994	a-Chlordane	0.05	µg/L	1	–	–	–	
566	LF03-sp	Water	1994	Acenaphthene	500	µg/L	2	–	–	–	
567	LF03-sp	Water	1994	Acenaphthylene	500	µg/L	2	–	–	–	
568	LF03-sp	Water	1994	Aldrin	0.05	µg/L	1	–	–	–	
569	LF03-sp	Water	1994	Aluminum	N/A	µg/L	2	2	211	333	83M08
570	LF03-sp	Water	1994	Anthracene	500	µg/L	2	–	–	–	
571	LF03-sp	Water	1994	Arsenic	N/A	µg/L	1	1	5.4	5.4	83M08
572	LF03-sp	Water	1994	b-BHC	0.05	µg/L	1	–	–	–	
573	LF03-sp	Water	1994	Barium	N/A	µg/L	2	2	375	406	83M08F
574	LF03-sp	Water	1994	Benzene	N/A	µg/L	1	1	20	20	83M08
575	LF03-sp	Water	1994	Benzo(a)anthracene	500	µg/L	2	–	–	–	
576	LF03-sp	Water	1994	Benzo(a)pyrene	500	µg/L	2	–	–	–	
577	LF03-sp	Water	1994	Benzo(b)fluoranthene	500	µg/L	2	–	–	–	
578	LF03-sp	Water	1994	Benzo(g,h,i)perylene	500	µg/L	2	–	–	–	
579	LF03-sp	Water	1994	Benzo(k)fluoranthene	500	µg/L	2	–	–	–	
580	LF03-sp	Water	1994	Benzoic acid	2.50E+03	µg/L	2	–	–	–	
581	LF03-sp	Water	1994	Benzyl alcohol	1.00E+03	µg/L	2	–	–	–	
582	LF03-sp	Water	1994	Beryllium	2	µg/L	2	–	–	–	
583	LF03-sp	Water	1994	Bis(2-chloroethoxy)methane	500	µg/L	2	–	–	–	
584	LF03-sp	Water	1994	Bis(2-chloroethyl)ether	500	µg/L	2	–	–	–	
585	LF03-sp	Water	1994	Bis(2-chloroisopropyl)ether	500	µg/L	2	–	–	–	
586	LF03-sp	Water	1994	Bis(2-ethylhexyl)phthalate	500	µg/L	2	–	–	–	
587	LF03-sp	Water	1994	Bromide	100	µg/L	1	–	–	–	
588	LF03-sp	Water	1994	Bromodichloromethane	10	µg/L	1	–	–	–	
589	LF03-sp	Water	1994	Bromoform	10	µg/L	1	–	–	–	
590	LF03-sp	Water	1994	Bromomethane	20	µg/L	1	–	–	–	
591	LF03-sp	Water	1994	Butylbenzylphthalate	500	µg/L	2	–	–	–	
592	LF03-sp	Water	1994	Cadmium	1	µg/L	2	1	1.9	1.9	83M08
593	LF03-sp	Water	1994	Calcium	N/A	µg/L	2	2	5.84E+05	6.38E+05	83M08F
594	LF03-sp	Water	1994	Carbazole	500	µg/L	2	–	–	–	
595	LF03-sp	Water	1994	Carbon tetrachloride	5	µg/L	1	–	–	–	
596	LF03-sp	Water	1994	Chloride	N/A	µg/L	1	1	9.90E+04	9.90E+04	83M08
597	LF03-sp	Water	1994	Chlorobenzene	10	µg/L	2	–	–	–	
598	LF03-sp	Water	1994	Chloroethane	10	µg/L	1	–	–	–	
599	LF03-sp	Water	1994	Chloroform	10	µg/L	1	–	–	–	
600	LF03-sp	Water	1994	Chloromethane	10	µg/L	1	–	–	–	
601	LF03-sp	Water	1994	Chromium	N/A	µg/L	2	2	20.7	26	83M08F
602	LF03-sp	Water	1994	Chrysene	500	µg/L	2	–	–	–	
603	LF03-sp	Water	1994	Cis-1,3-dichloropropene	5	µg/L	1	–	–	–	
604	LF03-sp	Water	1994	Copper	N/A	µg/L	2	2	20.2	172	83M08F
605	LF03-sp	Water	1994	d-BHC	0.05	µg/L	1	–	–	–	
606	LF03-sp	Water	1994	Di-n-butylphthalate	500	µg/L	2	–	–	–	
607	LF03-sp	Water	1994	Di-n-octylphthalate	500	µg/L	2	–	–	–	
608	LF03-sp	Water	1994	Dibenz(a,h)anthracene	500	µg/L	2	–	–	–	
609	LF03-sp	Water	1994	Dibenzofuran	500	µg/L	2	–	–	–	
610	LF03-sp	Water	1994	Dibromochloromethane	10	µg/L	1	–	–	–	
611	LF03-sp	Water	1994	Dichlorodifluoromethane	N/A	µg/L	1	1	650	650	83M08
612	LF03-sp	Water	1994	Dieldrin	0.1	µg/L	1	–	–	–	
613	LF03-sp	Water	1994	Diethylphthalate	500	µg/L	2	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
614	LF03-sp	Water	1994	Dimethylphthalate	500	µg/L	2	–	–	–	
615	LF03-sp	Water	1994	Endosulfan I	0.05	µg/L	1	–	–	–	
616	LF03-sp	Water	1994	Endosulfan II	0.1	µg/L	1	–	–	–	
617	LF03-sp	Water	1994	Endosulfan sulfate	0.1	µg/L	1	–	–	–	
618	LF03-sp	Water	1994	Endrin	0.1	µg/L	1	–	–	–	
619	LF03-sp	Water	1994	Endrin aldehyde	0.1	µg/L	1	–	–	–	
620	LF03-sp	Water	1994	Ethylbenzene	N/A	µg/L	1	1	38	38	83M08
621	LF03-sp	Water	1994	Fluoranthene	500	µg/L	2	–	–	–	
622	LF03-sp	Water	1994	Fluorene	500	µg/L	2	–	–	–	
623	LF03-sp	Water	1994	g-BHC	0.05	µg/L	1	–	–	–	
624	LF03-sp	Water	1994	g-Chlordane	0.05	µg/L	1	–	–	–	
625	LF03-sp	Water	1994	Heptachlor	0.05	µg/L	1	–	–	–	
626	LF03-sp	Water	1994	Heptachlor epoxide	0.05	µg/L	1	–	–	–	
627	LF03-sp	Water	1994	Hexachlorobenzene	500	µg/L	2	–	–	–	
628	LF03-sp	Water	1994	Hexachlorobutadiene	500	µg/L	2	–	–	–	
629	LF03-sp	Water	1994	Hexachlorocyclopentadiene	500	µg/L	2	–	–	–	
630	LF03-sp	Water	1994	Hexachloroethane	500	µg/L	2	–	–	–	
631	LF03-sp	Water	1994	Indeno(1,2,3-cd)pyrene	500	µg/L	2	–	–	–	
632	LF03-sp	Water	1994	Iron	N/A	µg/L	2	2	5.45E+05	5.68E+05	83M08F
633	LF03-sp	Water	1994	Isophorone	500	µg/L	2	–	–	–	
634	LF03-sp	Water	1994	Lead	N/A	µg/L	2	2	11	16.6	83M08F
635	LF03-sp	Water	1994	M,p-xylene	N/A	µg/L	1	1	44	44	83M08
636	LF03-sp	Water	1994	Magnesium	N/A	µg/L	2	2	4.99E+04	5.27E+04	83M08F
637	LF03-sp	Water	1994	Manganese	N/A	µg/L	2	2	7.42E+03	8.29E+03	83M08F
638	LF03-sp	Water	1994	Methoxychlor	0.5	µg/L	1	–	–	–	
639	LF03-sp	Water	1994	Methylene chloride	N/A	µg/L	1	1	250	250	83M08
640	LF03-sp	Water	1994	n-Nitroso-di-n-propylamine	500	µg/L	2	–	–	–	
641	LF03-sp	Water	1994	n-Nitrosodiphenylamine (1)	500	µg/L	2	–	–	–	
642	LF03-sp	Water	1994	Naphthalene	500	µg/L	2	–	–	–	
643	LF03-sp	Water	1994	Nickel	N/A	µg/L	1	1	27.2	27.2	83M08
644	LF03-sp	Water	1994	Nitrobenzene	500	µg/L	2	–	–	–	
645	LF03-sp	Water	1994	o-Xylene	N/A	µg/L	1	1	47	47	83M08
646	LF03-sp	Water	1994	PCB-1016	1	µg/L	1	–	–	–	
647	LF03-sp	Water	1994	PCB-1221	2	µg/L	1	–	–	–	
648	LF03-sp	Water	1994	PCB-1232	1	µg/L	1	–	–	–	
649	LF03-sp	Water	1994	PCB-1242	1	µg/L	1	–	–	–	
650	LF03-sp	Water	1994	PCB-1248	1	µg/L	1	–	–	–	
651	LF03-sp	Water	1994	PCB-1254	1	µg/L	1	–	–	–	
652	LF03-sp	Water	1994	PCB-1260	1	µg/L	1	–	–	–	
653	LF03-sp	Water	1994	Pentachlorophenol	2.50E+03	µg/L	2	–	–	–	
654	LF03-sp	Water	1994	Phenanthrene	500	µg/L	2	–	–	–	
655	LF03-sp	Water	1994	Phenol	500	µg/L	2	1	250	250	83M08
656	LF03-sp	Water	1994	Potassium	N/A	µg/L	2	2	4.66E+04	4.85E+04	83M08F
657	LF03-sp	Water	1994	Pyrene	500	µg/L	2	–	–	–	
658	LF03-sp	Water	1994	Silver	1	µg/L	2	–	–	–	
659	LF03-sp	Water	1994	Sodium	N/A	µg/L	2	2	9.15E+04	9.88E+04	83M08F
660	LF03-sp	Water	1994	Sulfate	100	µg/L	1	–	–	–	
661	LF03-sp	Water	1994	Tetrachloroethene (PCE)	N/A	µg/L	1	1	53	53	83M08
662	LF03-sp	Water	1994	Toluene	N/A	µg/L	1	1	460	460	83M08
663	LF03-sp	Water	1994	Total dissolved solids	N/A	µg/L	1	1	4.60E+06	4.60E+06	83M08
664	LF03-sp	Water	1994	Toxaphene	5	µg/L	1	–	–	–	
665	LF03-sp	Water	1994	Trans-1,2-dichloroethene	10	µg/L	1	–	–	–	
666	LF03-sp	Water	1994	Trans-1,3-dichloropropene	5	µg/L	1	–	–	–	
667	LF03-sp	Water	1994	Trichloroethene (TCE)	N/A	µg/L	1	1	150	150	83M08
668	LF03-sp	Water	1994	Trichlorofluoromethane	N/A	µg/L	1	1	13	13	83M08
669	LF03-sp	Water	1994	Vinyl chloride	N/A	µg/L	1	1	17	17	83M08
670	LF03-sp	Water	1994	Zinc	N/A	µg/L	2	2	172	249	83M08
671	LF03/FT09	Water	1994	(Technical) chlordane	1	µg/L	22	–	–	–	
672	LF03/FT09	Water	1994	1,1,1-Trichloroethane	1	µg/L	22	1	1.5	1.5	03M10
673	LF03/FT09	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	22	–	–	–	
674	LF03/FT09	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	22	–	–	–	
675	LF03/FT09	Water	1994	1,1-Dichloroethane	1	µg/L	22	1	33	33	03M08
676	LF03/FT09	Water	1994	1,1-Dichloroethene	0.5	µg/L	22	–	–	–	
677	LF03/FT09	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	35	–	–	–	
678	LF03/FT09	Water	1994	1,2-Dichlorobenzene	10	µg/L	79	2	24	25	03M08DD
679	LF03/FT09	Water	1994	1,2-Dichloroethane	0.5	µg/L	22	–	–	–	
680	LF03/FT09	Water	1994	1,2-Dichloropropane	0.5	µg/L	22	–	–	–	
681	LF03/FT09	Water	1994	1,3-Dichlorobenzene	10	µg/L	79	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
682	LF03/FT09	Water	1994	1,4-Dichlorobenzene	10	µg/L	79	2	64	82	03M08
683	LF03/FT09	Water	1994	2,4,5-Trichlorophenol	10	µg/L	35	–	–	–	
684	LF03/FT09	Water	1994	2,4,6-Trichlorophenol	10	µg/L	35	–	–	–	
685	LF03/FT09	Water	1994	2,4-Dichlorophenol	10	µg/L	35	–	–	–	
686	LF03/FT09	Water	1994	2,4-Dimethylphenol	10	µg/L	35	–	–	–	
687	LF03/FT09	Water	1994	2,4-Dinitrophenol	50	µg/L	35	–	–	–	
688	LF03/FT09	Water	1994	2,4-Dinitrotoluene	50	µg/L	70	–	–	–	
689	LF03/FT09	Water	1994	2,6-Dinitrotoluene	10	µg/L	35	–	–	–	
690	LF03/FT09	Water	1994	2-Chloroethylvinyl ether	2	µg/L	22	–	–	–	
691	LF03/FT09	Water	1994	2-Chloronaphthalene	10	µg/L	35	–	–	–	
692	LF03/FT09	Water	1994	2-Chlorophenol	10	µg/L	35	–	–	–	
693	LF03/FT09	Water	1994	2-Methylnaphthalene	10	µg/L	35	–	–	–	
694	LF03/FT09	Water	1994	2-Methylphenol	10	µg/L	35	–	–	–	
695	LF03/FT09	Water	1994	2-Nitroaniline	50	µg/L	35	–	–	–	
696	LF03/FT09	Water	1994	2-Nitrophenol	10	µg/L	35	–	–	–	
697	LF03/FT09	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	35	–	–	–	
698	LF03/FT09	Water	1994	3-Nitroaniline	50	µg/L	35	–	–	–	
699	LF03/FT09	Water	1994	4,4'-DDD	0.1	µg/L	22	1	0.21	0.21	03M01
700	LF03/FT09	Water	1994	4,4'-DDE	0.1	µg/L	22	–	–	–	
701	LF03/FT09	Water	1994	4,4'-DDT	0.1	µg/L	22	–	–	–	
702	LF03/FT09	Water	1994	4-Bromophenyl-phenylether	10	µg/L	35	–	–	–	
703	LF03/FT09	Water	1994	4-Chloro-3-methylphenol	20	µg/L	35	–	–	–	
704	LF03/FT09	Water	1994	4-Chloroaniline	20	µg/L	35	–	–	–	
705	LF03/FT09	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	35	–	–	–	
706	LF03/FT09	Water	1994	4-Methylphenol	10	µg/L	35	2	4.80E+03	6.20E+03	03M08
707	LF03/FT09	Water	1994	4-Nitroaniline	20	µg/L	35	–	–	–	
708	LF03/FT09	Water	1994	4-Nitrophenol	50	µg/L	35	–	–	–	
709	LF03/FT09	Water	1994	a-BHC	0.05	µg/L	22	–	–	–	
710	LF03/FT09	Water	1994	a-Chlordane	0.05	µg/L	22	–	–	–	
711	LF03/FT09	Water	1994	Acenaphthene	10	µg/L	35	–	–	–	
712	LF03/FT09	Water	1994	Acenaphthylene	10	µg/L	35	–	–	–	
713	LF03/FT09	Water	1994	Aldrin	0.05	µg/L	22	–	–	–	
714	LF03/FT09	Water	1994	Aluminum	31	µg/L	25	20	211	3.78E+04	03M18
715	LF03/FT09	Water	1994	Anthracene	10	µg/L	35	–	–	–	
716	LF03/FT09	Water	1994	Antimony	1	µg/L	38	–	–	–	
717	LF03/FT09	Water	1994	Arsenic	3	µg/L	37	36	4.5	382	03M12F
718	LF03/FT09	Water	1994	b-BHC	0.05	µg/L	22	–	–	–	
719	LF03/FT09	Water	1994	Barium	N/A	µg/L	34	34	128	1.07E+03	03M01
720	LF03/FT09	Water	1994	Benzene	1	µg/L	22	4	1.7	20	03M08
721	LF03/FT09	Water	1994	Benzo(a)anthracene	10	µg/L	35	–	–	–	
722	LF03/FT09	Water	1994	Benzo(a)pyrene	10	µg/L	35	–	–	–	
723	LF03/FT09	Water	1994	Benzo(b)fluoranthene	10	µg/L	35	–	–	–	
724	LF03/FT09	Water	1994	Benzo(g,h,i)perylene	10	µg/L	35	–	–	–	
725	LF03/FT09	Water	1994	Benzo(k)fluoranthene	10	µg/L	35	–	–	–	
726	LF03/FT09	Water	1994	Benzoic acid	50	µg/L	35	–	–	–	
727	LF03/FT09	Water	1994	Benzyl alcohol	20	µg/L	35	–	–	–	
728	LF03/FT09	Water	1994	Beryllium	1	µg/L	43	1	1.6	1.6	03M12F
729	LF03/FT09	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	35	–	–	–	
730	LF03/FT09	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	35	–	–	–	
731	LF03/FT09	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	35	–	–	–	
732	LF03/FT09	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	35	2	3.5	78	03M03
733	LF03/FT09	Water	1994	Bromide	100	µg/L	22	4	120	480	03M01
734	LF03/FT09	Water	1994	Bromodichloromethane	1	µg/L	22	–	–	–	
735	LF03/FT09	Water	1994	Bromoform	1	µg/L	22	–	–	–	
736	LF03/FT09	Water	1994	Bromomethane	2	µg/L	22	–	–	–	
737	LF03/FT09	Water	1994	Butylbenzylphthalate	10	µg/L	35	–	–	–	
738	LF03/FT09	Water	1994	Cadmium	1	µg/L	40	4	1.1	11.7	03M02
739	LF03/FT09	Water	1994	Calcium	N/A	µg/L	44	44	3.52E+04	6.38E+05	03M08F
740	LF03/FT09	Water	1994	Carbazole	10	µg/L	35	–	–	–	
741	LF03/FT09	Water	1994	Carbon tetrachloride	0.5	µg/L	22	–	–	–	
742	LF03/FT09	Water	1994	Chloride	N/A	µg/L	22	22	1.00E+03	9.90E+04	03M08
743	LF03/FT09	Water	1994	Chlorobenzene	1	µg/L	44	–	–	–	
744	LF03/FT09	Water	1994	Chloroethane	1	µg/L	22	–	–	–	
745	LF03/FT09	Water	1994	Chloroform	1	µg/L	22	–	–	–	
746	LF03/FT09	Water	1994	Chloromethane	1	µg/L	22	–	–	–	
747	LF03/FT09	Water	1994	Chromium	1	µg/L	29	13	10.1	92	03M12F
748	LF03/FT09	Water	1994	Chrysene	10	µg/L	35	–	–	–	
749	LF03/FT09	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	22	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
750	LF03/FT09	Water	1994	Cobalt	1	µg/L	12	–	–	–	
751	LF03/FT09	Water	1994	Copper	1	µg/L	35	21	11.9	252	03M18
752	LF03/FT09	Water	1994	d-BHC	0.05	µg/L	22	–	–	–	
753	LF03/FT09	Water	1994	Di-n-butylphthalate	10	µg/L	35	5	2.8	5.2	03Mm02
754	LF03/FT09	Water	1994	Di-n-octylphthalate	10	µg/L	35	–	–	–	
755	LF03/FT09	Water	1994	Dibenz(a,h)anthracene	10	µg/L	35	–	–	–	
756	LF03/FT09	Water	1994	Dibenzofuran	10	µg/L	35	–	–	–	
757	LF03/FT09	Water	1994	Dibromochloromethane	1	µg/L	22	–	–	–	
758	LF03/FT09	Water	1994	Dichlorodifluoromethane	1	µg/L	22	5	1.2	650	03M08
759	LF03/FT09	Water	1994	Dieldrin	0.1	µg/L	22	–	–	–	
760	LF03/FT09	Water	1994	Diethylphthalate	10	µg/L	35	1	1.1	1.1	03Mm02
761	LF03/FT09	Water	1994	Dimethylphthalate	10	µg/L	35	–	–	–	
762	LF03/FT09	Water	1994	Endosulfan I	0.05	µg/L	22	–	–	–	
763	LF03/FT09	Water	1994	Endosulfan II	0.1	µg/L	22	–	–	–	
764	LF03/FT09	Water	1994	Endosulfan sulfate	0.1	µg/L	22	–	–	–	
765	LF03/FT09	Water	1994	Endrin	0.1	µg/L	22	–	–	–	
766	LF03/FT09	Water	1994	Endrin aldehyde	0.1	µg/L	22	–	–	–	
767	LF03/FT09	Water	1994	Ethylbenzene	1	µg/L	22	3	1.5	38	03M08
768	LF03/FT09	Water	1994	Fluoranthene	10	µg/L	35	–	–	–	
769	LF03/FT09	Water	1994	Fluorene	10	µg/L	35	–	–	–	
770	LF03/FT09	Water	1994	g-BHC	0.05	µg/L	22	–	–	–	
771	LF03/FT09	Water	1994	g-Chlordane	0.05	µg/L	22	–	–	–	
772	LF03/FT09	Water	1994	Heptachlor	0.05	µg/L	22	–	–	–	
773	LF03/FT09	Water	1994	Heptachlor epoxide	0.05	µg/L	22	–	–	–	
774	LF03/FT09	Water	1994	Hexachlorobenzene	10	µg/L	35	–	–	–	
775	LF03/FT09	Water	1994	Hexachlorobutadiene	10	µg/L	35	–	–	–	
776	LF03/FT09	Water	1994	Hexachlorocyclopentadiene	10	µg/L	35	–	–	–	
777	LF03/FT09	Water	1994	Hexachloroethane	10	µg/L	35	–	–	–	
778	LF03/FT09	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	35	–	–	–	
779	LF03/FT09	Water	1994	Iron	N/A	µg/L	24	24	1.82E+03	5.88E+05	03M08F
780	LF03/FT09	Water	1994	Isophorone	10	µg/L	35	–	–	–	
781	LF03/FT09	Water	1994	Lead	1	µg/L	34	20	3.4	61.9	03M02
782	LF03/FT09	Water	1994	M,p-xylene	1	µg/L	22	2	3.1	44	03M08
783	LF03/FT09	Water	1994	Magnesium	N/A	µg/L	44	44	7.82E+03	5.37E+04	03M01
784	LF03/FT09	Water	1994	Manganese	N/A	µg/L	44	44	295	8.29E+03	03M08F
785	LF03/FT09	Water	1994	Methoxychlor	0.5	µg/L	22	–	–	–	
786	LF03/FT09	Water	1994	Methylene chloride	1	µg/L	22	1	250	250	03M08
787	LF03/FT09	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	35	–	–	–	
788	LF03/FT09	Water	1994	n-Nitrosodiphenylamine	10	µg/L	35	–	–	–	
789	LF03/FT09	Water	1994	Naphthalene	10	µg/L	35	1	1.3	1.3	03Mm03
790	LF03/FT09	Water	1994	Nickel	1	µg/L	7	6	23.5	56.5	03M18
791	LF03/FT09	Water	1994	Nitrobenzene	10	µg/L	35	–	–	–	
792	LF03/FT09	Water	1994	o-Xylene	1	µg/L	22	3	1.8	47	03M08
793	LF03/FT09	Water	1994	PCB-1016	1	µg/L	22	–	–	–	
794	LF03/FT09	Water	1994	PCB-1221	2	µg/L	22	–	–	–	
795	LF03/FT09	Water	1994	PCB-1232	1	µg/L	22	–	–	–	
796	LF03/FT09	Water	1994	PCB-1242	1	µg/L	22	–	–	–	
797	LF03/FT09	Water	1994	PCB-1248	1	µg/L	22	–	–	–	
798	LF03/FT09	Water	1994	PCB-1254	1	µg/L	22	–	–	–	
799	LF03/FT09	Water	1994	PCB-1260	1	µg/L	22	–	–	–	
800	LF03/FT09	Water	1994	Pentachlorophenol	50	µg/L	35	–	–	–	
801	LF03/FT09	Water	1994	Phenanthrene	10	µg/L	35	–	–	–	
802	LF03/FT09	Water	1994	Phenol	10	µg/L	35	1	250	250	03M08
803	LF03/FT09	Water	1994	Potassium	N/A	µg/L	23	23	5.04E+03	4.85E+04	03M08F
804	LF03/FT09	Water	1994	Pyrene	10	µg/L	35	–	–	–	
805	LF03/FT09	Water	1994	Silver	1	µg/L	43	–	–	–	
806	LF03/FT09	Water	1994	Sodium	N/A	µg/L	36	36	5.33E+03	9.88E+04	03M08F
807	LF03/FT09	Water	1994	Sulfate	100	µg/L	22	21	3.80E+03	2.30E+04	03Mm02D
808	LF03/FT09	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	22	1	53	53	03M08
809	LF03/FT09	Water	1994	Tin	1	µg/L	22	–	–	–	
810	LF03/FT09	Water	1994	Toluene	1	µg/L	22	2	2.5	480	03M08
811	LF03/FT09	Water	1994	Total dissolved solids	N/A	µg/L	22	22	1.80E+05	4.60E+06	03M08
812	LF03/FT09	Water	1994	Toxaphene	5	µg/L	22	–	–	–	
813	LF03/FT09	Water	1994	Trans-1,2-dichloroethene	1	µg/L	22	–	–	–	
814	LF03/FT09	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	22	–	–	–	
815	LF03/FT09	Water	1994	Trichloroethene (TCE)	0.5	µg/L	22	6	0.64	150	03M08
816	LF03/FT09	Water	1994	Trichlorofluoromethane	1	µg/L	22	1	13	13	03M08
817	LF03/FT09	Water	1994	Vanadium	1	µg/L	25	8	10.8	43	03M12

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
818	LF03/FT09	Water	1994	Vinyl chloride	0.5	µg/L	22	5	0.54	17	03M08
819	LF03/FT09	Water	1994	Zinc	2	µg/L	25	21	20.4	1.03E+03	03M02
820	LF03/FT09	Surface Soil	1992	0 0 0-Triethyl phosphorothioate	660	µg/kg	9	–	–	–	
821	LF03/FT09	Surface Soil	1992	0 0-Diethyl 0-2-pyrazinyl phosphorothioa	660	µg/kg	9	–	–	–	
822	LF03/FT09	Surface Soil	1988	1 1 1-Trichloroethane	50	µg/kg	10	1	240	240	03M02
823	LF03/FT09	Surface Soil	1988	1 1-Dichloroethylene	100	µg/kg	10	1	300	300	03M02
824	LF03/FT09	Surface Soil	1992	1.2.4-Trichlorobenzene	660	µg/kg	9	–	–	–	
825	LF03/FT09	Surface Soil	1992	1 2-Dichlorobenzene	660	µg/kg	9	–	–	–	
826	LF03/FT09	Surface Soil	1992	1,3-Dichlorobenzene	660	µg/kg	9	–	–	–	
827	LF03/FT09	Surface Soil	1992	1 4-Dichlorobenzene	660	µg/kg	9	–	–	–	
828	LF03/FT09	Surface Soil	1992	1,4-Naphthoquinone	660	µg/kg	9	–	–	–	
829	LF03/FT09	Surface Soil	1992	1-Naphthylamine	660	µg/kg	9	–	–	–	
830	LF03/FT09	Surface Soil	1992	2.3.4.6-Tetrachlorophenol	660	µg/kg	9	–	–	–	
831	LF03/FT09	Surface Soil	1992	2.4.5-Trichlorophenol	660	µg/kg	9	–	–	–	
832	LF03/FT09	Surface Soil	1992	2.4.6-Trichlorophenol	660	µg/kg	9	–	–	–	
833	LF03/FT09	Surface Soil	1992	2.4-Dichlorophenol	660	µg/kg	9	–	–	–	
834	LF03/FT09	Surface Soil	1992	2.4-Dimethylphenol	660	µg/kg	9	–	–	–	
835	LF03/FT09	Surface Soil	1992	2.4-Dinitrophenol	3.30E+03	µg/kg	9	–	–	–	
836	LF03/FT09	Surface Soil	1992	2.4-Dinitrotoluene	660	µg/kg	9	–	–	–	
837	LF03/FT09	Surface Soil	1992	2.6-Dichlorophenol	660	µg/kg	9	–	–	–	
838	LF03/FT09	Surface Soil	1992	2.6-Dinitrotoluene	660	µg/kg	9	–	–	–	
839	LF03/FT09	Surface Soil	1992	2-Acetylaminofluorene	660	µg/kg	9	–	–	–	
840	LF03/FT09	Surface Soil	1992	2-Chloronaphthalene	660	µg/kg	9	–	–	–	
841	LF03/FT09	Surface Soil	1992	2-Chlorophenol	660	µg/kg	9	–	–	–	
842	LF03/FT09	Surface Soil	1992	2-Methylnaphthalene	660	µg/kg	9	1	4.10E+03	4.10E+03	03SYS09
843	LF03/FT09	Surface Soil	1992	2-Methylphenol	660	µg/kg	9	–	–	–	
844	LF03/FT09	Surface Soil	1992	2-Naphthylamine	660	µg/kg	9	–	–	–	
845	LF03/FT09	Surface Soil	1992	2-Nitroaniline	3.30E+03	µg/kg	9	–	–	–	
846	LF03/FT09	Surface Soil	1992	2-Nitrophenol	660	µg/kg	9	–	–	–	
847	LF03/FT09	Surface Soil	1992	3,3'-Dichlorobenzidine	1.30E+03	µg/kg	9	–	–	–	
848	LF03/FT09	Surface Soil	1992	3,3'-Dimethylbenzidine	660	µg/kg	9	–	–	–	
849	LF03/FT09	Surface Soil	1992	3-Methylcholanthrene	660	µg/kg	9	–	–	–	
850	LF03/FT09	Surface Soil	1992	3-Nitroaniline	3.30E+03	µg/kg	9	–	–	–	
851	LF03/FT09	Surface Soil	1992	4.6-Dinitro-2-methylphenol	3.30E+03	µg/kg	9	–	–	–	
852	LF03/FT09	Surface Soil	1992	4-Aminobiphenyl	660	µg/kg	9	–	–	–	
853	LF03/FT09	Surface Soil	1992	4-Bromophenylphenyl ether	660	µg/kg	9	–	–	–	
854	LF03/FT09	Surface Soil	1992	4-Chloro-3-methylphenol	1.30E+03	µg/kg	9	–	–	–	
855	LF03/FT09	Surface Soil	1992	4-Chloroaniline	1.30E+03	µg/kg	9	–	–	–	
856	LF03/FT09	Surface Soil	1992	4-Chlorophenylphenyl ether	660	µg/kg	9	–	–	–	
857	LF03/FT09	Surface Soil	1989	4-Methylphenol	30	µg/kg	9	2	30	600	03M08
858	LF03/FT09	Surface Soil	1992	4-Methylphenol	660	µg/kg	9	–	–	–	
859	LF03/FT09	Surface Soil	1992	4-Nitroaniline	3.30E+03	µg/kg	9	–	–	–	
860	LF03/FT09	Surface Soil	1992	4-Nitrophenol	3.30E+03	µg/kg	9	–	–	–	
861	LF03/FT09	Surface Soil	1992	4-Nitroquinoline-1-oxide	660	µg/kg	9	–	–	–	
862	LF03/FT09	Surface Soil	1992	5-Nitro-o-toluidine	660	µg/kg	9	–	–	–	
863	LF03/FT09	Surface Soil	1992	7,12-Dimethylbenz[a]anthracene	660	µg/kg	9	–	–	–	
864	LF03/FT09	Surface Soil	1988	Acenaphthene	10	µg/kg	10	1	110	110	03M01
865	LF03/FT09	Surface Soil	1992	Acenaphthene	660	µg/kg	9	–	–	–	
866	LF03/FT09	Surface Soil	1988	Acenaphthylene	10	µg/kg	10	–	–	–	
867	LF03/FT09	Surface Soil	1992	Acenaphthylene	660	µg/kg	9	–	–	–	
868	LF03/FT09	Surface Soil	1992	Acetophenone	660	µg/kg	9	–	–	–	
869	LF03/FT09	Surface Soil	1992	Alpha,alpha-dimethylphenethylamine	660	µg/kg	9	–	–	–	
870	LF03/FT09	Surface Soil	1988	Aluminum	5.07E+06	µg/kg	11	2	5.16E+06	8.27E+06	03M03
871	LF03/FT09	Surface Soil	1992	Aniline	660	µg/kg	9	–	–	–	
872	LF03/FT09	Surface Soil	1992	Anthracene	660	µg/kg	9	–	–	–	
873	LF03/FT09	Surface Soil	1992	Aramite	660	µg/kg	9	–	–	–	
874	LF03/FT09	Surface Soil	1988	Arsenic	6.39E+03	µg/kg	9	1	1.23E+04	1.23E+04	03M05
875	LF03/FT09	Surface Soil	1988	Barium	5.33E+04	µg/kg	11	2	8.76E+04	9.07E+04	03M01
876	LF03/FT09	Surface Soil	1988	Benzene	44	µg/kg	10	1	65	65	03TP01
877	LF03/FT09	Surface Soil	1988	Benzo(a)anthracene	10	µg/kg	10	1	1.50E+03	1.50E+03	03M01
878	LF03/FT09	Surface Soil	1992	Benzo(a)anthracene	660	µg/kg	9	2	84	181	03SYS05
879	LF03/FT09	Surface Soil	1988	Benzo(a)pyrene	9	µg/kg	10	1	1.70E+03	1.70E+03	03M01
880	LF03/FT09	Surface Soil	1992	Benzo(a)pyrene	660	µg/kg	9	3	79.1	200	03SYS05
881	LF03/FT09	Surface Soil	1988	Benzo(b)fluoranthene	30	µg/kg	10	1	2.10E+03	2.10E+03	03M01
882	LF03/FT09	Surface Soil	1992	Benzo(b)fluoranthene	660	µg/kg	9	3	63	250	03SYS05
883	LF03/FT09	Surface Soil	1988	Benzo(g,h,i)perylene	40	µg/kg	10	1	1.40E+03	1.40E+03	03M01
884	LF03/FT09	Surface Soil	1992	Benzo(ghi)perylene	660	µg/kg	9	1	200	200	03SYS05
885	LF03/FT09	Surface Soil	1992	Benzo(k)fluoranthene	660	µg/kg	9	3	69.6	190	03SYS05

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	CL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
886	LF03/FT09	Surface Soil	1992	Benzyl alcohol	1.30E+03	µg/kg	9	–	–	–	
887	LF03/FT09	Surface Soil	1988	Beryllium	2.44E+03	µg/kg	11	5	320	1.26E+03	03M01
888	LF03/FT09	Surface Soil	1992	Bis(2-chloroethoxy)methane	660	µg/kg	9	–	–	–	
889	LF03/FT09	Surface Soil	1992	Bis(2-chloroethyl) ether	560	µg/kg	9	–	–	–	
890	LF03/FT09	Surface Soil	1992	Bis(2-chloroisopropyl) ether	660	µg/kg	9	–	–	–	
891	LF03/FT09	Surface Soil	1992	Bis(2-ethylhexyl) phthalate	660	µg/kg	9	2	142	180	03SYS09
892	LF03/FT09	Surface Soil	1988	Bis(2-ethylhexyl)phthalate	100	µg/kg	10	2	340	1.70E+03	03M01
893	LF03/FT09	Surface Soil	1989	Bis(2-ethylhexyl)phthalate	50	µg/kg	9	1	590	590	03M08
894	LF03/FT09	Surface Soil	1989	Butylbenzylphthalate	30	µg/kg	9	2	40	150	03M08
895	LF03/FT09	Surface Soil	1992	Butylbenzylphthalate	660	µg/kg	9	–	–	–	
896	LF03/FT09	Surface Soil	1988	Cadmium	455	µg/kg	9	1	1.28E+03	1.28E+03	03M01
897	LF03/FT09	Surface Soil	1988	Calcium	N/A	µg/kg	11	11	1.78E+06	5.65E+07	03M02
898	LF03/FT09	Surface Soil	1992	Chlorinated benzenes	660	µg/kg	18	–	–	–	
899	LF03/FT09	Surface Soil	1992	Chlorobenzilate	660	µg/kg	9	–	–	–	
900	LF03/FT09	Surface Soil	1988	Chromium	N/A	µg/kg	11	11	6.53E+03	3.57E+04	03M02
901	LF03/FT09	Surface Soil	1988	Chrysene	70	µg/kg	10	1	2.30E+03	2.30E+03	03M01
902	LF03/FT09	Surface Soil	1992	Chrysene	660	µg/kg	9	4	75	250	03SYS05
903	LF03/FT09	Surface Soil	1988	Cobalt	N/A	µg/kg	11	11	4.36E+03	3.07E+04	03M02
904	LF03/FT09	Surface Soil	1988	Copper	N/A	µg/kg	11	11	1.01E+04	8.51E+04	03M02
905	LF03/FT09	Surface Soil	1988	DDD, pp'	1	µg/kg	3	–	–	–	
906	LF03/FT09	Surface Soil	1988	DDE, pp'	1	µg/kg	3	–	–	–	
907	LF03/FT09	Surface Soil	1988	DDT, pp'	1	µg/kg	3	–	–	–	
908	LF03/FT09	Surface Soil	1989	Di-n-butylphthalate	30	µg/kg	9	1	60	60	03M08
909	LF03/FT09	Surface Soil	1992	Di-n-butylphthalate	660	µg/kg	9	–	–	–	
910	LF03/FT09	Surface Soil	1988	Di-n-octylphthalate	150	µg/kg	10	1	270	270	03M01
911	LF03/FT09	Surface Soil	1992	Di-n-octylphthalate	660	µg/kg	9	–	–	–	
912	LF03/FT09	Surface Soil	1992	Diallate	660	µg/kg	9	–	–	–	
913	LF03/FT09	Surface Soil	1992	Dibenz[a,h]anthracene	660	µg/kg	9	–	–	–	
914	LF03/FT09	Surface Soil	1988	Dibenzo(a,h)anthracene	50	µg/kg	10	1	400	400	03M01
915	LF03/FT09	Surface Soil	1992	Dibenzofuran	660	µg/kg	9	–	–	–	
916	LF03/FT09	Surface Soil	1992	Diethyl phthalate	660	µg/kg	9	–	–	–	
917	LF03/FT09	Surface Soil	1989	Diethylphthalate	30	µg/kg	9	1	180	180	03M08
918	LF03/FT09	Surface Soil	1992	Dimethoate	660	µg/kg	9	–	–	–	
919	LF03/FT09	Surface Soil	1992	Dimethyl phthalate	660	µg/kg	9	–	–	–	
920	LF03/FT09	Surface Soil	1992	Diphenylamine	660	µg/kg	9	–	–	–	
921	LF03/FT09	Surface Soil	1988	Endosulfan, a	1	µg/kg	3	–	–	–	
922	LF03/FT09	Surface Soil	1988	Endrin aldehyde	1	µg/kg	3	–	–	–	
923	LF03/FT09	Surface Soil	1992	Ethyl methanesulfonate	660	µg/kg	9	–	–	–	
924	LF03/FT09	Surface Soil	1988	Ethylbenzene	80	µg/kg	10	1	100	100	03M02
925	LF03/FT09	Surface Soil	1992	Famphur	660	µg/kg	9	–	–	–	
926	LF03/FT09	Surface Soil	1988	Fluoranthene	50	µg/kg	10	1	4.50E+03	4.50E+03	03M01
927	LF03/FT09	Surface Soil	1992	Fluoranthene	660	µg/kg	9	4	140	410	03SYS05
928	LF03/FT09	Surface Soil	1992	Fluorene	660	µg/kg	9	–	–	–	
929	LF03/FT09	Surface Soil	1992	Hexachlorobenzene	660	µg/kg	9	–	–	–	
930	LF03/FT09	Surface Soil	1992	Hexachlorobutadiene	660	µg/kg	9	–	–	–	
931	LF03/FT09	Surface Soil	1992	Hexachlorocyclopentadiene	660	µg/kg	9	–	–	–	
932	LF03/FT09	Surface Soil	1992	Hexachloroethane	660	µg/kg	9	–	–	–	
933	LF03/FT09	Surface Soil	1992	Hexachlorophene	660	µg/kg	9	–	–	–	
934	LF03/FT09	Surface Soil	1992	Hexachloropropene	660	µg/kg	9	–	–	–	
935	LF03/FT09	Surface Soil	1988	Indeno(1,2,3-cd)pyrene	50	µg/kg	10	1	1.50E+03	1.50E+03	03M01
936	LF03/FT09	Surface Soil	1992	Indeno(1,2,3-cd)pyrene	660	µg/kg	9	1	200	200	03SYS05
937	LF03/FT09	Surface Soil	1988	Iron	N/A	µg/kg	11	11	9.05E+06	4.20E+07	03M01
938	LF03/FT09	Surface Soil	1992	Isodrin	660	µg/kg	9	–	–	–	
939	LF03/FT09	Surface Soil	1992	Isophorone	660	µg/kg	9	–	–	–	
940	LF03/FT09	Surface Soil	1992	Isosafrole	660	µg/kg	9	–	–	–	
941	LF03/FT09	Surface Soil	1992	Kepone	660	µg/kg	9	–	–	–	
942	LF03/FT09	Surface Soil	1992	Kerosene	660	µg/kg	9	6	137	1.10E+05	03SYS09
943	LF03/FT09	Surface Soil	1988	Lead	4.56E+03	µg/kg	11	2	1.07E+04	1.32E+05	03M01
944	LF03/FT09	Surface Soil	1989	Lead	N/A	µg/kg	14	14	2.94E+03	4.13E+04	03M08
945	LF03/FT09	Surface Soil	1992	m-Cresol	660	µg/kg	9	–	–	–	
946	LF03/FT09	Surface Soil	1992	m-Dinitrobenzene	660	µg/kg	9	–	–	–	
947	LF03/FT09	Surface Soil	1988	Magnesium	N/A	µg/kg	11	11	2.12E+06	1.48E+07	03M02
948	LF03/FT09	Surface Soil	1988	Manganese	N/A	µg/kg	11	11	1.40E+05	6.25E+05	03M01
949	LF03/FT09	Surface Soil	1988	Mercury	19.6	µg/kg	9	3	70.8	161	03M03
950	LF03/FT09	Surface Soil	1992	Methapyrilene	660	µg/kg	9	–	–	–	
951	LF03/FT09	Surface Soil	1992	Methyl methanesulfonate	660	µg/kg	9	–	–	–	
952	LF03/FT09	Surface Soil	1988	Methylene chloride	150	µg/kg	10	2	2.60E+03	4.40E+03	03M02
953	LF03/FT09	Surface Soil	1988	Molybdenum	2.40E+03	µg/kg	9	2	3.58E+03	7.25E+03	03M02

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1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
954	LF03/FT09	Surface Soil	1992	n-Nitroso-di-n-dipropylamine	660	µg/kg	9	–	–	–	
955	LF03/FT09	Surface Soil	1992	n-Nitrosodi-n-butylamine	660	µg/kg	9	–	–	–	
956	LF03/FT09	Surface Soil	1992	n-Nitrosodiethylamine	660	µg/kg	9	–	–	–	
957	LF03/FT09	Surface Soil	1992	n-Nitrosodimethylamine	660	µg/kg	9	–	–	–	
958	LF03/FT09	Surface Soil	1992	n-Nitrosodiphenylamine	660	µg/kg	9	–	–	–	
959	LF03/FT09	Surface Soil	1992	n-Nitrosomethylethylamine	660	µg/kg	9	–	–	–	
960	LF03/FT09	Surface Soil	1992	n-Nitrosomorpholine	660	µg/kg	9	–	–	–	
961	LF03/FT09	Surface Soil	1992	n-Nitrosopiperidine	660	µg/kg	9	–	–	–	
962	LF03/FT09	Surface Soil	1992	Naphthalene	660	µg/kg	9	2	74.5	1.50E+03	03SYS09
963	LF03/FT09	Surface Soil	1988	Nickel	N/A	µg/kg	11	11	9.37E+03	6.43E+04	03M02
964	LF03/FT09	Surface Soil	1992	Nitrobenzene	660	µg/kg	9	–	–	–	
965	LF03/FT09	Surface Soil	1992	Nitrosopyrrolidine	660	µg/kg	9	–	–	–	
966	LF03/FT09	Surface Soil	1992	o-Toluidine	660	µg/kg	9	–	–	–	
967	LF03/FT09	Surface Soil	1992	p-Dimethylaminoazobenzene	660	µg/kg	9	–	–	–	
968	LF03/FT09	Surface Soil	1992	p-Phenylenediamine	660	µg/kg	9	–	–	–	
969	LF03/FT09	Surface Soil	1992	Parathion	660	µg/kg	9	–	–	–	
970	LF03/FT09	Surface Soil	1992	Pentachloronitrobenzene (pcnb)	660	µg/kg	9	–	–	–	
971	LF03/FT09	Surface Soil	1992	Pentachlorophenol	3.30E+03	µg/kg	9	–	–	–	
972	LF03/FT09	Surface Soil	1992	Phenacetin	660	µg/kg	9	–	–	–	
973	LF03/FT09	Surface Soil	1988	Phenanthrene	20	µg/kg	10	1	2.20E+03	2.20E+03	03M01
974	LF03/FT09	Surface Soil	1992	Phenanthrene	660	µg/kg	9	5	81	130	03SYS05
975	LF03/FT09	Surface Soil	1992	Phenol	660	µg/kg	9	–	–	–	
976	LF03/FT09	Surface Soil	1988	Potassium	N/A	µg/kg	11	11	4.28E+05	3.45E+06	03M02
977	LF03/FT09	Surface Soil	1992	Pronamide	660	µg/kg	9	–	–	–	
978	LF03/FT09	Surface Soil	1988	Pyrene	60	µg/kg	10	1	2.40E+03	2.40E+03	03M01
979	LF03/FT09	Surface Soil	1992	Pyrene	660	µg/kg	9	4	110	330	03SYS05
980	LF03/FT09	Surface Soil	1992	Safrol	660	µg/kg	9	–	–	–	
981	LF03/FT09	Surface Soil	1988	Sodium	N/A	µg/kg	11	11	1.39E+05	2.71E+06	03M02
982	LF03/FT09	Surface Soil	1992	Sym-trinitrobenzene	660	µg/kg	9	–	–	–	
983	LF03/FT09	Surface Soil	1992	Tetraethyl dithiopyrophosphate	660	µg/kg	9	–	–	–	
984	LF03/FT09	Surface Soil	1988	Thallium	1.79E+04	µg/kg	9	2	2.61E+04	2.94E+04	03M01
985	LF03/FT09	Surface Soil	1988	Toluene	160	µg/kg	10	1	470	470	03M02
986	LF03/FT09	Surface Soil	1988	TPH	1.02E+04	µg/kg	9	4	2.81E+04	1.30E+06	03M01
987	LF03/FT09	Surface Soil	1989	TPH	1.00E+04	µg/kg	39	19	1.00E+04	4.90E+06	03SB12
988	LF03/FT09	Surface Soil	1992	Tributyl phosphate	660	µg/kg	9	–	–	–	
989	LF03/FT09	Surface Soil	1988	Trichloroethene	30	µg/kg	10	2	60	160	03M02
990	LF03/FT09	Surface Soil	1988	Trichlorofluoromethane	150	µg/kg	10	1	540	540	03M02
991	LF03/FT09	Surface Soil	1988	Vanadium	N/A	µg/kg	11	11	1.21E+04	1.55E+05	03M02
992	LF03/FT09	Surface Soil	1988	Zinc	4.63E+04	µg/kg	11	10	1.01E+04	1.68E+05	03M01
993	LF03/FT09	Soil	1988	1,1,1-Trichloroethane	60	µg/kg	6	–	–	–	
994	LF03/FT09	Soil	1988	1,1-Dichloroethylene	100	µg/kg	6	–	–	–	
995	LF03/FT09	Soil	1988	Acenaphthene	10	µg/kg	6	1	60	60	03M01
996	LF03/FT09	Soil	1988	Acenaphthylene	10	µg/kg	5	–	–	–	
997	LF03/FT09	Soil	1988	Aluminum	1.50E+07	µg/kg	8	2	8.99E+06	1.02E+07	03M03
998	LF03/FT09	Soil	1988	Arsenic	6.39E+03	µg/kg	6	1	8.55E+03	8.55E+03	03M03
999	LF03/FT09	Soil	1988	Barium	4.91E+05	µg/kg	8	2	1.49E+05	1.60E+05	03M01
1000	LF03/FT09	Soil	1988	Benzene	44	µg/kg	6	–	–	–	
1001	LF03/FT09	Soil	1988	Benzo(a)anthracene	10	µg/kg	6	–	–	–	
1002	LF03/FT09	Soil	1988	Benzo(a)pyrene	9	µg/kg	6	–	–	–	
1003	LF03/FT09	Soil	1988	Benzo(b)fluoranthene	30	µg/kg	6	–	–	–	
1004	LF03/FT09	Soil	1988	Benzo(g,h,i)perylene	40	µg/kg	6	–	–	–	
1005	LF03/FT09	Soil	1988	Beryllium	1.53E+03	µg/kg	8	2	320	1.22E+03	03M01
1006	LF03/FT09	Soil	1988	Bis(2-ethylhexyl)phthalate	100	µg/kg	6	–	–	–	
1007	LF03/FT09	Soil	1988	Cadmium	455	µg/kg	6	3	637	788	03M01
1008	LF03/FT09	Soil	1988	Calcium	N/A	µg/kg	8	8	5.65E+06	6.54E+07	03M01
1009	LF03/FT09	Soil	1988	Chromium	N/A	µg/kg	8	8	1.32E+04	4.78E+04	03M01
1010	LF03/FT09	Soil	1988	Chrysene	70	µg/kg	6	–	–	–	
1011	LF03/FT09	Soil	1988	Cobalt	N/A	µg/kg	8	8	7.20E+03	1.73E+04	03M01
1012	LF03/FT09	Soil	1988	Copper	N/A	µg/kg	8	8	1.91E+04	6.14E+04	03M01
1013	LF03/FT09	Soil	1988	DDD, pp'	1	µg/kg	3	–	–	–	
1014	LF03/FT09	Soil	1988	DDE, pp'	1	µg/kg	3	1	2	2	03M02
1015	LF03/FT09	Soil	1988	DDT, pp'	1	µg/kg	3	1	5	5	03M03
1016	LF03/FT09	Soil	1988	Di-n-octylphthalate	150	µg/kg	6	–	–	–	
1017	LF03/FT09	Soil	1988	Dibenzo(a,h)anthracene	50	µg/kg	6	–	–	–	
1018	LF03/FT09	Soil	1988	Endosulfan, a	1	µg/kg	3	–	–	–	
1019	LF03/FT09	Soil	1988	Endrin aldehyde	1	µg/kg	3	–	–	–	
1020	LF03/FT09	Soil	1988	Ethylbenzene	80	µg/kg	6	–	–	–	
1021	LF03/FT09	Soil	1988	Fluoranthene	50	µg/kg	6	–	–	–	

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1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1022	LF03/FT09	Soil	1988	Indeno(1,2,3-cd)pyrene	50	µg/kg	6	–	–	–	
1023	LF03/FT09	Soil	1988	Iron	N/A	µg/kg	8	8	1.37E+07	2.58E+07	03M02
1024	LF03/FT09	Soil	1992	Kerosene	N/A	µg/kg	10	10	48	1.59E+06	03SS09
1025	LF03/FT09	Soil	1988	Lead	4.56E+03	µg/kg	8	5	6.90E+03	1.18E+04	03M06
1026	LF03/FT09	Soil	1989	Lead	N/A	µg/kg	6	6	7.06E+03	1.12E+04	03SB09
1027	LF03/FT09	Soil	1988	Magnesium	N/A	µg/kg	8	8	4.11E+06	8.02E+06	03M01
1028	LF03/FT09	Soil	1988	Manganese	N/A	µg/kg	8	8	8.15E+04	4.25E+05	03M04
1029	LF03/FT09	Soil	1988	Mercury	19.6	µg/kg	6	–	–	–	
1030	LF03/FT09	Soil	1988	Methylene chloride	150	µg/kg	6	3	340	2.20E+03	03M01
1031	LF03/FT09	Soil	1988	Molybdenum	2.40E+03	µg/kg	6	1	3.99E+03	3.99E+03	03M01
1032	LF03/FT09	Soil	1988	Nickel	N/A	µg/kg	8	8	1.59E+04	4.41E+04	03M01
1033	LF03/FT09	Soil	1988	Phenanthrene	20	µg/kg	6	–	–	–	
1034	LF03/FT09	Soil	1988	Potassium	N/A	µg/kg	8	8	6.56E+05	3.74E+06	03M01
1035	LF03/FT09	Soil	1988	Pyrene	60	µg/kg	6	–	–	–	
1036	LF03/FT09	Soil	1988	Sodium	N/A	µg/kg	8	8	3.37E+05	6.50E+05	03M02
1037	LF03/FT09	Soil	1988	Thallium	1.79E+04	µg/kg	6	–	–	–	
1038	LF03/FT09	Soil	1988	Toluene	160	µg/kg	6	–	–	–	
1039	LF03/FT09	Soil	1992	Total dissolved solids	N/A	%	10	10	85.2	97.4	03SS02
1040	LF03/FT09	Soil	1992	Total petroleum hydrocarbons	0.02	µg/kg	10	6	0.04	6.7	03SS06
1041	LF03/FT09	Soil	1988	TPH	1.02E+04	µg/kg	6	2	1.57E+04	7.82E+04	03M02
1042	LF03/FT09	Soil	1989	TPH	1.00E+04	µg/kg	28	13	1.40E+04	1.50E+07	03SB09
1043	LF03/FT09	Soil	1988	Trichloroethene	30	µg/kg	6	–	–	–	
1044	LF03/FT09	Soil	1988	Trichlorofluoromethane	150	µg/kg	6	–	–	–	
1045	LF03/FT09	Soil	1988	Vanadium	N/A	µg/kg	8	8	2.87E+04	1.42E+05	03M01
1046	LF03/FT09	Soil	1988	Zinc	N/A	µg/kg	8	8	8.53E+03	6.82E+04	03M02
1047	LF04	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	2	–	–	–	
1048	LF04	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	2	–	–	–	
1049	LF04	Water	1992	1,1-Dichloroethane	1	µg/L	2	–	–	–	
1050	LF04	Water	1992	1,2-Dichloroethane	0.5	µg/L	2	–	–	–	
1051	LF04	Water	1992	1,4-Dichlorobenzene	2	µg/L	2	–	–	–	
1052	LF04	Water	1992	Antimony	200	µg/L	4	–	–	–	
1053	LF04	Water	1992	Arsenic	N/A	µg/L	1	1	120	120	04M02
1054	LF04	Water	1992	Barium	N/A	µg/L	4	4	350	1.90E+03	04M02
1055	LF04	Water	1992	Benzene	2	µg/L	2	–	–	–	
1056	LF04	Water	1992	Beryllium	3	µg/L	4	1	4.8	4.8	04M02
1057	LF04	Water	1992	Bromide	500	µg/L	1	–	–	–	
1058	LF04	Water	1992	Cadmium	10	µg/L	4	–	–	–	
1059	LF04	Water	1992	Calcium	N/A	µg/L	4	4	8.90E+04	2.40E+05	04M02
1060	LF04	Water	1992	Carbon tetrachloride	1	µg/L	2	–	–	–	
1061	LF04	Water	1992	Chloride	N/A	µg/L	1	1	1.60E+04	1.60E+04	04M02
1062	LF04	Water	1992	Chloroform	0.5	µg/L	2	–	–	–	
1063	LF04	Water	1992	Chromium	20	µg/L	4	3	30	200	04M02
1064	LF04	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	2	–	–	–	
1065	LF04	Water	1992	Cobalt	20	µg/L	4	2	78	120	04M02
1066	LF04	Water	1992	Copper	20	µg/L	4	3	40	260	04M02
1067	LF04	Water	1992	Ethylbenzene	2	µg/L	2	–	–	–	
1068	LF04	Water	1992	Fluoride	N/A	µg/L	1	1	1.70E+03	1.70E+03	04M02
1069	LF04	Water	1992	h-Chlorofluorobenzene	N/A	µg/L	1	1	9	9	04M02
1070	LF04	Water	1992	Iron	N/A	µg/L	4	4	8.50E+04	2.70E+05	04M02
1071	LF04	Water	1992	Lead	N/A	µg/L	1	1	25	25	04M02
1072	LF04	Water	1992	Magnesium	N/A	µg/L	4	4	4.00E+04	1.40E+05	04M02
1073	LF04	Water	1992	Manganese	N/A	µg/L	4	4	1.50E+03	5.50E+03	04M02
1074	LF04	Water	1992	Methylenechloride	5	µg/L	2	–	–	–	
1075	LF04	Water	1992	Nickel	N/A	µg/L	4	4	40	330	04M02
1076	LF04	Water	1992	Nitrate	200	µg/L	1	–	–	–	
1077	LF04	Water	1992	Nitrite	200	µg/L	1	–	–	–	
1078	LF04	Water	1992	p-Chlorofluorobenzene	N/A	µg/L	1	1	8.8	8.8	04M02
1079	LF04	Water	1992	Phosphate	400	µg/L	1	–	–	–	
1080	LF04	Water	1992	Potassium	N/A	µg/L	4	4	5.10E+03	1.60E+04	04M02
1081	LF04	Water	1992	Silver	20	µg/L	4	–	–	–	
1082	LF04	Water	1992	Sodium	N/A	µg/L	4	4	1.40E+04	6.70E+04	04M02
1083	LF04	Water	1992	Sulfate	N/A	µg/L	1	1	2.70E+03	2.70E+03	04M02
1084	LF04	Water	1992	Sulfides	1.00E+04	µg/L	2	–	–	–	
1085	LF04	Water	1992	Tetrachloroethene	0.5	µg/L	2	–	–	–	
1086	LF04	Water	1992	Tin	100	µg/L	4	–	–	–	
1087	LF04	Water	1992	Toluene	2	µg/L	2	–	–	–	
1088	LF04	Water	1992	Total dissolved solids	N/A	mG/L	2	2	640	1.00E+03	04M02
1089	LF04	Water	1992	Trans-DCE	1	µg/L	2	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1090	LF04	Water	1992	Trichloroethene	1	µg/L	2	–	–	–	
1091	LF04	Water	1992	Vanadium	30	µg/L	4	2	60	350	04M02
1092	LF04	Water	1992	Vinyl chloride	2	µg/L	2	–	–	–	
1093	LF04	Water	1992	Xylenes (total)	5	µg/L	2	–	–	–	
1094	LF04	Water	1992	Zinc	10	µg/L	4	3	80	510	04M02
1095	LF04	Surface Soil	1989	2,4-Dinitrotoluene	70	µg/kg	4	–	–	–	
1096	LF04	Surface Soil	1989	2-Methylnaphthalene	30	µg/kg	4	1	210	210	04SB03
1097	LF04	Surface Soil	1992	Antimony	2.00E+04	µg/kg	8	–	–	–	
1098	LF04	Surface Soil	1992	Barium	N/A	µg/kg	8	8	9.20E+04	1.60E+06	04SYS02
1099	LF04	Surface Soil	1992	Beryllium	300	µg/kg	8	1	1.40E+03	1.40E+03	04SYS08
1100	LF04	Surface Soil	1989	Bis(2-ethylhexyl)phthalate	50	µg/kg	4	1	70	70	04SB06
1101	LF04	Surface Soil	1992	Cadmium	1.00E+03	µg/kg	8	–	–	–	
1102	LF04	Surface Soil	1992	Calcium	N/A	µg/kg	8	8	4.60E+06	1.10E+07	04SYS08
1103	LF04	Surface Soil	1992	Chromium	N/A	µg/kg	8	8	1.40E+04	2.30E+04	04SYS06
1104	LF04	Surface Soil	1992	Cobalt	N/A	µg/kg	8	8	6.00E+03	9.00E+03	04SYS04
1105	LF04	Surface Soil	1992	Copper	N/A	µg/kg	8	8	2.10E+04	4.40E+04	04SYS04
1106	LF04	Surface Soil	1988	Di-n-butylphthalate	60	µg/kg	3	–	–	–	
1107	LF04	Surface Soil	1989	Di-n-butylphthalate	30	µg/kg	4	–	–	–	
1108	LF04	Surface Soil	1992	Iron	N/A	µg/kg	8	8	1.40E+07	1.80E+07	04SYS02
1109	LF04	Surface Soil	1992	Magnesium	N/A	µg/kg	8	8	3.30E+06	5.60E+06	04SYS08
1110	LF04	Surface Soil	1992	Manganese	N/A	µg/kg	8	8	2.50E+05	3.70E+05	04SYS02
1111	LF04	Surface Soil	1988	n-Nitrosodiphenylamine	20	µg/kg	3	–	–	–	
1112	LF04	Surface Soil	1992	Nickel	N/A	µg/kg	8	8	1.30E+04	2.60E+04	04SYS08
1113	LF04	Surface Soil	1992	Potassium	N/A	µg/kg	8	8	1.40E+06	2.10E+06	04SYS08
1114	LF04	Surface Soil	1992	Silver	2.00E+03	µg/kg	8	–	–	–	
1115	LF04	Surface Soil	1992	Sodium	N/A	µg/kg	8	8	3.50E+05	5.80E+05	04SYS08
1116	LF04	Surface Soil	1992	Tin	1.00E+04	µg/kg	8	–	–	–	
1117	LF04	Surface Soil	1988	TPH	N/A	µg/kg	3	3	3.06E+04	2.40E+05	04M03
1118	LF04	Surface Soil	1989	TPH	1.37E+04	µg/kg	22	17	1.10E+04	3.70E+05	04SB06
1119	LF04	Surface Soil	1992	Vanadium	N/A	µg/kg	8	8	2.70E+04	4.80E+04	04SYS08
1120	LF04	Surface Soil	1992	Zinc	N/A	µg/kg	8	8	4.40E+04	1.00E+05	04SYS04
1121	LF04	Soil	1989	2,4-Dinitrotoluene	70	µg/kg	2	1	120	120	04SB02
1122	LF04	Soil	1989	2-Methylnaphthalene	30	µg/kg	2	–	–	–	
1123	LF04	Soil	1989	Bis(2-ethylhexyl)phthalate	50	µg/kg	14	2	160	190	04S08
1124	LF04	Soil	1988	Di-n-butylphthalate	60	µg/kg	4	1	2.00E+03	2.00E+03	04M02
1125	LF04	Soil	1989	Di-n-butylphthalate	30	µg/kg	14	3	140	6.30E+03	04SS1
1126	LF04	Soil	1988	n-Nitrosodiphenylamine	20	µg/kg	4	1	530	530	04M02
1127	LF04	Soil	1988	TPH	N/A	µg/kg	4	4	4.98E+04	1.88E+05	04M03
1128	LF04	Soil	1989	TPH	1.37E+04	µg/kg	20	11	1.80E+04	5.14E+05	04S07
1129	LF06	Water	1994	(Technical) chlordane	1	µg/L	4	–	–	–	
1130	LF06	Water	1994	1,1,1-Trichloroethane	1	µg/L	4	–	–	–	
1131	LF06	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	4	–	–	–	
1132	LF06	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	4	–	–	–	
1133	LF06	Water	1994	1,1-Dichloroethane	1	µg/L	4	–	–	–	
1134	LF06	Water	1994	1,1-Dichloroethene	0.5	µg/L	4	–	–	–	
1135	LF06	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	4	–	–	–	
1136	LF06	Water	1994	1,2-Dichlorobenzene	10	µg/L	12	–	–	–	
1137	LF06	Water	1994	1,2-Dichloroethane	0.5	µg/L	4	–	–	–	
1138	LF06	Water	1994	1,2-Dichloropropane	0.5	µg/L	4	–	–	–	
1139	LF06	Water	1994	1,3-Dichlorobenzene	10	µg/L	12	–	–	–	
1140	LF06	Water	1994	1,4-Dichlorobenzene	10	µg/L	12	–	–	–	
1141	LF06	Water	1994	2,4,5-Trichlorophenol	10	µg/L	4	–	–	–	
1142	LF06	Water	1994	2,4,6-Trichlorophenol	10	µg/L	4	–	–	–	
1143	LF06	Water	1994	2,4-Dichlorophenol	10	µg/L	4	–	–	–	
1144	LF06	Water	1994	2,4-Dimethylphenol	10	µg/L	4	–	–	–	
1145	LF06	Water	1994	2,4-Dinitrophenol	50	µg/L	4	–	–	–	
1146	LF06	Water	1994	2,4-Dinitrotoluene	50	µg/L	8	–	–	–	
1147	LF06	Water	1994	2,6-Dinitrotoluene	10	µg/L	4	–	–	–	
1148	LF06	Water	1994	2-Chloroethylvinyl ether	2	µg/L	4	–	–	–	
1149	LF06	Water	1994	2-Chloronaphthalene	10	µg/L	4	–	–	–	
1150	LF06	Water	1994	2-Chlorophenol	10	µg/L	4	–	–	–	
1151	LF06	Water	1994	2-Methylnaphthalene	10	µg/L	4	–	–	–	
1152	LF06	Water	1994	2-Methylphenol	10	µg/L	4	–	–	–	
1153	LF06	Water	1994	2-Nitroaniline	50	µg/L	4	–	–	–	
1154	LF06	Water	1994	2-Nitrophenol	10	µg/L	4	–	–	–	
1155	LF06	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	4	–	–	–	
1156	LF06	Water	1994	3-Nitroaniline	50	µg/L	4	–	–	–	
1157	LF06	Water	1994	3/4-Methylphenol (total)	10	µg/L	4	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	QL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1158	LF06	Water	1994	4 4'-DDD	0.1	µg/L	4	–	–	–	
1159	LF06	Water	1994	4 4'-DDE	0.1	µg/L	4	–	–	–	
1160	LF06	Water	1994	4 4'-DDT	0.1	µg/L	4	–	–	–	
1161	LF06	Water	1994	4-Bromophenyl-phenylether	10	µg/L	4	–	–	–	
1162	LF05	Water	1994	4-Chloro-3-methylphenol	20	µg/L	4	–	–	–	
1163	LF06	Water	1991	4-Chloroaniline	20	µg/L	4	–	–	–	
1164	LF06	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	4	–	–	–	
1165	LF06	Water	1994	4-Nitroaniline	20	µg/L	4	–	–	–	
1166	LF06	Water	1994	4-Nitrophenol	50	µg/L	4	–	–	–	
1167	LF06	Water	1994	a-BHC	0.05	µg/L	4	–	–	–	
1168	LF06	Water	1994	a-Chlordane	0.05	µg/L	4	–	–	–	
1169	LF06	Water	1994	Acenaphthene	10	µg/L	4	–	–	–	
1170	LF06	Water	1994	Acenaphthylene	10	µg/L	4	–	–	–	
1171	LF06	Water	1994	Aldrin	0.05	µg/L	4	–	–	–	
1172	LF06	Water	1994	Aluminum	N/A	µg/L	4	4	2.05E+03	9.36E+03	06M06
1173	LF06	Water	1994	Anthracene	10	µg/L	4	–	–	–	
1174	LF06	Water	1994	Antimony	1	µg/L	8	–	–	–	
1175	LF06	Water	1994	Arsenic	3	µg/L	8	7	12.6	38.3	06M04
1176	LF06	Water	1994	b-BHC	0.05	µg/L	4	–	–	–	
1177	LF06	Water	1994	Barium	N/A	µg/L	8	8	112	384	06M04
1178	LF06	Water	1994	Benzene	1	µg/L	4	–	–	–	
1179	LF06	Water	1994	Benzo(a)anthracene	10	µg/L	4	–	–	–	
1180	LF06	Water	1994	Benzo(a)pyrene	10	µg/L	4	–	–	–	
1181	LF06	Water	1994	Benzo(b)fluoranthene	10	µg/L	4	–	–	–	
1182	LF06	Water	1994	Benzo(g,h,i)perylene	10	µg/L	4	–	–	–	
1183	LF06	Water	1994	Benzo(k)fluoranthene	10	µg/L	4	–	–	–	
1184	LF06	Water	1994	Benzoic acid	50	µg/L	4	–	–	–	
1185	LF06	Water	1994	Benzyl alcohol	20	µg/L	4	–	–	–	
1186	LF06	Water	1994	Beryllium	2	µg/L	8	–	–	–	
1187	LF06	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	4	–	–	–	
1188	LF06	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	4	–	–	–	
1189	LF06	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	4	–	–	–	
1190	LF06	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	4	1	1	1	06M05
1191	LF06	Water	1994	Bromide	100	µg/L	4	–	–	–	
1192	LF06	Water	1994	Bromodichloromethane	1	µg/L	4	–	–	–	
1193	LF06	Water	1994	Bromoform	1	µg/L	4	–	–	–	
1194	LF06	Water	1994	Bromomethane	2	µg/L	4	–	–	–	
1195	LF06	Water	1994	Butylbenzylphthalate	10	µg/L	4	–	–	–	
1196	LF06	Water	1994	Cadmium	1	µg/L	8	1	1	1	06M06
1197	LF06	Water	1994	Calcium	N/A	µg/L	8	8	4.58E+04	7.36E+04	06M06
1198	LF06	Water	1994	Carbazole	10	µg/L	4	–	–	–	
1199	LF06	Water	1994	Carbon tetrachloride	0.5	µg/L	4	–	–	–	
1200	LF06	Water	1994	Chloride	N/A	µg/L	4	4	1.50E+03	4.70E+03	06M02
1201	LF06	Water	1994	Chlorobenzene	1	µg/L	8	–	–	–	
1202	LF06	Water	1994	Chloroethane	1	µg/L	4	–	–	–	
1203	LF06	Water	1994	Chloroform	1	µg/L	4	–	–	–	
1204	LF06	Water	1994	Chloromethane	1	µg/L	4	–	–	–	
1205	LF06	Water	1994	Chromium	N/A	µg/L	3	3	14	20.2	06M04
1206	LF06	Water	1994	Chrysene	10	µg/L	4	–	–	–	
1207	LF06	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
1208	LF06	Water	1994	Cobalt	1	µg/L	3	–	–	–	
1209	LF06	Water	1994	Copper	1	µg/L	6	4	25.3	82.1	06M06
1210	LF06	Water	1994	d-BHC	0.05	µg/L	4	–	–	–	
1211	LF06	Water	1994	Di-n-butylphthalate	10	µg/L	4	3	1	2	06M02
1212	LF06	Water	1994	Di-n-octylphthalate	10	µg/L	4	–	–	–	
1213	LF06	Water	1994	Dibenz(a,h)anthracene	10	µg/L	4	–	–	–	
1214	LF06	Water	1994	Dibenzofuran	10	µg/L	4	–	–	–	
1215	LF06	Water	1994	Dibromochloromethane	1	µg/L	4	–	–	–	
1216	LF06	Water	1994	Dichlorodifluoromethane	1	µg/L	4	–	–	–	
1217	LF06	Water	1994	Dieldrin	0.1	µg/L	4	–	–	–	
1218	LF06	Water	1994	Diethylphthalate	10	µg/L	4	1	4	4	06M02
1219	LF06	Water	1994	Dimethylphthalate	10	µg/L	4	–	–	–	
1220	LF06	Water	1994	Endosulfan I	0.05	µg/L	4	–	–	–	
1221	LF06	Water	1994	Endosulfan II	0.1	µg/L	4	–	–	–	
1222	LF06	Water	1994	Endosulfan sulfate	0.1	µg/L	4	–	–	–	
1223	LF06	Water	1994	Endrin	0.1	µg/L	4	–	–	–	
1224	LF06	Water	1994	Endrin aldehyde	0.1	µg/L	4	–	–	–	
1225	LF06	Water	1994	Ethylbenzene	1	µg/L	4	1	2	2	06M06

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1226	LF06	Water	1994	Fluoranthene	10	µg/L	4	–	–	–	
1227	LF06	Water	1994	Fluorene	10	µg/L	4	–	–	–	
1228	LF06	Water	1994	g-BHC	0.05	µg/L	4	–	–	–	
1229	LF06	Water	1994	g-Chlordane	0.05	µg/L	4	–	–	–	
1230	LF06	Water	1994	Heptachlor	0.05	µg/L	4	–	–	–	
1231	LF06	Water	1994	Heptachlor epoxide	0.05	µg/L	4	–	–	–	
1232	LF06	Water	1994	Hexachlorobenzene	10	µg/L	4	–	–	–	
1233	LF06	Water	1994	Hexachlorobutadiene	10	µg/L	4	–	–	–	
1234	LF06	Water	1994	Hexachlorocyclopentadiene	10	µg/L	4	–	–	–	
1235	LF06	Water	1994	Hexachloroethane	10	µg/L	4	–	–	–	
1236	LF06	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	4	–	–	–	
1237	LF06	Water	1994	Iron	N/A	µg/L	7	7	1.30E+03	2.15E+04	06M04
1238	LF06	Water	1994	Isophorone	10	µg/L	4	–	–	–	
1239	LF06	Water	1994	Lead	1	µg/L	7	5	3.7	23.7	06M04
1240	LF06	Water	1994	M,p-xylene	1	µg/L	4	–	–	–	
1241	LF06	Water	1994	Magnesium	N/A	µg/L	8	8	8.04E+03	2.12E+04	06M04
1242	LF06	Water	1994	Manganese	N/A	µg/L	8	8	475	2.79E+03	06M06
1243	LF06	Water	1994	Methoxychlor	0.5	µg/L	4	–	–	–	
1244	LF06	Water	1994	Methylene chloride	1	µg/L	4	–	–	–	
1245	LF06	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	4	–	–	–	
1246	LF06	Water	1994	n-Nitrosodiphenylamine	10	µg/L	4	–	–	–	
1247	LF06	Water	1994	Naphthalene	10	µg/L	4	–	–	–	
1248	LF06	Water	1994	Nickel	N/A	µg/L	2	2	30	31.8	06M04
1249	LF06	Water	1994	Nitrobenzene	10	µg/L	4	–	–	–	
1250	LF06	Water	1994	o-Xylene	1	µg/L	4	–	–	–	
1251	LF06	Water	1994	PCB-1016	1	µg/L	4	–	–	–	
1252	LF06	Water	1994	PCB-1221	2	µg/L	4	–	–	–	
1253	LF06	Water	1994	PCB-1232	1	µg/L	4	–	–	–	
1254	LF06	Water	1994	PCB-1242	1	µg/L	4	–	–	–	
1255	LF06	Water	1994	PCB-1248	1	µg/L	4	–	–	–	
1256	LF06	Water	1994	PCB-1254	1	µg/L	4	–	–	–	
1257	LF06	Water	1994	PCB-1260	1	µg/L	4	–	–	–	
1258	LF06	Water	1994	Pentachlorophenol	50	µg/L	4	–	–	–	
1259	LF06	Water	1994	Phenanthrene	10	µg/L	4	–	–	–	
1260	LF06	Water	1994	Phenol	10	µg/L	4	–	–	–	
1261	LF06	Water	1994	Potassium	N/A	µg/L	1	1	5.44E+03	5.44E+03	06M04
1262	LF06	Water	1994	Pyrene	10	µg/L	4	–	–	–	
1263	LF06	Water	1994	Silver	1	µg/L	8	–	–	–	
1264	LF06	Water	1994	Sodium	N/A	µg/L	5	5	5.44E+03	9.52E+03	06M04
1265	LF06	Water	1994	Sulfate	N/A	µg/L	4	4	5.50E+03	1.80E+04	06M04
1266	LF06	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	4	–	–	–	
1267	LF06	Water	1994	Tin	1	µg/L	5	–	–	–	
1268	LF06	Water	1994	Toluene	1	µg/L	4	–	–	–	
1269	LF06	Water	1994	Total dissolved solids	N/A	µg/L	4	4	2.10E+05	2.70E+05	06M02
1270	LF06	Water	1994	Toxaphene	5	µg/L	4	–	–	–	
1271	LF06	Water	1994	Trans-1,2-dichloroethene	1	µg/L	4	–	–	–	
1272	LF06	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
1273	LF06	Water	1994	Trichloroethene (TCE)	0.5	µg/L	4	–	–	–	
1274	LF06	Water	1994	Trichlorofluoromethane	1	µg/L	4	–	–	–	
1275	LF06	Water	1994	Vanadium	N/A	µg/L	4	4	11.8	30.1	06M04
1276	LF06	Water	1994	Vinyl chloride	0.5	µg/L	4	–	–	–	
1277	LF06	Water	1994	Zinc	2	µg/L	5	4	43.1	84.6	06M06
1278	SS35	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	12	–	–	–	
1279	SS35	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	12	–	–	–	
1280	SS35	Water	1992	1,1-Dichloroethane	1	µg/L	12	–	–	–	
1281	SS35	Water	1992	1,2-Dichloroethane	0.5	µg/L	12	1	3.2	3.2	35GP03
1282	SS35	Water	1992	1,4-Dichlorobenzene	2	µg/L	12	–	–	–	
1283	SS35	Water	1992	4,4'-DDD	0.1	µg/L	13	–	–	–	
1284	SS35	Water	1992	4,4'-DDE	0.05	µg/L	13	1	0.12	0.12	35GP02
1285	SS35	Water	1992	4,4'-DDT	0.1	µg/L	13	2	0.14	0.16	35GP02
1286	SS35	Water	1992	Aldrin	0.05	µg/L	13	–	–	–	
1287	SS35	Water	1992	Alpha-BHC	0.05	µg/L	13	–	–	–	
1288	SS35	Water	1992	Aroclor-1016	1	µg/L	13	–	–	–	
1289	SS35	Water	1992	Aroclor-1221	1	µg/L	13	–	–	–	
1290	SS35	Water	1992	Aroclor-1232	1	µg/L	13	–	–	–	
1291	SS35	Water	1992	Aroclor-1242	1	µg/L	13	–	–	–	
1292	SS35	Water	1992	Aroclor-1248	1	µg/L	13	–	–	–	
1293	SS35	Water	1992	Aroclor-1254	1	µg/L	13	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1294	SS35	Water	1992	Aroclor-1260	1	µg/L	13	–	–	–	
1295	SS35	Water	1992	Benzene	2	µg/L	12	1	3.5	3.5	35GP03
1296	SS35	Water	1992	Beta-BHC	0.05	µg/L	13	1	0.05	0.05	35GP01
1297	SS35	Water	1992	Carbon tetrachloride	1	µg/L	12	–	–	–	
1298	SS35	Water	1992	Chlordane	0.1	µg/L	13	–	–	–	
1299	SS35	Water	1992	Chloroform	0.5	µg/L	12	–	–	–	
1300	SS35	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	12	1	1.1	1.1	35GP01
1301	SS35	Water	1992	Delta-BHC	0.1	µg/L	13	–	–	–	
1302	SS35	Water	1992	Dieldrin	0.05	µg/L	13	–	–	–	
1303	SS35	Water	1992	Endosulfan I	0.1	µg/L	13	–	–	–	
1304	SS35	Water	1992	Endosulfan II	0.5	µg/L	13	–	–	–	
1305	SS35	Water	1992	Endosulfan sulfate	0.5	µg/L	13	–	–	–	
1306	SS35	Water	1992	Endrin	0.1	µg/L	13	–	–	–	
1307	SS35	Water	1992	Endrin aldehyde	0.2	µg/L	13	–	–	–	
1308	SS35	Water	1992	Ethylbenzene	2	µg/L	12	–	–	–	
1309	SS35	Water	1992	Gamma-BHC (lindane)	0.05	µg/L	13	1	0.07	0.07	35GP04
1310	SS35	Water	1992	Heptachlor	0.05	µg/L	13	–	–	–	
1311	SS35	Water	1992	Heptachlor epoxide	1	µg/L	13	–	–	–	
1312	SS35	Water	1992	Lead	5	µg/L	12	7	5.7	68	35GP01
1313	SS35	Water	1992	Methoxychlor	2	µg/L	13	–	–	–	
1314	SS35	Water	1992	Methylenechloride	5	µg/L	12	–	–	–	
1315	SS35	Water	1992	Tetrachloroethene	0.5	µg/L	12	–	–	–	
1316	SS35	Water	1992	Toluene	2	µg/L	12	1	3.3	3.3	35GP01
1317	SS35	Water	1992	Toxaphene	2	µg/L	13	–	–	–	
1318	SS35	Water	1992	Trans-DCE	1	µg/L	12	–	–	–	
1319	SS35	Water	1992	Trichloroethene	1	µg/L	12	–	–	–	
1320	SS35	Water	1992	Vinyl chloride	2	µg/L	12	–	–	–	
1321	SS35	Water	1992	Xylenes (total)	5	µg/L	12	1	9.4	9.4	35GP02
1322	SS35	Surface Soil	1990	2-Methylnaphthalene	30	µg/kg	4	2	50	2.10E+04	35SB04
1323	SS35	Surface Soil	1992	4,4'-DDD	20	µg/kg	8	6	29	5.10E+03	35DIR05
1324	SS35	Surface Soil	1992	4,4'-DDE	10	µg/kg	8	7	11	1.90E+04	35DIR05
1325	SS35	Surface Soil	1992	4,4'-DDT	20	µg/kg	8	7	69	4.90E+04	35DIR05
1326	SS35	Surface Soil	1988	Aldrin	1	µg/kg	3	–	–	–	
1327	SS35	Surface Soil	1992	Aldrin	10	µg/kg	8	–	–	–	
1328	SS35	Surface Soil	1992	Alpha-BHC	10	µg/kg	8	1	17	17	35DIR05
1329	SS35	Surface Soil	1988	Aluminum (sed)	N/A	µg/kg	3	3	4.59E+06	9.25E+06	35M02
1330	SS35	Surface Soil	1992	Aroclor-1016	100	µg/kg	8	–	–	–	
1331	SS35	Surface Soil	1992	Aroclor-1221	200	µg/kg	8	–	–	–	
1332	SS35	Surface Soil	1992	Aroclor-1232	200	µg/kg	8	–	–	–	
1333	SS35	Surface Soil	1992	Aroclor-1242	100	µg/kg	8	–	–	–	
1334	SS35	Surface Soil	1992	Aroclor-1248	100	µg/kg	8	–	–	–	
1335	SS35	Surface Soil	1992	Aroclor-1254	100	µg/kg	8	–	–	–	
1336	SS35	Surface Soil	1992	Aroclor-1260	100	µg/kg	8	–	–	–	
1337	SS35	Surface Soil	1988	Barium (sed)	N/A	µg/kg	3	3	5.17E+04	1.10E+05	35M02
1338	SS35	Surface Soil	1988	Beryllium (sed)	320	µg/kg	3	2	651	1.01E+03	35M02
1339	SS35	Surface Soil	1992	Beta-BHC	10	µg/kg	8	1	10	10	35DIR05
1340	SS35	Surface Soil	1988	BHC, beta	1	µg/kg	3	–	–	–	
1341	SS35	Surface Soil	1988	Cadmium (sed)	455	µg/kg	3	2	642	2.04E+03	35M02
1342	SS35	Surface Soil	1988	Calcium (sed)	N/A	µg/kg	3	3	2.41E+06	5.66E+06	35M02
1343	SS35	Surface Soil	1988	Chlordane	1	µg/kg	3	–	–	–	
1344	SS35	Surface Soil	1990	Chlordane	2	µg/kg	3	1	3	3	35SB04
1345	SS35	Surface Soil	1992	Chlordane	50	µg/kg	8	2	280	410	35DIR06
1346	SS35	Surface Soil	1988	Chromium (sed)	N/A	µg/kg	3	3	8.35E+03	1.64E+04	35M02
1347	SS35	Surface Soil	1988	Cobalt (sed)	N/A	µg/kg	3	3	5.28E+03	6.17E+03	35M02
1348	SS35	Surface Soil	1988	Copper (sed)	N/A	µg/kg	3	3	1.13E+04	2.56E+04	35M02
1349	SS35	Surface Soil	1988	DDD, pp'	1	µg/kg	3	2	4	16	35M01
1350	SS35	Surface Soil	1990	DDD, pp'	0.4	µg/kg	3	2	0.4	390	35SB04
1351	SS35	Surface Soil	1988	DDE, pp'	N/A	µg/kg	3	3	5	39	35M01
1352	SS35	Surface Soil	1990	DDE, pp'	N/A	µg/kg	3	3	0.09	306	35SB04
1353	SS35	Surface Soil	1988	DDT, pp'	N/A	µg/kg	3	3	16	573	35M01
1354	SS35	Surface Soil	1990	DDT, pp'	N/A	µg/kg	3	3	4	356	35SB04
1355	SS35	Surface Soil	1992	Delta-BHC	20	µg/kg	8	–	–	–	
1356	SS35	Surface Soil	1988	Dieldrin	1	µg/kg	3	–	–	–	
1357	SS35	Surface Soil	1992	Dieldrin	10	µg/kg	8	–	–	–	
1358	SS35	Surface Soil	1992	Endosulfan I	10	µg/kg	8	1	31	31	35DIR05
1359	SS35	Surface Soil	1992	Endosulfan II	10	µg/kg	8	–	–	–	
1360	SS35	Surface Soil	1988	Endosulfan sulfate	1	µg/kg	3	–	–	–	
1361	SS35	Surface Soil	1992	Endosulfan sulfate	20	µg/kg	8	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	CL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1362	SS35	Surface Soil	1992	Endrin	10	µg/kg	8	1	20	20	35DIR05
1363	SS35	Surface Soil	1988	Endrin aldehyde	1	µg/kg	3	—	—	—	
1364	SS35	Surface Soil	1992	Endrin aldehyde	0.2	µg/kg	8	—	—	—	
1365	SS35	Surface Soil	1990	Fluoranthene	30	µg/kg	4	—	—	—	
1366	SS35	Surface Soil	1992	Gamma-BHC (lindane)	10	µg/kg	8	1	1.10E+03	1.10E+03	35DIR05
1367	SS35	Surface Soil	1990	Heptachlor	N/A	µg/kg	3	3	0.5	0.6	35SB04
1368	SS35	Surface Soil	1992	Heptachlor	10	µg/kg	8	—	—	—	
1369	SS35	Surface Soil	1992	Heptachlor epoxide	60	µg/kg	8	1	13	13	35DIR05
1370	SS35	Surface Soil	1988	Iron (sed)	N/A	µg/kg	3	3	9.00E+06	1.82E+07	35M02
1371	SS35	Surface Soil	1992	Lead	N/A	µg/kg	8	8	6.00E+03	1.20E+05	35DIR07
1372	SS35	Surface Soil	1988	Lead (sed)	4.56E+03	µg/kg	3	—	—	—	
1373	SS35	Surface Soil	1990	Lead (sediment)	N/A	µg/kg	4	4	2.64E+03	6.16E+03	35SB07
1374	SS35	Surface Soil	1988	Magnesium (sed)	N/A	µg/kg	3	3	2.84E+06	5.38E+06	35M02
1375	SS35	Surface Soil	1988	Manganese (sed)	N/A	µg/kg	3	3	1.90E+05	3.38E+05	35M02
1376	SS35	Surface Soil	1992	Methoxychlor	100	µg/kg	8	—	—	—	
1377	SS35	Surface Soil	1990	Naphthalene	30	µg/kg	4	1	3.60E+03	3.60E+03	35SB04
1378	SS35	Surface Soil	1988	Nickel (sed)	N/A	µg/kg	3	3	1.04E+04	1.99E+04	35M02
1379	SS35	Surface Soil	1990	Phenanthrene	30	µg/kg	4	—	—	—	
1380	SS35	Surface Soil	1988	Potassium (sed)	N/A	µg/kg	3	3	4.72E+05	7.68E+05	35M02
1381	SS35	Surface Soil	1990	Pyrene	30	µg/kg	4	—	—	—	
1382	SS35	Surface Soil	1988	Sodium (sed)	N/A	µg/kg	3	3	1.96E+05	3.68E+05	35M02
1383	SS35	Surface Soil	1992	Toxaphene	400	µg/kg	8	—	—	—	
1384	SS35	Surface Soil	1988	TPH	1.02E+04	µg/kg	3	1	2.75E+04	2.75E+04	35M02
1385	SS35	Surface Soil	1990	TPH	20	µg/kg	24	23	19	3.80E+05	35SB04
1386	SS35	Surface Soil	1988	Vanadium (sed)	N/A	µg/kg	3	3	1.52E+04	3.55E+04	35M02
1387	SS35	Surface Soil	1988	Zinc (sed)	N/A	µg/kg	3	3	2.77E+04	5.41E+04	35M02
1388	SS35	Soil	1990	2-Methylnaphthalene	30	µg/kg	5	2	40	70	35SS03
1389	SS35	Soil	1988	Aldrin	1	µg/kg	4	1	6.2	6.2	35M01
1390	SS35	Soil	1988	Aluminum (sed)	N/A	µg/kg	4	4	6.43E+06	1.19E+07	35M02
1391	SS35	Soil	1988	Barium (sed)	N/A	µg/kg	4	4	7.47E+04	3.88E+05	35M02
1392	SS35	Soil	1988	Beryllium (sed)	320	µg/kg	4	3	792	1.03E+03	35S01
1393	SS35	Soil	1988	BHC, beta	1	µg/kg	4	1	1.8	1.8	35M01
1394	SS35	Soil	1988	Cadmium (sed)	455	µg/kg	4	—	—	—	
1395	SS35	Soil	1988	Calcium (sed)	N/A	µg/kg	4	4	3.23E+06	1.14E+07	35M02
1396	SS35	Soil	1988	Chlordane	1	µg/kg	4	1	12	12	35S01
1397	SS35	Soil	1990	Chlordane	2	µg/kg	5	4	17	269	35SS03
1398	SS35	Soil	1988	Chromium (sed)	N/A	µg/kg	4	4	1.19E+04	2.13E+04	35S01
1399	SS35	Soil	1988	Cobalt (sed)	N/A	µg/kg	4	4	6.97E+03	1.12E+04	35S01
1400	SS35	Soil	1988	Copper (sed)	N/A	µg/kg	4	4	1.57E+04	3.30E+04	35S01
1401	SS35	Soil	1988	DDD, pp'	1	µg/kg	4	3	43	1.12E+03	35M01
1402	SS35	Soil	1990	DDD, pp'	N/A	µg/kg	5	5	39	5.85E+04	35SS03
1403	SS35	Soil	1988	DDE, pp'	1	µg/kg	4	3	107	1.35E+03	35M01
1404	SS35	Soil	1990	DDE, pp'	N/A	µg/kg	5	5	25	9.71E+03	35SS03
1405	SS35	Soil	1988	DDT, pp'	N/A	µg/kg	4	4	5.6	3.21E+04	35M01
1406	SS35	Soil	1990	DDT, pp'	N/A	µg/kg	5	5	111	3.96E+05	35SS03
1407	SS35	Soil	1988	Dieldrin	1	µg/kg	4	—	—	—	
1408	SS35	Soil	1988	Endosulfan sulfate	1	µg/kg	4	—	—	—	
1409	SS35	Soil	1988	Endrin aldehyde	1	µg/kg	4	—	—	—	
1410	SS35	Soil	1990	Fluoranthene	30	µg/kg	5	2	50	70	35SS03
1411	SS35	Soil	1990	Heptachlor	N/A	µg/kg	5	5	0.5	0.6	35SB06
1412	SS35	Soil	1988	Iron (sed)	N/A	µg/kg	4	4	1.20E+07	2.40E+07	35S01
1413	SS35	Soil	1988	Lead (sed)	4.56E+03	µg/kg	4	1	4.51E+04	4.51E+04	35M02
1414	SS35	Soil	1990	Lead (sediment)	N/A	µg/kg	5	5	6.34E+03	1.61E+04	35SS03
1415	SS35	Soil	1988	Magnesium (sed)	N/A	µg/kg	4	4	3.73E+06	6.42E+06	35S01
1416	SS35	Soil	1988	Manganese (sed)	N/A	µg/kg	4	4	2.00E+05	9.00E+05	35S01
1417	SS35	Soil	1990	Naphthalene	30	µg/kg	5	—	—	—	
1418	SS35	Soil	1988	Nickel (sed)	N/A	µg/kg	4	4	1.40E+04	2.49E+04	35S01
1419	SS35	Soil	1990	Phenanthrene	30	µg/kg	5	1	30	30	35SS03
1420	SS35	Soil	1988	Potassium (sed)	N/A	µg/kg	4	4	6.21E+05	9.34E+05	35S01
1421	SS35	Soil	1990	Pyrene	30	µg/kg	5	1	70	70	35SS03
1422	SS35	Soil	1988	Sodium (sed)	N/A	µg/kg	4	4	2.62E+05	4.65E+05	35S01
1423	SS35	Soil	1988	TPH	1.02E+04	µg/kg	4	3	1.39E+04	7.93E+05	35S01
1424	SS35	Soil	1990	TPH	10	µg/kg	15	14	30	2.68E+05	35SB06
1425	SS35	Soil	1988	Vanadium (sed)	N/A	µg/kg	4	4	2.42E+04	3.85E+04	35M02
1426	SS35	Soil	1988	Zinc (sed)	N/A	µg/kg	4	4	3.55E+04	7.34E+04	35S01
1427	SS36	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	2	—	—	—	
1428	SS36	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	2	—	—	—	
1429	SS36	Water	1992	1,1-Dichloroethane	1	µg/L	2	—	—	—	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1430	SS36	Water	1992	1 2-Dichloroethane	0.5	µg/L	2	–	–	–	
1431	SS36	Water	1992	1 4-Dichlorobenzene	2	µg/L	2	–	–	–	
1432	SS36	Water	1992	Antimony	200	µg/L	3	–	–	–	
1433	SS36	Water	1992	Barium	N/A	µg/L	3	3	140	330	36-2
1434	SS36	Water	1992	Benzene	2	µg/L	2	–	–	–	
1435	SS36	Water	1992	Beryllium	3	µg/L	3	–	–	–	
1436	SS36	Water	1992	Cadmium	10	µg/L	3	–	–	–	
1437	SS36	Water	1992	Calcium	N/A	µg/L	3	3	6.50E+04	1.60E+05	36-2
1438	SS36	Water	1992	Carbon tetrachloride	1	µg/L	2	–	–	–	
1439	SS36	Water	1992	Chloroform	0.5	µg/L	2	–	–	–	
1440	SS36	Water	1992	Chromium	20	µg/L	3	–	–	–	
1441	SS36	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	2	–	–	–	
1442	SS36	Water	1992	Cobalt	20	µg/L	3	–	–	–	
1443	SS36	Water	1992	Copper	20	µg/L	3	–	–	–	
1444	SS36	Water	1992	Ethylbenzene	2	µg/L	2	–	–	–	
1445	SS36	Water	1992	Iron	N/A	µg/L	3	3	2.90E+03	1.90E+04	36-2
1446	SS36	Water	1992	Magnesium	N/A	µg/L	3	3	1.50E+04	2.80E+04	36-2
1447	SS36	Water	1992	Manganese	N/A	µg/L	3	3	1.70E+03	4.40E+03	36-2
1448	SS36	Water	1992	Methylenechloride	5	µg/L	2	–	–	–	
1449	SS36	Water	1992	Nickel	30	µg/L	3	–	–	–	
1450	SS36	Water	1992	Potassium	N/A	µg/L	3	3	3.70E+03	4.90E+03	36-2
1451	SS36	Water	1992	Silver	20	µg/L	3	–	–	–	
1452	SS36	Water	1992	Sodium	N/A	µg/L	3	3	5.90E+03	8.30E+03	36-2
1453	SS36	Water	1992	Tetrachloroethene	0.5	µg/L	2	–	–	–	
1454	SS36	Water	1992	Tin	100	µg/L	3	–	–	–	
1455	SS36	Water	1992	Toluene	2	µg/L	2	–	–	–	
1456	SS36	Water	1992	Trans-DCE	1	µg/L	2	–	–	–	
1457	SS36	Water	1992	Trichloroethene	1	µg/L	2	–	–	–	
1458	SS36	Water	1992	Vanadium	30	µg/L	3	–	–	–	
1459	SS36	Water	1992	Vinyl chloride	2	µg/L	2	–	–	–	
1460	SS36	Water	1992	Xylenes (total)	5	µg/L	2	–	–	–	
1461	SS36	Water	1992	Zinc	10	µg/L	3	1	12	12	36-2
1462	SS36	Surface Soil	1986	Lead	N/A	µg/kg	11	11	4.00E+03	7.00E+03	36-1
1463	SS36	Soil	1986	Antimony	5.00E+03	µg/kg	1	–	–	–	
1464	SS36	Soil	1992	Antimony	2.00E+04	µg/kg	2	–	–	–	
1465	SS36	Soil	1986	Arsenic	N/A	µg/kg	1	1	2.40E+04	2.40E+04	36SD-2
1466	SS36	Soil	1992	Barium	N/A	µg/kg	2	2	3.40E+04	6.20E+04	36MW03-2
1467	SS36	Soil	1986	Beryllium	N/A	µg/kg	1	1	1.40E+03	1.40E+03	36SD-2
1468	SS36	Soil	1992	Beryllium	300	µg/kg	2	–	–	–	
1469	SS36	Soil	1986	Cadmium	500	µg/kg	1	–	–	–	
1470	SS36	Soil	1992	Cadmium	1.00E+03	µg/kg	2	–	–	–	
1471	SS36	Soil	1992	Calcium	N/A	µg/kg	2	2	2.30E+06	2.40E+06	36MW03-2
1472	SS36	Soil	1986	Chromium	N/A	µg/kg	1	1	1.70E+06	1.70E+06	36SD-2
1473	SS36	Soil	1992	Chromium	N/A	µg/kg	2	2	5.00E+03	7.00E+03	36MW03-2
1474	SS36	Soil	1992	Cobalt	N/A	µg/kg	2	2	4.00E+03	4.00E+03	36MW03-1
1475	SS36	Soil	1986	Copper	N/A	µg/kg	1	1	8.30E+04	8.30E+04	36SD-2
1476	SS36	Soil	1992	Copper	N/A	µg/kg	2	2	4.00E+03	1.40E+04	36MW03-2
1477	SS36	Soil	1986	DDD, pp'	N/A	µg/kg	1	1	15	15	36SD-1
1478	SS36	Soil	1986	DDE, pp'	N/A	µg/kg	1	1	80	80	36SD-1
1479	SS36	Soil	1986	DDT, pp'	N/A	µg/kg	1	1	240	240	36SD-1
1480	SS36	Soil	1992	Iron	N/A	µg/kg	2	2	5.10E+06	7.60E+06	36MW03-2
1481	SS36	Soil	1986	Lead	N/A	µg/kg	3	3	1.00E+04	7.80E+06	36SD-2
1482	SS36	Soil	1992	Magnesium	N/A	µg/kg	2	2	1.80E+06	2.30E+06	36MW03-2
1483	SS36	Soil	1992	Manganese	N/A	µg/kg	2	2	7.80E+04	1.20E+05	36MW03-2
1484	SS36	Soil	1986	Mercury	100	µg/kg	1	–	–	–	
1485	SS36	Soil	1986	Nickel	N/A	µg/kg	1	1	4.50E+04	4.50E+04	36SD-2
1486	SS36	Soil	1992	Nickel	N/A	µg/kg	2	2	8.00E+03	9.00E+03	36MW03-1
1487	SS36	Soil	1992	Potassium	N/A	µg/kg	2	2	3.20E+05	4.40E+05	36MW03-2
1488	SS36	Soil	1986	Selenium	N/A	µg/kg	1	1	600	600	36SD-2
1489	SS36	Soil	1986	Silver	500	µg/kg	1	–	–	–	
1490	SS36	Soil	1992	Silver	2.00E+03	µg/kg	2	–	–	–	
1491	SS36	Soil	1992	Sodium	N/A	µg/kg	2	2	2.50E+05	2.90E+05	36MW03-1
1492	SS36	Soil	1986	Thallium	5.00E+03	µg/kg	1	–	–	–	
1493	SS36	Soil	1992	Tin	1.00E+04	µg/kg	2	–	–	–	
1494	SS36	Soil	1992	Vanadium	N/A	µg/kg	2	2	9.00E+03	1.30E+04	36MW03-2
1495	SS36	Soil	1986	Zinc	N/A	µg/kg	1	1	9.60E+04	9.60E+04	36SD-2
1496	SS36	Soil	1992	Zinc	N/A	µg/kg	2	2	1.00E+04	1.60E+04	36MW03-2
1497	SS37	Water	1994	(Technical) chlordane	1	µg/L	5	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1498	SS37	Water	1994	1,1,1-Trichloroethane	1	µg/L	5	—	—	—	
1499	SS37	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	5	—	—	—	
1500	SS37	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	5	—	—	—	
1501	SS37	Water	1994	1,1-Dichloroethane	1	µg/L	5	—	—	—	
1502	SS37	Water	1994	1,1-Dichloroethene	0.5	µg/L	5	—	—	—	
1503	SS37	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	6	—	—	—	
1504	SS37	Water	1994	1,2-Dichlorobenzene	10	µg/L	16	—	—	—	
1505	SS37	Water	1994	1,2-Dichloroethane	0.5	µg/L	5	—	—	—	
1506	SS37	Water	1994	1,2-Dichloropropane	0.5	µg/L	5	—	—	—	
1507	SS37	Water	1994	1,3-Dichlorobenzene	10	µg/L	16	—	—	—	
1508	SS37	Water	1994	1,4-Dichlorobenzene	10	µg/L	16	—	—	—	
1509	SS37	Water	1994	2,4,5-Trichlorophenol	10	µg/L	6	—	—	—	
1510	SS37	Water	1994	2,4,6-Trichlorophenol	10	µg/L	6	—	—	—	
1511	SS37	Water	1994	2,4-Dichlorophenol	10	µg/L	6	—	—	—	
1512	SS37	Water	1994	2,4-Dimethylphenol	10	µg/L	6	—	—	—	
1513	SS37	Water	1994	2,4-Dinitrophenol	50	µg/L	6	—	—	—	
1514	SS37	Water	1994	2,4-Dinitrotoluene	50	µg/L	12	—	—	—	
1515	SS37	Water	1994	2,6-Dinitrotoluene	10	µg/L	6	—	—	—	
1516	SS37	Water	1994	2-Chloroethylvinyl ether	2	µg/L	5	—	—	—	
1517	SS37	Water	1994	2-Chloronaphthalene	10	µg/L	6	—	—	—	
1518	SS37	Water	1994	2-Chlorophenol	10	µg/L	6	—	—	—	
1519	SS37	Water	1994	2-Methylnaphthalene	10	µg/L	6	—	—	—	
1520	SS37	Water	1994	2-Methylphenol	10	µg/L	6	—	—	—	
1521	SS37	Water	1994	2-Nitroaniline	50	µg/L	6	—	—	—	
1522	SS37	Water	1994	2-Nitrophenol	10	µg/L	6	—	—	—	
1523	SS37	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	6	—	—	—	
1524	SS37	Water	1994	3-Nitroaniline	50	µg/L	6	—	—	—	
1525	SS37	Water	1994	4,4'-DDD	0.1	µg/L	5	—	—	—	
1526	SS37	Water	1994	4,4'-DDE	0.1	µg/L	5	—	—	—	
1527	SS37	Water	1994	4,4'-DDT	0.1	µg/L	5	—	—	—	
1528	SS37	Water	1994	4-Bromophenyl-phenylether	10	µg/L	6	—	—	—	
1529	SS37	Water	1994	4-Chloro-3-methylphenol	20	µg/L	6	—	—	—	
1530	SS37	Water	1994	4-Chloroaniline	20	µg/L	6	—	—	—	
1531	SS37	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	6	—	—	—	
1532	SS37	Water	1994	4-Methylphenol	10	µg/L	6	—	—	—	
1533	SS37	Water	1994	4-Nitroaniline	20	µg/L	6	—	—	—	
1534	SS37	Water	1994	4-Nitrophenol	50	µg/L	6	—	—	—	
1535	SS37	Water	1994	a-BHC	0.05	µg/L	5	—	—	—	
1536	SS37	Water	1994	a-Chlordane	0.05	µg/L	5	—	—	—	
1537	SS37	Water	1994	Acenaphthene	10	µg/L	6	—	—	—	
1538	SS37	Water	1994	Acenaphthylene	10	µg/L	6	—	—	—	
1539	SS37	Water	1994	Aldrin	0.05	µg/L	5	—	—	—	
1540	SS37	Water	1994	Aluminum	N/A	µg/L	10	10	46.8	387	37-1
1541	SS37	Water	1994	Anthracene	10	µg/L	6	—	—	—	
1542	SS37	Water	1994	Antimony	1	µg/L	10	—	—	—	
1543	SS37	Water	1994	Arsenic	N/A	µg/L	10	10	6.7	56.7	37-1
1544	SS37	Water	1994	b-BHC	0.05	µg/L	5	—	—	—	
1545	SS37	Water	1994	Barium	N/A	µg/L	10	10	97.7	207	37-1
1546	SS37	Water	1994	Benzene	1	µg/L	5	—	—	—	
1547	SS37	Water	1994	Benzo(a)anthracene	10	µg/L	6	—	—	—	
1548	SS37	Water	1994	Benzo(a)pyrene	10	µg/L	6	—	—	—	
1549	SS37	Water	1994	Benzo(b)fluoranthene	10	µg/L	6	—	—	—	
1550	SS37	Water	1994	Benzo(g,h,i)perylene	10	µg/L	6	—	—	—	
1551	SS37	Water	1994	Benzo(k)fluoranthene	10	µg/L	6	—	—	—	
1552	SS37	Water	1994	Benzoic acid	50	µg/L	6	—	—	—	
1553	SS37	Water	1994	Benzyl alcohol	20	µg/L	6	—	—	—	
1554	SS37	Water	1994	Beryllium	1	µg/L	10	—	—	—	
1555	SS37	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	6	—	—	—	
1556	SS37	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	6	—	—	—	
1557	SS37	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	6	—	—	—	
1558	SS37	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	6	2	2	2.3	37-1
1559	SS37	Water	1994	Bromodichloromethane	1	µg/L	5	—	—	—	
1560	SS37	Water	1994	Bromoform	1	µg/L	5	—	—	—	
1561	SS37	Water	1994	Bromomethane	2	µg/L	5	—	—	—	
1562	SS37	Water	1994	Butylbenzylphthalate	10	µg/L	6	—	—	—	
1563	SS37	Water	1994	Cadmium	1	µg/L	10	—	—	—	
1564	SS37	Water	1994	Calcium	N/A	µg/L	10	10	4.53E+04	5.15E+04	37-2F
1565	SS37	Water	1994	Carbazole	10	µg/L	6	—	—	—	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1566	SS37	Water	1994	Carbon tetrachloride	0.5	µg/L	5	–	–	–	
1567	SS37	Water	1994	Chlorobenzene	1	µg/L	10	–	–	–	
1568	SS37	Water	1994	Chloroethane	1	µg/L	5	–	–	–	
1569	SS37	Water	1994	Chloroform	1	µg/L	5	–	–	–	
1570	SS37	Water	1994	Chloromethane	1	µg/L	5	–	–	–	
1571	SS37	Water	1994	Chromium	1	µg/L	10	5	1.7	4.2	37-4D
1572	SS37	Water	1994	Chrysene	10	µg/L	6	–	–	–	
1573	SS37	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	5	–	–	–	
1574	SS37	Water	1994	Cobalt	1	µg/L	10	2	1.1	1.1	37-1
1575	SS37	Water	1994	Copper	1	µg/L	10	5	1.1	9	37-1
1576	SS37	Water	1994	d-BHC	0.05	µg/L	5	–	–	–	
1577	SS37	Water	1994	Di-n-butylphthalate	10	µg/L	6	–	–	–	
1578	SS37	Water	1994	Di-n-octylphthalate	10	µg/L	6	–	–	–	
1579	SS37	Water	1994	Dibenz(a,h)anthracene	10	µg/L	6	–	–	–	
1580	SS37	Water	1994	Dibenzofuran	10	µg/L	6	–	–	–	
1581	SS37	Water	1994	Dibromochloromethane	1	µg/L	5	–	–	–	
1582	SS37	Water	1994	Dichlorodifluoromethane	1	µg/L	5	–	–	–	
1583	SS37	Water	1994	Dieldrin	0.1	µg/L	5	–	–	–	
1584	SS37	Water	1994	Diethylphthalate	10	µg/L	6	–	–	–	
1585	SS37	Water	1994	Dimethylphthalate	10	µg/L	6	–	–	–	
1586	SS37	Water	1994	Endosulfan I	0.05	µg/L	5	–	–	–	
1587	SS37	Water	1994	Endosulfan II	0.1	µg/L	5	–	–	–	
1588	SS37	Water	1994	Endosulfan sulfate	0.1	µg/L	5	–	–	–	
1589	SS37	Water	1994	Endrin	0.1	µg/L	5	–	–	–	
1590	SS37	Water	1994	Endrin aldehyde	0.1	µg/L	5	–	–	–	
1591	SS37	Water	1994	Ethylbenzene	1	µg/L	5	–	–	–	
1592	SS37	Water	1994	Fluoranthene	10	µg/L	6	–	–	–	
1593	SS37	Water	1994	Fluorene	10	µg/L	6	–	–	–	
1594	SS37	Water	1994	g-BHC	0.05	µg/L	5	–	–	–	
1595	SS37	Water	1994	g-Chlordane	0.05	µg/L	5	–	–	–	
1596	SS37	Water	1994	Heptachlor	0.05	µg/L	5	–	–	–	
1597	SS37	Water	1994	Heptachlor epoxide	0.05	µg/L	5	–	–	–	
1598	SS37	Water	1994	Hexachlorobenzene	10	µg/L	6	–	–	–	
1599	SS37	Water	1994	Hexachlorobutadiene	10	µg/L	6	–	–	–	
1600	SS37	Water	1994	Hexachlorocyclopentadiene	10	µg/L	6	–	–	–	
1601	SS37	Water	1994	Hexachloroethane	10	µg/L	6	–	–	–	
1602	SS37	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	6	–	–	–	
1603	SS37	Water	1994	Iron	N/A	µg/L	10	10	1.04E+03	1.70E+04	37-1
1604	SS37	Water	1994	Isophorone	10	µg/L	6	–	–	–	
1605	SS37	Water	1994	Lead	1	µg/L	10	1	3.4	3.4	37-1
1606	SS37	Water	1994	M,p-xylene	1	µg/L	5	–	–	–	
1607	SS37	Water	1994	Magnesium	N/A	µg/L	10	10	1.04E+04	1.16E+04	37-2F
1608	SS37	Water	1994	Manganese	N/A	µg/L	10	10	886	2.59E+03	37-2
1609	SS37	Water	1994	Methoxychlor	0.5	µg/L	5	–	–	–	
1610	SS37	Water	1994	Methylene chloride	1	µg/L	5	–	–	–	
1611	SS37	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	6	–	–	–	
1612	SS37	Water	1994	n-Nitrosodiphenylamine	10	µg/L	6	–	–	–	
1613	SS37	Water	1994	Naphthalene	10	µg/L	6	–	–	–	
1614	SS37	Water	1994	Nickel	1	µg/L	10	5	1.3	3.3	37-1
1615	SS37	Water	1994	Nitrobenzene	10	µg/L	6	–	–	–	
1616	SS37	Water	1994	o-Xylene	1	µg/L	5	–	–	–	
1617	SS37	Water	1994	PCB-1016	1	µg/L	5	–	–	–	
1618	SS37	Water	1994	PCB-1221	2	µg/L	5	–	–	–	
1619	SS37	Water	1994	PCB-1232	1	µg/L	5	–	–	–	
1620	SS37	Water	1994	PCB-1242	1	µg/L	5	–	–	–	
1621	SS37	Water	1994	PCB-1248	1	µg/L	5	–	–	–	
1622	SS37	Water	1994	PCB-1254	1	µg/L	5	–	–	–	
1623	SS37	Water	1994	PCB-1260	1	µg/L	5	–	–	–	
1624	SS37	Water	1994	Pentachlorophenol	50	µg/L	6	–	–	–	
1625	SS37	Water	1994	Phenanthrene	10	µg/L	6	–	–	–	
1626	SS37	Water	1994	Phenol	10	µg/L	6	–	–	–	
1627	SS37	Water	1994	Potassium	N/A	µg/L	10	10	3.30E+03	3.82E+03	37-2
1628	SS37	Water	1994	Pyrene	10	µg/L	6	–	–	–	
1629	SS37	Water	1994	Silver	1	µg/L	10	–	–	–	
1630	SS37	Water	1994	Sodium	N/A	µg/L	10	10	4.71E+03	8.64E+03	37-1F
1631	SS37	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	5	–	–	–	
1632	SS37	Water	1994	Tin	1	µg/L	10	5	1.4	2.2	37-4
1633	SS37	Water	1994	Toluene	1	µg/L	5	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1634	SS37	Water	1994	Total dissolved solids	100	µg/L	20	15	2.10E+03	2.40E+05	37-3
1635	SS37	Water	1994	Toxaphene	5	µg/L	5	–	–	–	
1636	SS37	Water	1994	Trans-1,2-dichloroethene	1	µg/L	5	–	–	–	
1637	SS37	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	5	–	–	–	
1638	SS37	Water	1994	Trichloroethene (TCE)	0.5	µg/L	5	–	–	–	
1639	SS37	Water	1994	Trichlorofluoromethane	1	µg/L	5	–	–	–	
1640	SS37	Water	1994	Vanadium	1	µg/L	10	2	1.1	4.6	37-1
1641	SS37	Water	1994	Vinyl chloride	0.5	µg/L	5	–	–	–	
1642	SS37	Water	1994	Zinc	2	µg/L	10	7	2.3	15.3	37-1
1643	SS37	Surface Soil	1986	2-Butanone	N/A	µg/kg	1	1	75	75	37-2
1644	SS37	Surface Soil	1988	2-Butanone (mek)	N/A	µg/kg	6	6	19	1.30E+03	37AB-6
1645	SS37	Surface Soil	1986	2-Methylnaphthalene	N/A	µg/kg	1	1	1.20E+03	1.20E+03	37-1
1646	SS37	Surface Soil	1987	2-Methylnaphthalene	N/A	µg/kg	2	2	26	1.10E+04	37AB-1
1647	SS37	Surface Soil	1988	2-Methylnaphthalene	N/A	µg/kg	10	10	46	3.00E+04	37AB-9
1648	SS37	Surface Soil	1988	Anthracene	N/A	µg/kg	1	1	240	240	37AB-11
1649	SS37	Surface Soil	1987	Benzoic acid	N/A	µg/kg	1	1	66	66	37AB-4
1650	SS37	Surface Soil	1988	Chrysene	N/A	µg/kg	1	1	430	430	37AB-11
1651	SS37	Surface Soil	1987	Dibenzofuran	N/A	µg/kg	2	2	140	390	37AB-1
1652	SS37	Surface Soil	1988	Dibenzofuran	N/A	µg/kg	1	1	440	440	37AB-9
1653	SS37	Surface Soil	1986	Ethylbenzene	N/A	µg/kg	1	1	110	110	37-1
1654	SS37	Surface Soil	1987	Ethylbenzene	N/A	µg/kg	1	1	4.20E+03	4.20E+03	37AB-1
1655	SS37	Surface Soil	1988	Ethylbenzene	N/A	µg/kg	4	4	3	570	37AB-9
1656	SS37	Surface Soil	1988	Fluoranthene	N/A	µg/kg	1	1	570	570	37AB-11
1657	SS37	Surface Soil	1988	Fluorene	N/A	µg/kg	4	4	70	3.10E+03	37AB-9
1658	SS37	Surface Soil	1986	Lead	N/A	µg/kg	11	11	4.00E+03	9.00E+03	37-1
1659	SS37	Surface Soil	1987	Lead	N/A	µg/kg	35	35	3.00E+03	2.00E+04	37-3
1660	SS37	Surface Soil	1988	Lead	N/A	µg/kg	17	17	4.10E+03	2.50E+05	37AB-10
1661	SS37	Surface Soil	1986	Naphthalene	N/A	µg/kg	1	1	670	670	37-1
1662	SS37	Surface Soil	1988	Naphthalene	N/A	µg/kg	6	6	170	1.20E+04	37AB-9
1663	SS37	Surface Soil	1986	o-Xylene	N/A	µg/kg	3	3	37	42	37-1
1664	SS37	Surface Soil	1987	Phenanthrene	N/A	µg/kg	1	1	1.50E+03	1.50E+03	37AB-1
1665	SS37	Surface Soil	1988	Phenanthrene	N/A	µg/kg	3	3	52	2.30E+03	37AB-9
1666	SS37	Surface Soil	1987	Phenol	N/A	µg/kg	2	2	26	35	37AB-3
1667	SS37	Surface Soil	1988	Pyrene	N/A	µg/kg	2	2	200	640	37AB-11
1668	SS37	Surface Soil	1986	Toluene	N/A	µg/kg	4	4	28	115	37-2
1669	SS37	Surface Soil	1987	Toluene	N/A	µg/kg	4	4	2	3.50E+03	37AB-1
1670	SS37	Surface Soil	1988	Toluene	N/A	µg/kg	6	6	2	1.40E+03	37AB-6
1671	SS37	Surface Soil	1987	Trichloroethene	N/A	µg/kg	5	5	1	3	37AB-4
1672	SS37	Surface Soil	1986	Xylenes (total)	N/A	µg/kg	1	1	32	32	37-2
1673	SS37	Surface Soil	1987	Xylenes (total)	N/A	µg/kg	2	2	5	2.40E+04	37AB-1
1674	SS37	Surface Soil	1988	Xylenes (total)	N/A	µg/kg	6	6	4	4.20E+03	37AB-6
1675	SS37	Soil	1988	1,1,1-Trichloroethane	N/A	µg/kg	1	1	72	72	37-SD-1
1676	SS37	Soil	1988	2-Butanone (mek)	N/A	µg/kg	1	1	17	17	37AB-8
1677	SS37	Soil	1987	2-Methylnaphthalene	N/A	µg/kg	2	2	3.60E+03	2.60E+04	37AB-1
1678	SS37	Soil	1988	2-Methylnaphthalene	N/A	µg/kg	2	2	480	4.30E+03	37AB-6
1679	SS37	Soil	1986	4,4'-DDT	N/A	µg/kg	1	1	70	70	37SD-1
1680	SS37	Soil	1988	Benzo(a)anthracene	N/A	µg/kg	1	1	210	210	37AB-8
1681	SS37	Soil	1986	Beta-BHC	N/A	µg/kg	1	1	5	5	37SD-1
1682	SS37	Soil	1988	Chrysene	N/A	µg/kg	1	1	290	290	37AB-8
1683	SS37	Soil	1987	Dibenzofuran	N/A	µg/kg	2	2	89	1.00E+03	37AB-1
1684	SS37	Soil	1987	Ethylbenzene	N/A	µg/kg	2	2	1.50E+04	4.30E+04	37AB-2
1685	SS37	Soil	1988	Ethylbenzene	N/A	µg/kg	3	3	2	190	37AB-6
1686	SS37	Soil	1987	Fluoranthrene	N/A	µg/kg	3	3	18	66	37-3
1687	SS37	Soil	1988	Fluoranthrene	N/A	µg/kg	1	1	290	290	37AB-8
1688	SS37	Soil	1987	Fluorene	N/A	µg/kg	2	2	67	1.20E+03	37AB-1
1689	SS37	Soil	1986	Lead	N/A	µg/kg	2	2	1.00E+04	1.90E+04	37-1
1690	SS37	Soil	1987	Lead	N/A	µg/kg	7	7	6.00E+03	3.80E+04	37AB-4
1691	SS37	Soil	1988	Lead	N/A	µg/kg	9	9	6.10E+03	1.80E+05	37AB-10
1692	SS37	Soil	1987	Naphthalene	N/A	µg/kg	2	2	1.90E+03	1.20E+04	37AB-1
1693	SS37	Soil	1988	Naphthalene	N/A	µg/kg	1	1	3.00E+03	3.00E+03	37AB-6
1694	SS37	Soil	1986	Phenanthrene	N/A	µg/kg	1	1	50	50	37-2
1695	SS37	Soil	1987	Phenanthrene	N/A	µg/kg	3	3	36	410	37AB-1
1696	SS37	Soil	1988	Phenanthrene	N/A	µg/kg	1	1	200	200	37AB-8
1697	SS37	Soil	1987	Pyrene	N/A	µg/kg	3	3	22	61	37-3
1698	SS37	Soil	1988	Pyrene	N/A	µg/kg	1	1	360	360	37AB-8
1699	SS37	Soil	1987	Toluene	N/A	µg/kg	2	2	4.30E+03	7.90E+04	37AB-2
1700	SS37	Soil	1988	Toluene	N/A	µg/kg	3	3	4	120	37AB-8
1701	SS37	Soil	1987	Trichloroethene	N/A	µg/kg	2	2	2	3	37AB-3

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1702	SS37	Soil	1988	Trichloroethene	N/A	µg/kg	1	1	3	3	37-SD-2
1703	SS37	Soil	1987	Xylenes (total)	N/A	µg/kg	2	2	1.00E+05	2.10E+05	37AB-2
1704	SS37	Soil	1983	Xylenes (total)	N/A	µg/kg	4	4	3	700	37AB-8
1705	SS39/63	Water	1992	0,0,0-Triethyl phosphorothioate	10	µg/L	6	–	–	–	
1706	SS39/63	Water	1992	0,0-Diethyl 0-2-pyrazinyl phosphorothioa	10	µg/L	6	–	–	–	
1707	SS39/63	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	5	–	–	–	
1708	SS39/63	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	5	–	–	–	
1709	SS39/63	Water	1992	1,1-Dichloroethane	1	µg/L	5	–	–	–	
1710	SS39/63	Water	1992	1,2,4-Trichlorobenzene	10	µg/L	6	–	–	–	
1711	SS39/63	Water	1992	1,2-Dichlorobenzene	10	µg/L	6	–	–	–	
1712	SS39/63	Water	1992	1,2-Dichloroethane	0.5	µg/L	5	–	–	–	
1713	SS39/63	Water	1992	1,3-Dichlorobenzene	10	µg/L	6	–	–	–	
1714	SS39/63	Water	1992	1,4-Dichlorobenzene	2	µg/L	11	–	–	–	
1715	SS39/63	Water	1992	1,4-Naphthoquinone	10	µg/L	6	–	–	–	
1716	SS39/63	Water	1992	1-Naphthylamine	10	µg/L	6	–	–	–	
1717	SS39/63	Water	1992	2,3,4,6-Tetrachlorophenol	10	µg/L	6	–	–	–	
1718	SS39/63	Water	1992	2,4,5-Trichlorophenol	10	µg/L	6	–	–	–	
1719	SS39/63	Water	1992	2,4,6-Trichlorophenol	10	µg/L	6	–	–	–	
1720	SS39/63	Water	1992	2,4-Dichlorophenol	10	µg/L	6	–	–	–	
1721	SS39/63	Water	1992	2,4-Dimethylphenol	10	µg/L	6	–	–	–	
1722	SS39/63	Water	1992	2,4-Dinitrophenol	50	µg/L	6	–	–	–	
1723	SS39/63	Water	1992	2,4-Dinitrotoluene	10	µg/L	6	–	–	–	
1724	SS39/63	Water	1992	2,6-Dichlorophenol	10	µg/L	6	–	–	–	
1725	SS39/63	Water	1992	2,6-Dinitrotoluene	10	µg/L	6	–	–	–	
1726	SS39/63	Water	1992	2-Acetylaminofluorene	10	µg/L	6	–	–	–	
1727	SS39/63	Water	1992	2-Chloronaphthalene	10	µg/L	6	–	–	–	
1728	SS39/63	Water	1992	2-Chlorophenol	10	µg/L	6	–	–	–	
1729	SS39/63	Water	1992	2-Methylnaphthalene	10	µg/L	6	–	–	–	
1730	SS39/63	Water	1992	2-Methylphenol	10	µg/L	6	–	–	–	
1731	SS39/63	Water	1992	2-Naphthylamine	10	µg/L	6	–	–	–	
1732	SS39/63	Water	1992	2-Nitroaniline	50	µg/L	6	–	–	–	
1733	SS39/63	Water	1992	2-Nitrophenol	10	µg/L	6	–	–	–	
1734	SS39/63	Water	1992	3,3'-Dichlorobenzidine	20	µg/L	6	–	–	–	
1735	SS39/63	Water	1992	3,3'-Dimethylbenzidine	10	µg/L	6	–	–	–	
1736	SS39/63	Water	1992	3-Methylcholanthrene	10	µg/L	6	–	–	–	
1737	SS39/63	Water	1992	3-Nitroaniline	50	µg/L	6	–	–	–	
1738	SS39/63	Water	1992	4,6-Dinitro-2-methylphenol	50	µg/L	6	–	–	–	
1739	SS39/63	Water	1992	4-Aminobiphenyl	10	µg/L	6	–	–	–	
1740	SS39/63	Water	1992	4-Bromophenylphenyl ether	10	µg/L	6	–	–	–	
1741	SS39/63	Water	1992	4-Chloro-3-methylphenol	20	µg/L	6	–	–	–	
1742	SS39/63	Water	1992	4-Chloroaniline	20	µg/L	6	–	–	–	
1743	SS39/63	Water	1992	4-Chlorophenylphenyl ether	10	µg/L	6	–	–	–	
1744	SS39/63	Water	1992	4-Methylphenol	10	µg/L	6	–	–	–	
1745	SS39/63	Water	1992	4-Nitroaniline	50	µg/L	6	–	–	–	
1746	SS39/63	Water	1992	4-Nitrophenol	50	µg/L	6	–	–	–	
1747	SS39/63	Water	1992	4-Nitroquinoline-1-oxide	10	µg/L	6	–	–	–	
1748	SS39/63	Water	1992	5-Nitro-o-toluidine	10	µg/L	6	–	–	–	
1749	SS39/63	Water	1992	7,12-Dimethylbenz[a]anthracene	10	µg/L	6	–	–	–	
1750	SS39/63	Water	1992	Acenaphthene	10	µg/L	6	–	–	–	
1751	SS39/63	Water	1992	Acenaphthylene	10	µg/L	6	–	–	–	
1752	SS39/63	Water	1992	Acetophenone	10	µg/L	6	–	–	–	
1753	SS39/63	Water	1992	Alpha,alpha-dimethylphenethylamine	10	µg/L	6	–	–	–	
1754	SS39/63	Water	1992	Aniline	10	µg/L	6	–	–	–	
1755	SS39/63	Water	1992	Anthracene	10	µg/L	6	–	–	–	
1756	SS39/63	Water	1992	Antimony	200	µg/L	7	–	–	–	
1757	SS39/63	Water	1992	Aramite	10	µg/L	6	–	–	–	
1758	SS39/63	Water	1992	Arsenic	5	µg/L	1	–	–	–	
1759	SS39/63	Water	1992	Barium	20	µg/L	7	5	120	210	39M04
1760	SS39/63	Water	1992	Benzene	2	µg/L	5	–	–	–	
1761	SS39/63	Water	1992	Benzo(a)anthracene	10	µg/L	6	–	–	–	
1762	SS39/63	Water	1992	Benzo(a)pyrene	10	µg/L	6	–	–	–	
1763	SS39/63	Water	1992	Benzo(b)fluoranthene	10	µg/L	6	–	–	–	
1764	SS39/63	Water	1992	Benzo(ghi)perylene	10	µg/L	6	–	–	–	
1765	SS39/63	Water	1992	Benzo(k)fluoranthene	10	µg/L	6	–	–	–	
1766	SS39/63	Water	1992	Benzyl alcohol	20	µg/L	6	–	–	–	
1767	SS39/63	Water	1992	Beryllium	3	µg/L	7	–	–	–	
1768	SS39/63	Water	1992	Bis(2-chloroethoxy)methane	10	µg/L	6	–	–	–	
1769	SS39/63	Water	1992	Bis(2-chloroethyl) ether	10	µg/L	6	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1770	SS39/63	Water	1992	Bis(2-chloroisopropyl) ether	10	μg/L	6	–	–	–	
1771	SS39/63	Water	1992	Bis(2-ethylhexyl) phthalate	10	μg/L	5	–	–	–	
1772	SS39/63	Water	1992	Bromide	500	μg/L	1	–	–	–	
1773	SS39/63	Water	1992	Butylbenzylphthalate	10	μg/L	6	–	–	–	
1774	SS39/63	Water	1992	Cadmium	10	μg/L	7	–	–	–	
1775	SS39/63	Water	1992	Calcium	100	μg/L	7	5	4.70E+04	5.10E+04	39M01
1776	SS39/63	Water	1992	Carbon tetrachloride	1	μg/L	5	–	–	–	
1777	SS39/63	Water	1992	Chloride	200	μg/L	1	–	–	–	
1778	SS39/63	Water	1992	Chlorinated benzenes	10	μg/L	12	–	–	–	
1779	SS39/63	Water	1992	Chlorobenzilate	10	μg/L	6	–	–	–	
1780	SS39/63	Water	1992	Chloroform	0.5	μg/L	5	–	–	–	
1781	SS39/63	Water	1992	Chromium	20	μg/L	7	–	–	–	
1782	SS39/63	Water	1992	Chrysene	10	μg/L	6	–	–	–	
1783	SS39/63	Water	1992	Cis-1,2-dichloroethylene	1	μg/L	5	–	–	–	
1784	SS39/63	Water	1992	Cobalt	20	μg/L	7	–	–	–	
1785	SS39/63	Water	1992	Copper	20	μg/L	7	1	36	36	39M04
1786	SS39/63	Water	1992	Di-n-butylphthalate	10	μg/L	6	–	–	–	
1787	SS39/63	Water	1992	Di-n-octylphthalate	10	μg/L	6	–	–	–	
1788	SS39/63	Water	1992	Diallate	10	μg/L	6	–	–	–	
1789	SS39/63	Water	1992	Dibenz[a,h]anthracene	10	μg/L	6	–	–	–	
1790	SS39/63	Water	1992	Dibenzofuran	10	μg/L	6	–	–	–	
1791	SS39/63	Water	1992	Diethyl phthalate	10	μg/L	6	–	–	–	
1792	SS39/63	Water	1992	Dimethoate	10	μg/L	6	–	–	–	
1793	SS39/63	Water	1992	Dimethyl phthalate	10	μg/L	6	–	–	–	
1794	SS39/63	Water	1992	Diphenylamine	10	μg/L	6	–	–	–	
1795	SS39/63	Water	1992	Ethyl methanesulfonate	10	μg/L	6	–	–	–	
1796	SS39/63	Water	1992	Ethylbenzene	2	μg/L	5	–	–	–	
1797	SS39/63	Water	1992	Famphur	10	μg/L	6	–	–	–	
1798	SS39/63	Water	1992	Fluoranthene	10	μg/L	6	–	–	–	
1799	SS39/63	Water	1992	Fluorene	10	μg/L	6	–	–	–	
1800	SS39/63	Water	1992	Fluoride	100	μg/L	1	–	–	–	
1801	SS39/63	Water	1992	Hexachlorobenzene	10	μg/L	6	–	–	–	
1802	SS39/63	Water	1992	Hexachlorobutadiene	10	μg/L	6	–	–	–	
1803	SS39/63	Water	1992	Hexachlorocyclopentadiene	10	μg/L	6	–	–	–	
1804	SS39/63	Water	1992	Hexachloroethane	10	μg/L	6	–	–	–	
1805	SS39/63	Water	1992	Hexachlorophene	10	μg/L	6	–	–	–	
1806	SS39/63	Water	1992	Hexachloropropene	10	μg/L	6	–	–	–	
1807	SS39/63	Water	1992	Indeno(1,2,3-cd)pyrene	10	μg/L	6	–	–	–	
1808	SS39/63	Water	1992	Iron	20	μg/L	7	5	1.00E+03	9.10E+03	39M04
1809	SS39/63	Water	1992	Isodrin	10	μg/L	6	–	–	–	
1810	SS39/63	Water	1992	Isophorone	10	μg/L	6	–	–	–	
1811	SS39/63	Water	1992	Isosafrole	10	μg/L	6	–	–	–	
1812	SS39/63	Water	1992	Kepone	10	μg/L	6	–	–	–	
1813	SS39/63	Water	1992	Kerosene	1.00E+04	μg/L	6	–	–	–	
1814	SS39/63	Water	1992	Lead	5	μg/L	1	–	–	–	
1815	SS39/63	Water	1992	m-Cresol	10	μg/L	6	–	–	–	
1816	SS39/63	Water	1992	m-Dinitrobenzene	10	μg/L	6	–	–	–	
1817	SS39/63	Water	1992	Magnesium	100	μg/L	7	5	9.80E+03	1.10E+04	39M04
1818	SS39/63	Water	1992	Manganese	10	μg/L	7	5	1.40E+03	3.30E+03	39M03
1819	SS39/63	Water	1992	Methapyrilene	10	μg/L	6	–	–	–	
1820	SS39/63	Water	1992	Methyl methanesulfonate	10	μg/L	6	–	–	–	
1821	SS39/63	Water	1992	Methylenechloride	5	μg/L	5	–	–	–	
1822	SS39/63	Water	1992	n-Nitroso-di-n-dipropylamine	10	μg/L	6	–	–	–	
1823	SS39/63	Water	1992	n-Nitrosodi-n-butylamine	10	μg/L	6	–	–	–	
1824	SS39/63	Water	1992	n-Nitrosodiethylamine	10	μg/L	6	–	–	–	
1825	SS39/63	Water	1992	n-Nitrosodimethylamine	10	μg/L	6	–	–	–	
1826	SS39/63	Water	1992	n-Nitrosodiphenylamine	10	μg/L	6	–	–	–	
1827	SS39/63	Water	1992	n-Nitrosomethylethylamine	10	μg/L	6	–	–	–	
1828	SS39/63	Water	1992	n-Nitrosomorpholine	10	μg/L	6	–	–	–	
1829	SS39/63	Water	1992	n-Nitrosopiperidine	10	μg/L	6	–	–	–	
1830	SS39/63	Water	1992	Naphthalene	10	μg/L	6	–	–	–	
1831	SS39/63	Water	1992	Nickel	30	μg/L	7	–	–	–	
1832	SS39/63	Water	1992	Nitrate	200	μg/L	1	–	–	–	
1833	SS39/63	Water	1992	Nitrite	200	μg/L	1	–	–	–	
1834	SS39/63	Water	1992	Nitrobenzene	10	μg/L	6	–	–	–	
1835	SS39/63	Water	1992	Nitrosopyrrolidine	10	μg/L	6	–	–	–	
1836	SS39/63	Water	1992	o-Toluidine	10	μg/L	6	–	–	–	
1837	SS39/63	Water	1992	p-Dimethylaminoazobenzene	10	μg/L	6	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1838	SS39/63	Water	1992	p-Phenylenediamine	10	µg/L	6	—	—	—	
1839	SS39/63	Water	1992	Parathion	10	µg/L	6	—	—	—	
1840	SS39/63	Water	1992	Pentachloronitrobenzene (pcnb)	10	µg/L	6	—	—	—	
1841	SS39/63	Water	1992	Pentachlorophenol	50	µg/L	6	—	—	—	
1842	SS39/63	Water	1992	Phenacetin	10	µg/L	6	—	—	—	
1843	SS39/63	Water	1992	Phenanthrene	10	µg/L	6	—	—	—	
1844	SS39/63	Water	1992	Phenol	10	µg/L	6	—	—	—	
1845	SS39/63	Water	1992	Phosphate	400	µg/L	1	—	—	—	
1846	SS39/63	Water	1992	Potassium	300	µg/L	7	5	3.20E+03	3.80E+03	39M04
1847	SS39/63	Water	1992	Pronamide	10	µg/L	6	—	—	—	
1848	SS39/63	Water	1992	Pyrene	10	µg/L	6	—	—	—	
1849	SS39/63	Water	1992	Safrol	10	µg/L	6	—	—	—	
1850	SS39/63	Water	1992	Silver	20	µg/L	7	—	—	—	
1851	SS39/63	Water	1992	Sodium	300	µg/L	7	6	300	4.60E+03	39M04
1852	SS39/63	Water	1992	Sulfate	500	µg/L	1	—	—	—	
1853	SS39/63	Water	1992	Sym-trinitrobenzene	10	µg/L	6	—	—	—	
1854	SS39/63	Water	1992	Tetrachloroethene	0.5	µg/L	5	—	—	—	
1855	SS39/63	Water	1992	Tetraethyl dithiopyrophosphate	10	µg/L	6	—	—	—	
1856	SS39/63	Water	1992	Tin	100	µg/L	7	—	—	—	
1857	SS39/63	Water	1992	Toluene	2	µg/L	5	—	—	—	
1858	SS39/63	Water	1992	Total organic carb	N/A	µg/L	1	1	5.00E+03	5.00E+03	39-5
1859	SS39/63	Water	1992	Trans-DCE	1	µg/L	5	—	—	—	
1860	SS39/63	Water	1992	Tributyl phosphate	10	µg/L	6	—	—	—	
1861	SS39/63	Water	1992	Trichloroethene	1	µg/L	5	—	—	—	
1862	SS39/63	Water	1992	Vanadium	30	µg/L	7	—	—	—	
1863	SS39/63	Water	1992	Vinyl chloride	2	µg/L	5	—	—	—	
1864	SS39/63	Water	1992	Xylenes (total)	5	µg/L	5	—	—	—	
1865	SS39/63	Water	1992	Zinc	10	µg/L	7	3	13	32	39M04
1866	SS39/63	Surface Soil	1989	2-Methylnaphthalene	30	µg/kg	17	2	30	1.20E+03	39SB15
1867	SS39/63	Surface Soil	1988	Aluminum	N/A	µg/kg	4	4	2.85E+06	7.26E+06	39M01
1868	SS39/63	Surface Soil	1988	Arsenic	6.39E+03	µg/kg	4	—	—	—	
1869	SS39/63	Surface Soil	1988	Barium	N/A	µg/kg	4	4	4.43E+04	9.20E+04	39M03
1870	SS39/63	Surface Soil	1988	Beryllium	320	µg/kg	4	2	565	750	39M01
1871	SS39/63	Surface Soil	1988	BHC, beta	1	µg/kg	4	1	2	2	39M01
1872	SS39/63	Surface Soil	1988	BHC, gamma (lindane)	1	µg/kg	4	—	—	—	
1873	SS39/63	Surface Soil	1988	Cadmium	455	µg/kg	4	3	546	1.08E+03	39M01
1874	SS39/63	Surface Soil	1988	Calcium	N/A	µg/kg	4	4	1.20E+06	3.72E+06	39M01
1875	SS39/63	Surface Soil	1988	Chlordane	1	µg/kg	4	1	2	2	39M03
1876	SS39/63	Surface Soil	1988	Chromium	N/A	µg/kg	4	4	5.45E+03	3.23E+04	39M01
1877	SS39/63	Surface Soil	1988	Cobalt	N/A	µg/kg	4	4	3.50E+03	8.25E+03	39M01
1878	SS39/63	Surface Soil	1988	Copper	N/A	µg/kg	3	3	9.30E+03	2.21E+04	39M01
1879	SS39/63	Surface Soil	1988	DDD, pp'	1	µg/kg	4	1	8	8	39M03
1880	SS39/63	Surface Soil	1989	DDD, pp'	1	µg/kg	17	9	1	328	39SB14
1881	SS39/63	Surface Soil	1988	DDE, pp'	1	µg/kg	4	1	2	2	39M03
1882	SS39/63	Surface Soil	1989	DDE, pp'	1	µg/kg	17	8	1	127	39SB02
1883	SS39/63	Surface Soil	1988	DDT, pp'	1	µg/kg	4	3	4	13	39M03
1884	SS39/63	Surface Soil	1989	DDT, pp'	1	µg/kg	17	9	1	437	39SB02
1885	SS39/63	Surface Soil	1988	Dieldrin	1	µg/kg	4	—	—	—	
1886	SS39/63	Surface Soil	1988	Endosulfan sulfate	1	µg/kg	4	—	—	—	
1887	SS39/63	Surface Soil	1988	Endosulfan, a	1	µg/kg	4	1	2	2	39M03
1888	SS39/63	Surface Soil	1988	Endosulfan, b	1	µg/kg	4	—	—	—	
1889	SS39/63	Surface Soil	1988	Endrin aldehyde	1	µg/kg	4	1	2	2	39M03
1890	SS39/63	Surface Soil	1989	Fluorene	30	µg/kg	17	3	30	680	39SB15
1891	SS39/63	Surface Soil	1988	Heptachlor epoxide	1	µg/kg	4	—	—	—	
1892	SS39/63	Surface Soil	1988	Iron	N/A	µg/kg	4	4	7.50E+06	1.53E+07	39M01
1893	SS39/63	Surface Soil	1989	Isophorone	30	µg/kg	17	2	30	1.30E+04	39SB01
1894	SS39/63	Surface Soil	1992	Kerosene	137	µg/kg	13	3	930	3.90E+03	39SS08A
1895	SS39/63	Surface Soil	1988	Lead	N/A	µg/kg	4	4	4.79E+03	1.15E+04	39M01
1896	SS39/63	Surface Soil	1988	Magnesium	N/A	µg/kg	4	4	1.69E+06	4.34E+06	39M01
1897	SS39/63	Surface Soil	1988	Manganese	N/A	µg/kg	4	4	1.41E+05	2.86E+05	39M01
1898	SS39/63	Surface Soil	1989	Naphthalene	30	µg/kg	17	2	30	930	39SB01
1899	SS39/63	Surface Soil	1988	Nickel	N/A	µg/kg	4	4	6.59E+03	1.67E+04	39M01
1900	SS39/63	Surface Soil	1988	Potassium	N/A	µg/kg	4	4	2.63E+05	5.44E+05	39M01
1901	SS39/63	Surface Soil	1988	Sodium	N/A	µg/kg	4	4	1.36E+05	2.86E+05	39M01
1902	SS39/63	Surface Soil	1992	Total petroleum hydrocarbons	2.00E+04	µg/kg	23	13	2.20E+04	6.90E+05	39SS07A
1903	SS39/63	Surface Soil	1988	TPH	N/A	µg/kg	4	4	2.05E+04	2.15E+06	39M03
1904	SS39/63	Surface Soil	1989	TPH	10	µg/kg	56	32	20	1.78E+07	39SB03
1905	SS39/63	Surface Soil	1988	Vanadium	N/A	µg/kg	4	4	1.18E+04	2.69E+04	39M01

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1906	SS39/63	Surface Soil	1988	Zinc	N/A	µg/kg	4	4	2.21E+04	4.52E+04	39M01
1907	SS39/63	Soil	1989	2-Methylnaphthalene	30	µg/kg	2	–	–	–	
1908	SS39/63	Soil	1988	Aluminum	N/A	µg/kg	3	3	6.47E+06	1.04E+07	39M03
1909	SS39/63	Soil	1988	Arsenic	6.39E+03	µg/kg	3	1	8.89E+03	8.89E+03	39M03
1910	SS39/63	Soil	1988	Barium	N/A	µg/kg	3	3	7.52E+04	9.92E+04	39M03
1911	SS39/63	Soil	1988	Beryllium	N/A	µg/kg	3	3	462	1.45E+03	39M03
1912	SS39/63	Soil	1988	BHC, beta	1	µg/kg	3	–	–	–	
1913	SS39/63	Soil	1988	BHC, gamma (lindane)	1	µg/kg	3	–	–	–	
1914	SS39/63	Soil	1988	Cadmium	455	µg/kg	3	2	743	1.29E+03	39M03
1915	SS39/63	Soil	1988	Calcium	N/A	µg/kg	3	3	2.70E+06	4.28E+06	39M03
1916	SS39/63	Soil	1988	Chlordane	1	µg/kg	3	1	11	11	39M03
1917	SS39/63	Soil	1988	Chromium	N/A	µg/kg	3	3	1.17E+04	1.87E+04	39M03
1918	SS39/63	Soil	1988	Cobalt	N/A	µg/kg	3	3	6.22E+03	9.39E+03	39M03
1919	SS39/63	Soil	1988	Copper	N/A	µg/kg	4	4	1.32E+04	2.19E+04	39M03
1920	SS39/63	Soil	1988	DDD, pp'	N/A	µg/kg	3	3	4	262	39M03
1921	SS39/63	Soil	1989	DDD, pp'	1	µg/kg	2	–	–	–	
1922	SS39/63	Soil	1988	DDE, pp'	1	µg/kg	3	2	7	56	39M03
1923	SS39/63	Soil	1989	DDE, pp'	1	µg/kg	2	–	–	–	
1924	SS39/63	Soil	1988	DDT, pp'	N/A	µg/kg	3	3	6	356	39M03
1925	SS39/63	Soil	1989	DDT, pp'	1	µg/kg	2	–	–	–	
1926	SS39/63	Soil	1988	Dieldrin	1	µg/kg	3	–	–	–	
1927	SS39/63	Soil	1988	Endosulfan sulfate	1	µg/kg	3	–	–	–	
1928	SS39/63	Soil	1988	Endosulfan, a	1	µg/kg	3	1	16	16	39M03
1929	SS39/63	Soil	1988	Endosulfan, b	1	µg/kg	3	–	–	–	
1930	SS39/63	Soil	1988	Endrin aldehyde	1	µg/kg	3	1	50	50	39M03
1931	SS39/63	Soil	1989	Fluorene	30	µg/kg	2	–	–	–	
1932	SS39/63	Soil	1988	Heptachlor epoxide	1	µg/kg	3	–	–	–	
1933	SS39/63	Soil	1988	Iron	N/A	µg/kg	3	3	1.26E+07	2.06E+07	39M03
1934	SS39/63	Soil	1989	Isophorone	30	µg/kg	2	–	–	–	
1935	SS39/63	Soil	1992	Kerosene	137	µg/kg	27	8	2.70E+03	8.20E+04	39SS02C
1936	SS39/63	Soil	1988	Lead	N/A	µg/kg	3	3	9.92E+03	1.40E+04	39M03
1937	SS39/63	Soil	1988	Magnesium	N/A	µg/kg	3	3	3.74E+06	5.45E+06	39M03
1938	SS39/63	Soil	1988	Manganese	N/A	µg/kg	3	3	2.03E+05	2.84E+05	39M03
1939	SS39/63	Soil	1989	Naphthalene	30	µg/kg	2	–	–	–	
1940	SS39/63	Soil	1988	Nickel	N/A	µg/kg	3	3	1.55E+04	2.01E+04	39M03
1941	SS39/63	Soil	1988	Potassium	N/A	µg/kg	3	3	5.80E+05	7.05E+05	39M02
1942	SS39/63	Soil	1988	Sodium	N/A	µg/kg	3	3	2.49E+05	3.89E+05	39M03
1943	SS39/63	Soil	1992	Total petroleum hydrocarbons	2.00E+04	µg/kg	47	14	6.90E+04	3.20E+07	39SS06C
1944	SS39/63	Soil	1988	TPH	N/A	µg/kg	3	3	6.21E+05	4.10E+06	39M03
1945	SS39/63	Soil	1989	TPH	10	µg/kg	33	27	42	5.82E+04	39S01
1946	SS39/63	Soil	1988	Vanadium	N/A	µg/kg	3	3	2.45E+04	3.78E+04	39M03
1947	SS39/63	Soil	1988	Zinc	N/A	µg/kg	3	3	4.18E+04	5.18E+04	39M03
1948	SS57	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	3	–	–	–	
1949	SS57	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	3	–	–	–	
1950	SS57	Water	1992	1,1-Dichloroethane	1	µg/L	3	–	–	–	
1951	SS57	Water	1992	1,2-Dichloroethane	0.5	µg/L	3	1	5.3	5.3	57SB02
1952	SS57	Water	1992	1,4-Dichlorobenzene	2	µg/L	3	–	–	–	
1953	SS57	Water	1992	Benzene	2	µg/L	3	2	5	530	57SB02
1954	SS57	Water	1992	Carbon tetrachloride	1	µg/L	3	–	–	–	
1955	SS57	Water	1992	Chloroform	0.5	µg/L	3	–	–	–	
1956	SS57	Water	1992	Cis-1,2-dichloroethylene	N/A	µg/L	3	3	1.1	73	57SB02
1957	SS57	Water	1992	Ethylbenzene	2	µg/L	3	1	180	180	57SB02
1958	SS57	Water	1992	Lead	5	µg/L	3	2	5.8	9.3	57SB02
1959	SS57	Water	1992	Methylenechloride	5	µg/L	3	–	–	–	
1960	SS57	Water	1992	Tetrachloroethene	0.5	µg/L	3	1	1	1	57SB02
1961	SS57	Water	1992	Toluene	2	µg/L	3	1	1.90E+03	1.90E+03	57SB02
1962	SS57	Water	1992	Trans-DCE	1	µg/L	3	–	–	–	
1963	SS57	Water	1992	Trichloroethene	1	µg/L	3	–	–	–	
1964	SS57	Water	1992	Vinyl chloride	2	µg/L	3	–	–	–	
1965	SS57	Water	1992	Xylenes (total)	5	µg/L	3	1	1.00E+03	1.00E+03	57SB02
1966	SS57	Surface Soil	1992	1,1,1-Trichloroethane	0.5	µg/kg	3	–	–	–	
1967	SS57	Surface Soil	1992	1,1,2-Trichloroethane	0.5	µg/kg	3	–	–	–	
1968	SS57	Surface Soil	1992	1,1-Dichloroethane	1	µg/kg	3	–	–	–	
1969	SS57	Surface Soil	1992	1,2-Dichloroethane	0.5	µg/kg	3	–	–	–	
1970	SS57	Surface Soil	1992	1,4-Dichlorobenzene	2	µg/kg	3	–	–	–	
1971	SS57	Surface Soil	1992	Benzene	2	µg/kg	3	1	2.2	2.2	57SB03-A
1972	SS57	Surface Soil	1992	Carbon tetrachloride	1	µg/kg	3	–	–	–	
1973	SS57	Surface Soil	1992	Chloroform	0.5	µg/kg	3	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
1974	SS57	Surface Soil	1992	Cis-1,2-dichloroethylene	1	µg/kg	3	—	—	—	
1975	SS57	Surface Soil	1992	Ethylbenzene	2	µg/kg	3	2	6.7	2.60E+04	57SB02-A
1976	SS57	Surface Soil	1992	Lead	N/A	µg/kg	1	1	4.20E+03	4.20E+03	57SB01-A
1977	SS57	Surface Soil	1992	Methylenechloride	5	µg/kg	3	—	—	—	
1978	SS57	Surface Soil	1992	Tetrachloroethene	0.5	µg/kg	3	—	—	—	
1979	SS57	Surface Soil	1992	Toluene	2	µg/kg	3	2	18	3.80E+04	57SB02-A
1980	SS57	Surface Soil	1992	Trans-DCE	1	µg/kg	3	—	—	—	
1981	SS57	Surface Soil	1992	Trichloroethene	1	µg/kg	3	—	—	—	
1982	SS57	Surface Soil	1992	Vinyl chloride	2	µg/kg	3	—	—	—	
1983	SS57	Surface Soil	1992	Xylenes (total)	5	µg/kg	3	2	11	1.50E+05	57SB02-A
1984	SS57	Soil	1992	1,1,1-Trichloroethane	0.5	µg/kg	3	—	—	—	
1985	SS57	Soil	1992	1,1,2-Trichloroethane	0.5	µg/kg	3	—	—	—	
1986	SS57	Soil	1992	1,1-Dichloroethane	1	µg/kg	3	—	—	—	
1987	SS57	Soil	1992	1,2-Dichloroethane	0.5	µg/kg	3	—	—	—	
1988	SS57	Soil	1992	1,4-Dichlorobenzene	2	µg/kg	3	—	—	—	
1989	SS57	Soil	1992	Benzene	2	µg/kg	3	—	—	—	
1990	SS57	Soil	1992	Carbon tetrachloride	1	µg/kg	3	—	—	—	
1991	SS57	Soil	1992	Chloroform	0.5	µg/kg	3	—	—	—	
1992	SS57	Soil	1992	Cis-1,2-dichloroethylene	1	µg/kg	3	—	—	—	
1993	SS57	Soil	1992	Ethylbenzene	2	µg/kg	3	1	2.40E+03	2.40E+03	57SB02-B
1994	SS57	Soil	1992	Lead	N/A	µg/kg	1	1	3.90E+03	3.90E+03	57SB01-B
1995	SS57	Soil	1992	Methylenechloride	5	µg/kg	3	—	—	—	
1996	SS57	Soil	1992	Tetrachloroethene	0.5	µg/kg	3	—	—	—	
1997	SS57	Soil	1992	Toluene	2	µg/kg	3	2	16	1.60E+03	57SB02-B
1998	SS57	Soil	1992	Trans-DCE	1	µg/kg	3	—	—	—	
1999	SS57	Soil	1992	Trichloroethene	1	µg/kg	3	—	—	—	
2000	SS57	Soil	1992	Vinyl chloride	2	µg/kg	3	—	—	—	
2001	SS57	Soil	1992	Xylenes (total)	5	µg/kg	3	1	8.30E+03	8.30E+03	57SB02-B
2002	SS61	Water	1994	1,1,1-Trichloroethane	1	µg/L	3	—	—	—	
2003	SS61	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	3	—	—	—	
2004	SS61	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	3	—	—	—	
2005	SS61	Water	1994	1,1-Dichloroethane	1	µg/L	3	—	—	—	
2006	SS61	Water	1994	1,1-Dichloroethene	0.5	µg/L	3	—	—	—	
2007	SS61	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	5	—	—	—	
2008	SS61	Water	1994	1,2-Dichlorobenzene	10	µg/L	11	5	1.9	19	61MW01DD
2009	SS61	Water	1994	1,2-Dichloroethane	0.5	µg/L	3	—	—	—	
2010	SS61	Water	1994	1,2-Dichloropropane	0.5	µg/L	3	—	—	—	
2011	SS61	Water	1994	1,3-Dichlorobenzene	10	µg/L	11	—	—	—	
2012	SS61	Water	1994	1,4-Dichlorobenzene	10	µg/L	11	—	—	—	
2013	SS61	Water	1994	2,4,5-Trichlorophenol	10	µg/L	5	—	—	—	
2014	SS61	Water	1994	2,4,6-Trichlorophenol	10	µg/L	5	—	—	—	
2015	SS61	Water	1994	2,4-Dichlorophenol	10	µg/L	5	—	—	—	
2016	SS61	Water	1994	2,4-Dimethylphenol	10	µg/L	5	—	—	—	
2017	SS61	Water	1994	2,4-Dinitrophenol	50	µg/L	5	—	—	—	
2018	SS61	Water	1994	2,4-Dinitrotoluene	50	µg/L	10	—	—	—	
2019	SS61	Water	1994	2,6-Dinitrotoluene	10	µg/L	5	—	—	—	
2020	SS61	Water	1994	2-Chloroethylvinyl ether	2	µg/L	3	—	—	—	
2021	SS61	Water	1994	2-Chloronaphthalene	10	µg/L	5	—	—	—	
2022	SS61	Water	1994	2-Chlorophenol	10	µg/L	5	—	—	—	
2023	SS61	Water	1994	2-Methylnaphthalene	10	µg/L	5	4	6	16	61MW02
2024	SS61	Water	1994	2-Methylphenol	10	µg/L	5	—	—	—	
2025	SS61	Water	1994	2-Nitroaniline	50	µg/L	5	—	—	—	
2026	SS61	Water	1994	2-Nitrophenol	10	µg/L	5	—	—	—	
2027	SS61	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	5	—	—	—	
2028	SS61	Water	1994	3-Nitroaniline	50	µg/L	5	—	—	—	
2029	SS61	Water	1994	4-Bromophenyl-phenylether	10	µg/L	5	—	—	—	
2030	SS61	Water	1994	4-Chloro-3-methylphenol	20	µg/L	5	—	—	—	
2031	SS61	Water	1994	4-Chloroaniline	20	µg/L	5	—	—	—	
2032	SS61	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	5	—	—	—	
2033	SS61	Water	1994	4-Methylphenol	10	µg/L	5	2	16	16	61MW01DD
2034	SS61	Water	1994	4-Nitroaniline	20	µg/L	5	—	—	—	
2035	SS61	Water	1994	4-Nitrophenol	50	µg/L	5	—	—	—	
2036	SS61	Water	1994	Acenaphthene	10	µg/L	5	—	—	—	
2037	SS61	Water	1994	Acenaphthylene	10	µg/L	5	—	—	—	
2038	SS61	Water	1994	Aluminum	N/A	µg/L	4	4	661	2.42E+04	61MW01
2039	SS61	Water	1994	Anthracene	10	µg/L	5	—	—	—	
2040	SS61	Water	1994	Antimony	1	µg/L	4	—	—	—	
2041	SS61	Water	1994	Arsenic	N/A	µg/L	6	6	12.7	81.2	61MW02

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2042	SS61	Water	1994	Barium	N/A	µg/L	5	5	228	1.34E+03	61MW01
2043	SS61	Water	1994	Benzene	2	µg/L	35	2	2.1	2.8	61MW01
2044	SS61	Water	1994	Benzo(a)anthracene	10	µg/L	5	–	–	–	
2045	SS61	Water	1994	Benzo(a)pyrene	10	µg/L	5	–	–	–	
2046	SS61	Water	1994	Benzo(b)fluoranthene	10	µg/L	5	–	–	–	
2047	SS61	Water	1994	Benzo(g,h,i)perylene	10	µg/L	5	–	–	–	
2048	SS61	Water	1994	Benzo(k)fluoranthene	10	µg/L	5	–	–	–	
2049	SS61	Water	1994	Benzoic acid	50	µg/L	5	–	–	–	
2050	SS61	Water	1994	Benzyl alcohol	20	µg/L	5	–	–	–	
2051	SS61	Water	1994	Beryllium	1	µg/L	6	1	1.8	1.8	61MW01
2052	SS61	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	5	–	–	–	
2053	SS61	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	5	–	–	–	
2054	SS61	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	5	–	–	–	
2055	SS61	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	5	2	8.7	10.1	61MW02
2056	SS61	Water	1994	Bromodichloromethane	1	µg/L	3	–	–	–	
2057	SS61	Water	1994	Bromoform	1	µg/L	3	–	–	–	
2058	SS61	Water	1994	Bromomethane	2	µg/L	3	–	–	–	
2059	SS61	Water	1994	Butylbenzylphthalate	10	µg/L	5	1	2.1	2.1	61MW02
2060	SS61	Water	1994	Cadmium	1	µg/L	6	1	1.1	1.1	61MW03
2061	SS61	Water	1994	Calcium	N/A	µg/L	6	6	5.57E+04	9.68E+04	61MW03
2062	SS61	Water	1994	Carbazole	10	µg/L	5	–	–	–	
2063	SS61	Water	1994	Carbon tetrachloride	0.5	µg/L	3	–	–	–	
2064	SS61	Water	1994	Chlorobenzene	1	µg/L	6	–	–	–	
2065	SS61	Water	1994	Chloroethane	1	µg/L	3	–	–	–	
2066	SS61	Water	1994	Chloroform	1	µg/L	3	–	–	–	
2067	SS61	Water	1994	Chloromethane	1	µg/L	3	–	–	–	
2068	SS61	Water	1994	Chromium	1	µg/L	4	3	11.8	56.1	61MW01
2069	SS61	Water	1994	Chrysene	10	µg/L	5	–	–	–	
2070	SS61	Water	1994	Cis-1,2-dichloroethylene	6	µg/L	32	23	9.9	3.20E+03	61-PS-3A
2071	SS61	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	3	–	–	–	
2072	SS61	Water	1994	Cobalt	N/A	µg/L	6	6	5.4	84.8	61MW01
2073	SS61	Water	1994	Copper	1	µg/L	3	2	50.6	69.8	61MW03
2074	SS61	Water	1994	Di-n-butylphthalate	10	µg/L	5	2	2.8	3.7	61MW02DD
2075	SS61	Water	1994	Di-n-octylphthalate	10	µg/L	5	3	1.1	1.5	61MW02
2076	SS61	Water	1994	Dibenz(a,h)anthracene	10	µg/L	5	–	–	–	
2077	SS61	Water	1994	Dibenzofuran	10	µg/L	5	–	–	–	
2078	SS61	Water	1994	Dibromochloromethane	1	µg/L	3	–	–	–	
2079	SS61	Water	1994	Dichlorodifluoromethane	1	µg/L	3	–	–	–	
2080	SS61	Water	1994	Diesel	700	µg/L	32	–	–	–	
2081	SS61	Water	1994	Diethylphthalate	10	µg/L	5	–	–	–	
2082	SS61	Water	1994	Dimethylphthalate	10	µg/L	5	–	–	–	
2083	SS61	Water	1994	Ethylbenzene	3	µg/L	35	3	3.5	5.8	61-PS-3B
2084	SS61	Water	1994	Fluoranthene	10	µg/L	5	–	–	–	
2085	SS61	Water	1994	Fluorene	10	µg/L	5	–	–	–	
2086	SS61	Water	1994	Gasoline	120	µg/L	32	4	400	2.00E+03	61-PS-3A
2087	SS61	Water	1994	Hexachlorobenzene	10	µg/L	5	–	–	–	
2088	SS61	Water	1994	Hexachlorobutadiene	10	µg/L	5	–	–	–	
2089	SS61	Water	1994	Hexachlorocyclopentadiene	10	µg/L	5	–	–	–	
2090	SS61	Water	1994	Hexachloroethane	10	µg/L	5	–	–	–	
2091	SS61	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	5	–	–	–	
2092	SS61	Water	1994	Iron	N/A	µg/L	6	6	7.88E+03	1.24E+05	61MW01
2093	SS61	Water	1994	Isophorone	10	µg/L	5	1	6.7	6.7	61MW02
2094	SS61	Water	1994	Lead	1	µg/L	5	4	15.2	40.4	61MW03
2095	SS61	Water	1994	M,p-xylene	1	µg/L	3	2	17	290	61MW02
2096	SS61	Water	1994	Magnesium	N/A	µg/L	6	6	1.27E+04	2.64E+04	61MW01
2097	SS61	Water	1994	Manganese	N/A	µg/L	6	6	2.91E+03	6.82E+03	61MW01
2098	SS61	Water	1994	Methylene chloride	1	µg/L	3	–	–	–	
2099	SS61	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	5	–	–	–	
2100	SS61	Water	1994	n-Nitrosodiphenylamine	10	µg/L	5	2	2.7	2.9	61MW02DD
2101	SS61	Water	1994	Naphthalene	10	µg/L	5	4	12	40	61MW02DD
2102	SS61	Water	1994	Nickel	N/A	µg/L	6	6	11.2	153	61MW01
2103	SS61	Water	1994	Nitrobenzene	10	µg/L	5	–	–	–	
2104	SS61	Water	1994	o-Xylene	1	µg/L	3	1	8.8	8.8	61MW01
2105	SS61	Water	1994	Pentachlorophenol	50	µg/L	5	1	2.3	2.3	61MW02
2106	SS61	Water	1994	Phenanthrene	10	µg/L	5	1	1.7	1.7	61MW02
2107	SS61	Water	1994	Phenol	10	µg/L	5	–	–	–	
2108	SS61	Water	1994	Potassium	N/A	µg/L	6	6	6.49E+03	9.74E+03	61MW01
2109	SS61	Water	1994	Pyrene	10	µg/L	5	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2110	SS61	Water	1994	Silver	1	µg/L	6	—	—	—	
2111	SS61	Water	1994	Sodium	N/A	µg/L	6	6	9.92E+03	2.36E+04	61MW02
2112	SS61	Water	1994	Tetrachloroethene (PCE)	1	µg/L	36	—	—	—	
2113	SS61	Water	1994	Tin	1	µg/L	1	—	—	—	
2114	SS61	Water	1994	Toluene	2	µg/L	35	2	6.8	250	61MW02
2115	SS61	Water	1994	Trans-1,2-dichloroethene	3	µg/L	35	20	3.2	140	61-PS-8B
2116	SS61	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	3	—	—	—	
2117	SS61	Water	1994	Trichloroethene (TCE)	1	µg/L	35	15	1	1.10E+03	61-PS-3A
2118	SS61	Water	1994	Trichlorofluoromethane	1	µg/L	3	—	—	—	
2119	SS61	Water	1994	Vanadium	1	µg/L	5	4	10.7	165	61MW01
2120	SS61	Water	1994	Vinyl chloride	0.5	µg/L	3	—	—	—	
2121	SS61	Water	1994	Xylenes (total)	3	µg/L	32	9	3.3	35	61-PS-3A
2122	SS61	Water	1994	Zinc	N/A	µg/L	3	3	99.1	340	61MW01
2123	SS61	Surface Soil	1994	1,1,1-Trichloroethane	1	µg/kg	1	—	—	—	
2124	SS61	Surface Soil	1994	1,1,2,2-Tetrachloroethane	1	µg/kg	1	—	—	—	
2125	SS61	Surface Soil	1994	1,1,2-Trichloroethane	0.52	µg/kg	1	—	—	—	
2126	SS61	Surface Soil	1994	1,1-Dichloroethane	1	µg/kg	1	—	—	—	
2127	SS61	Surface Soil	1994	1,1-Dichloroethene	0.52	µg/kg	1	—	—	—	
2128	SS61	Surface Soil	1994	1,2,4-Trichlorobenzene	670	µg/kg	1	—	—	—	
2129	SS61	Surface Soil	1994	1,2-Dichlorobenzene	670	µg/kg	3	—	—	—	
2130	SS61	Surface Soil	1994	1,2-Dichloroethane	0.52	µg/kg	1	—	—	—	
2131	SS61	Surface Soil	1994	1,2-Dichloropropane	0.52	µg/kg	1	—	—	—	
2132	SS61	Surface Soil	1994	1,3-Dichlorobenzene	670	µg/kg	3	—	—	—	
2133	SS61	Surface Soil	1994	1,4-Dichlorobenzene	670	µg/kg	3	—	—	—	
2134	SS61	Surface Soil	1994	2,4,5-Trichlorophenol	670	µg/kg	1	—	—	—	
2135	SS61	Surface Soil	1994	2,4,6-Trichlorophenol	670	µg/kg	1	—	—	—	
2136	SS61	Surface Soil	1994	2,4-Dichlorophenol	670	µg/kg	1	—	—	—	
2137	SS61	Surface Soil	1994	2,4-Dimethylphenol	670	µg/kg	1	—	—	—	
2138	SS61	Surface Soil	1994	2,4-Dinitrophenol	3.40E+03	µg/kg	1	—	—	—	
2139	SS61	Surface Soil	1994	2,4-Dinitrotoluene	3.40E+03	µg/kg	2	—	—	—	
2140	SS61	Surface Soil	1994	2,6-Dinitrotoluene	670	µg/kg	1	—	—	—	
2141	SS61	Surface Soil	1994	2-Chloroethylvinyl ether	2.1	µg/kg	1	—	—	—	
2142	SS61	Surface Soil	1994	2-Chloronaphthalene	670	µg/kg	1	—	—	—	
2143	SS61	Surface Soil	1994	2-Chlorophenol	670	µg/kg	1	—	—	—	
2144	SS61	Surface Soil	1994	2-Methylnaphthalene	670	µg/kg	1	—	—	—	
2145	SS61	Surface Soil	1994	2-Methylphenol	670	µg/kg	1	—	—	—	
2146	SS61	Surface Soil	1994	2-Nitroaniline	3.40E+03	µg/kg	1	—	—	—	
2147	SS61	Surface Soil	1994	2-Nitrophenol	670	µg/kg	1	—	—	—	
2148	SS61	Surface Soil	1994	3,3'-Dichlorobenzidine	1.30E+03	µg/kg	1	—	—	—	
2149	SS61	Surface Soil	1994	3-Nitroaniline	3.40E+03	µg/kg	1	—	—	—	
2150	SS61	Surface Soil	1994	4-Bromophenyl-phenylether	670	µg/kg	1	—	—	—	
2151	SS61	Surface Soil	1994	4-Chloro-3-methylphenol	1.30E+03	µg/kg	1	—	—	—	
2152	SS61	Surface Soil	1994	4-Chloroaniline	1.30E+03	µg/kg	1	—	—	—	
2153	SS61	Surface Soil	1994	4-Chlorophenyl-phenylether	670	µg/kg	1	—	—	—	
2154	SS61	Surface Soil	1994	4-Methylphenol	670	µg/kg	1	—	—	—	
2155	SS61	Surface Soil	1994	4-Nitroaniline	3.40E+03	µg/kg	1	—	—	—	
2156	SS61	Surface Soil	1994	4-Nitrophenol	3.40E+03	µg/kg	1	—	—	—	
2157	SS61	Surface Soil	1994	Acenaphthene	670	µg/kg	1	—	—	—	
2158	SS61	Surface Soil	1994	Acenaphthylene	670	µg/kg	1	—	—	—	
2159	SS61	Surface Soil	1994	Aluminum	N/A	µg/kg	1	1	2.93E+06	2.93E+06	61MW01A
2160	SS61	Surface Soil	1994	Anthracene	670	µg/kg	1	—	—	—	
2161	SS61	Surface Soil	1994	Antimony	1.00E+03	µg/kg	1	—	—	—	
2162	SS61	Surface Soil	1994	Arsenic	N/A	µg/kg	1	1	2.70E+03	2.70E+03	61MW01A
2163	SS61	Surface Soil	1994	Barium	N/A	µg/kg	1	1	3.86E+04	3.86E+04	61MW01A
2164	SS61	Surface Soil	1994	Benzene	1	µg/kg	1	—	—	—	
2165	SS61	Surface Soil	1994	Benzo(a)anthracene	670	µg/kg	1	—	—	—	
2166	SS61	Surface Soil	1994	Benzo(a)pyrene	670	µg/kg	1	—	—	—	
2167	SS61	Surface Soil	1994	Benzo(b)fluoranthene	670	µg/kg	1	—	—	—	
2168	SS61	Surface Soil	1994	Benzo(g,h,i)perylene	670	µg/kg	1	—	—	—	
2169	SS61	Surface Soil	1994	Benzo(k)fluoranthene	670	µg/kg	1	—	—	—	
2170	SS61	Surface Soil	1994	Benzoic acid	3.40E+03	µg/kg	1	—	—	—	
2171	SS61	Surface Soil	1994	Benzyl alcohol	1.30E+03	µg/kg	1	—	—	—	
2172	SS61	Surface Soil	1994	Beryllium	1.00E+03	µg/kg	1	—	—	—	
2173	SS61	Surface Soil	1994	Bis(2-chloroethoxy)methane	670	µg/kg	1	—	—	—	
2174	SS61	Surface Soil	1994	Bis(2-chloroethyl)ether	670	µg/kg	1	—	—	—	
2175	SS61	Surface Soil	1994	Bis(2-chloroisopropyl)ether	670	µg/kg	1	—	—	—	
2176	SS61	Surface Soil	1994	Bis(2-ethylhexyl)phthalate	670	µg/kg	1	—	—	—	
2177	SS61	Surface Soil	1994	Bromodichloromethane	1	µg/kg	1	—	—	—	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2178	SS61	Surface Soil	1994	Bromoform	1	µg/kg	1	–	–	–	
2179	SS61	Surface Soil	1994	Bromomethane	2.1	µg/kg	1	–	–	–	
2180	SS61	Surface Soil	1994	Butylbenzylphthalate	670	µg/kg	1	–	–	–	
2181	SS61	Surface Soil	1994	Cadmium	1.00E+03	µg/kg	1	–	–	–	
2182	SS61	Surface Soil	1994	Calcium	N/A	µg/kg	1	1	1.97E+06	1.97E+06	61MW01A
2183	SS61	Surface Soil	1994	Carbazole	670	µg/kg	1	–	–	–	
2184	SS61	Surface Soil	1994	Carbon tetrachloride	0.52	µg/kg	1	–	–	–	
2185	SS61	Surface Soil	1994	Chlorobenzene	1	µg/kg	2	–	–	–	
2186	SS61	Surface Soil	1994	Chloroethane	1	µg/kg	1	–	–	–	
2187	SS61	Surface Soil	1994	Chloroform	1	µg/kg	1	–	–	–	
2188	SS61	Surface Soil	1994	Chloromethane	1	µg/kg	1	–	–	–	
2189	SS61	Surface Soil	1994	Chromium	N/A	µg/kg	1	1	8.10E+03	8.10E+03	61MW01A
2190	SS61	Surface Soil	1994	Chrysene	670	µg/kg	1	–	–	–	
2191	SS61	Surface Soil	1994	Cis-1,3-dichloropropene	0.52	µg/kg	1	–	–	–	
2192	SS61	Surface Soil	1994	Cobalt	N/A	µg/kg	1	1	4.10E+03	4.10E+03	61MW01A
2193	SS61	Surface Soil	1994	Copper	N/A	µg/kg	1	1	1.24E+04	1.24E+04	61MW01A
2194	SS61	Surface Soil	1994	Di-n-butylphthalate	670	µg/kg	1	–	–	–	
2195	SS61	Surface Soil	1994	Di-n-octylphthalate	670	µg/kg	1	–	–	–	
2196	SS61	Surface Soil	1994	Dibenz(a,h)anthracene	670	µg/kg	1	–	–	–	
2197	SS61	Surface Soil	1994	Dibenzofuran	670	µg/kg	1	–	–	–	
2198	SS61	Surface Soil	1994	Dibromochloromethane	1	µg/kg	1	–	–	–	
2199	SS61	Surface Soil	1994	Dichlorodifluoromethane	1	µg/kg	1	–	–	–	
2200	SS61	Surface Soil	1994	Diethylphthalate	670	µg/kg	1	–	–	–	
2201	SS61	Surface Soil	1994	Dimethylphthalate	670	µg/kg	1	–	–	–	
2202	SS61	Surface Soil	1994	Ethylbenzene	1	µg/kg	1	–	–	–	
2203	SS61	Surface Soil	1994	Fluoranthene	670	µg/kg	1	–	–	–	
2204	SS61	Surface Soil	1994	Fluorene	670	µg/kg	1	–	–	–	
2205	SS61	Surface Soil	1994	Hexachlorobenzene	670	µg/kg	1	–	–	–	
2206	SS61	Surface Soil	1994	Hexachlorobutadiene	670	µg/kg	1	–	–	–	
2207	SS61	Surface Soil	1994	Hexachlorocyclopentadiene	670	µg/kg	1	–	–	–	
2208	SS61	Surface Soil	1994	Hexachloroethane	670	µg/kg	1	–	–	–	
2209	SS61	Surface Soil	1994	Indeno(1,2,3-cd)pyrene	670	µg/kg	1	–	–	–	
2210	SS61	Surface Soil	1994	Iron	N/A	µg/kg	1	1	5.20E+06	5.20E+06	61MW01A
2211	SS61	Surface Soil	1994	Isophorone	670	µg/kg	1	–	–	–	
2212	SS61	Surface Soil	1994	Lead	N/A	µg/kg	1	1	5.70E+03	5.70E+03	61MW01A
2213	SS61	Surface Soil	1994	M,p-xylene	1	µg/kg	1	–	–	–	
2214	SS61	Surface Soil	1994	Magnesium	N/A	µg/kg	1	1	1.65E+06	1.65E+06	61MW01A
2215	SS61	Surface Soil	1994	Manganese	N/A	µg/kg	1	1	1.05E+05	1.05E+05	61MW01A
2216	SS61	Surface Soil	1994	Methylene chloride	1	µg/kg	1	–	–	–	
2217	SS61	Surface Soil	1994	n-Nitroso-di-n-propylamine	670	µg/kg	1	–	–	–	
2218	SS61	Surface Soil	1994	n-Nitrosodiphenylamine (1)	670	µg/kg	1	–	–	–	
2219	SS61	Surface Soil	1994	Naphthalene	670	µg/kg	1	–	–	–	
2220	SS61	Surface Soil	1994	Nickel	N/A	µg/kg	1	1	1.03E+04	1.03E+04	61MW01A
2221	SS61	Surface Soil	1994	Nitrobenzene	670	µg/kg	1	–	–	–	
2222	SS61	Surface Soil	1994	o-Xylene	1	µg/kg	1	–	–	–	
2223	SS61	Surface Soil	1994	Pentachlorophenol	3.40E+03	µg/kg	1	–	–	–	
2224	SS61	Surface Soil	1994	Phenanthrene	670	µg/kg	1	–	–	–	
2225	SS61	Surface Soil	1994	Phenol	670	µg/kg	1	–	–	–	
2226	SS61	Surface Soil	1994	Pyrene	670	µg/kg	1	–	–	–	
2227	SS61	Surface Soil	1994	Silver	1.00E+03	µg/kg	1	–	–	–	
2228	SS61	Surface Soil	1994	Tetrachloroethene (PCE)	0.52	µg/kg	1	–	–	–	
2229	SS61	Surface Soil	1994	Toluene	1	µg/kg	1	–	–	–	
2230	SS61	Surface Soil	1994	Trans-1,2-dichloroethene	1	µg/kg	1	–	–	–	
2231	SS61	Surface Soil	1994	Trans-1,3-dichloropropene	0.52	µg/kg	1	–	–	–	
2232	SS61	Surface Soil	1994	Trichloroethene (TCE)	0.52	µg/kg	1	–	–	–	
2233	SS61	Surface Soil	1994	Trichlorofluoromethane	1	µg/kg	1	–	–	–	
2234	SS61	Surface Soil	1994	Vanadium	N/A	µg/kg	1	1	1.50E+04	1.50E+04	61MW01A
2235	SS61	Surface Soil	1994	Vinyl chloride	0.52	µg/kg	1	–	–	–	
2236	SS61	Soil	1994	1,1,1-Trichloroethane	1	µg/kg	13	1	4.3	4.3	61MW02B
2237	SS61	Soil	1994	1,1,2,2-Tetrachloroethane	1	µg/kg	13	–	–	–	
2238	SS61	Soil	1994	1,1,2-Trichloroethane	0.5	µg/kg	13	–	–	–	
2239	SS61	Soil	1994	1,1-Dichloroethane	1	µg/kg	13	1	2.7	2.7	61MW02B
2240	SS61	Soil	1994	1,1-Dichloroethene	0.5	µg/kg	13	1	0.76	0.76	61MW02B
2241	SS61	Soil	1994	1,2,4-Trichlorobenzene	1.32E+04	µg/kg	11	–	–	–	
2242	SS61	Soil	1994	1,2-Dichlorobenzene	1.32E+04	µg/kg	37	4	2.9	11	61MW02B
2243	SS61	Soil	1994	1,2-Dichloroethane	0.5	µg/kg	13	–	–	–	
2244	SS61	Soil	1994	1,2-Dichloropropane	0.5	µg/kg	13	–	–	–	
2245	SS61	Soil	1994	1,3-Dichlorobenzene	1.32E+04	µg/kg	37	2	2.6	26	61MW02CD

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2246	SS61	Soil	1994	1,4-Dichlorobenzene	1.32E+04	µg/kg	37	1	7.6	7.6	61MW02A
2247	SS61	Soil	1994	2,4,5-Trichlorophenol	1.32E+04	µg/kg	11	–	–	–	
2248	SS61	Soil	1994	2,4,6-Trichlorophenol	1.32E+04	µg/kg	11	–	–	–	
2249	SS61	Soil	1994	2,4-Dichlorophenol	1.32E+04	µg/kg	11	–	–	–	
2250	SS61	Soil	1994	2,4-Dimethylphenol	1.32E+04	µg/kg	11	–	–	–	
2251	SS61	Soil	1994	2,4-Dinitrophenol	6.60E+04	µg/kg	11	–	–	–	
2252	SS61	Soil	1994	2,4-Dinitrotoluene	6.60E+04	µg/kg	22	–	–	–	
2253	SS61	Soil	1994	2,6-Dinitrotoluene	1.32E+04	µg/kg	11	–	–	–	
2254	SS61	Soil	1994	2-Chloroethylvinyl ether	2	µg/kg	13	–	–	–	
2255	SS61	Soil	1994	2-Chloronaphthalene	1.32E+04	µg/kg	11	–	–	–	
2256	SS61	Soil	1994	2-Chlorophenol	1.32E+04	µg/kg	11	–	–	–	
2257	SS61	Soil	1994	2-Methylnaphthalene	1.32E+04	µg/kg	11	2	13	1.30E+04	61MW02B
2258	SS61	Soil	1994	2-Methylphenol	1.32E+04	µg/kg	11	–	–	–	
2259	SS61	Soil	1994	2-Nitroaniline	6.60E+04	µg/kg	11	–	–	–	
2260	SS61	Soil	1994	2-Nitrophenol	1.32E+04	µg/kg	11	–	–	–	
2261	SS61	Soil	1994	3,3'-Dichlorobenzidine	2.60E+04	µg/kg	11	–	–	–	
2262	SS61	Soil	1994	3-Nitroaniline	6.60E+04	µg/kg	11	–	–	–	
2263	SS61	Soil	1994	4-Bromophenyl-phenylether	1.32E+04	µg/kg	11	–	–	–	
2264	SS61	Soil	1994	4-Chloro-3-methylphenol	2.60E+04	µg/kg	11	–	–	–	
2265	SS61	Soil	1994	4-Chloroaniline	2.60E+04	µg/kg	11	–	–	–	
2266	SS61	Soil	1994	4-Chlorophenyl-phenylether	1.32E+04	µg/kg	11	–	–	–	
2267	SS61	Soil	1994	4-Methylphenol	1.32E+04	µg/kg	11	–	–	–	
2268	SS61	Soil	1994	4-Nitroaniline	6.60E+04	µg/kg	11	–	–	–	
2269	SS61	Soil	1994	4-Nitrophenol	6.60E+04	µg/kg	11	–	–	–	
2270	SS61	Soil	1994	Acenaphthene	1.32E+04	µg/kg	11	–	–	–	
2271	SS61	Soil	1994	Acenaphthylene	1.32E+04	µg/kg	11	–	–	–	
2272	SS61	Soil	1994	Aluminum	N/A	µg/kg	11	11	2.93E+06	8.48E+06	61MW02C
2273	SS61	Soil	1994	Anthracene	1.32E+04	µg/kg	11	–	–	–	
2274	SS61	Soil	1994	Antimony	200	µg/kg	11	–	–	–	
2275	SS61	Soil	1994	Arsenic	N/A	µg/kg	11	11	2.40E+03	1.19E+04	61MW02C
2276	SS61	Soil	1994	Barium	N/A	µg/kg	11	11	3.22E+04	7.05E+05	61MW02C
2277	SS61	Soil	1994	Benzene	1.8	µg/kg	13	2	1.8	38	61MW02C
2278	SS61	Soil	1994	Benzo(a)anthracene	1.32E+04	µg/kg	11	–	–	–	
2279	SS61	Soil	1994	Benzo(a)pyrene	1.32E+04	µg/kg	11	–	–	–	
2280	SS61	Soil	1994	Benzo(b)fluoranthene	1.32E+04	µg/kg	11	–	–	–	
2281	SS61	Soil	1994	Benzo(g,h,i)perylene	1.32E+04	µg/kg	11	–	–	–	
2282	SS61	Soil	1994	Benzo(k)fluoranthene	1.32E+04	µg/kg	11	–	–	–	
2283	SS61	Soil	1994	Benzoic acid	6.60E+04	µg/kg	11	–	–	–	
2284	SS61	Soil	1994	Benzyl alcohol	2.60E+04	µg/kg	11	–	–	–	
2285	SS61	Soil	1994	Beryllium	400	µg/kg	11	–	–	–	
2286	SS61	Soil	1994	Bis(2-chloroethoxy)methane	1.32E+04	µg/kg	11	–	–	–	
2287	SS61	Soil	1994	Bis(2-chloroethyl)ether	1.32E+04	µg/kg	11	–	–	–	
2288	SS61	Soil	1994	Bis(2-chloroisopropyl)ether	1.32E+04	µg/kg	11	–	–	–	
2289	SS61	Soil	1994	Bis(2-ethylhexyl)phthalate	1.32E+04	µg/kg	11	–	–	–	
2290	SS61	Soil	1994	Bromodichloromethane	1	µg/kg	13	–	–	–	
2291	SS61	Soil	1994	Bromoform	1	µg/kg	13	–	–	–	
2292	SS61	Soil	1994	Bromomethane	2	µg/kg	13	–	–	–	
2293	SS61	Soil	1994	Butylbenzylphthalate	1.32E+04	µg/kg	11	–	–	–	
2294	SS61	Soil	1994	Cadmium	1.00E+03	µg/kg	11	–	–	–	
2295	SS61	Soil	1994	Calcium	N/A	µg/kg	11	11	1.62E+06	5.45E+06	61MW02B
2296	SS61	Soil	1994	Carbazole	1.32E+04	µg/kg	11	–	–	–	
2297	SS61	Soil	1994	Carbon tetrachloride	0.5	µg/kg	13	–	–	–	
2298	SS61	Soil	1994	Chlorobenzene	1	µg/kg	26	1	100	100	61MW02C
2299	SS61	Soil	1994	Chloroethane	1	µg/kg	13	–	–	–	
2300	SS61	Soil	1994	Chloroform	1	µg/kg	13	1	2.4	2.4	61MW02B
2301	SS61	Soil	1994	Chloromethane	1	µg/kg	13	–	–	–	
2302	SS61	Soil	1994	Chromium	N/A	µg/kg	11	11	7.00E+03	1.44E+04	61MW02C
2303	SS61	Soil	1994	Chrysene	1.32E+04	µg/kg	11	–	–	–	
2304	SS61	Soil	1994	Cis-1,3-dichloropropene	0.5	µg/kg	13	–	–	–	
2305	SS61	Soil	1994	Cobalt	N/A	µg/kg	11	11	2.00E+03	4.60E+03	61MW01C
2306	SS61	Soil	1994	Copper	N/A	µg/kg	11	11	1.17E+04	4.59E+04	61MW02C
2307	SS61	Soil	1994	Di-n-butylphthalate	1.32E+04	µg/kg	11	–	–	–	
2308	SS61	Soil	1994	Di-n-octylphthalate	1.32E+04	µg/kg	11	–	–	–	
2309	SS61	Soil	1994	Dibenz(a,h)anthracene	1.32E+04	µg/kg	11	–	–	–	
2310	SS61	Soil	1994	Dibenzofuran	1.32E+04	µg/kg	11	–	–	–	
2311	SS61	Soil	1994	Dibromochloromethane	1	µg/kg	13	–	–	–	
2312	SS61	Soil	1994	Dichlorodifluoromethane	1	µg/kg	5	–	–	–	
2313	SS61	Soil	1994	Diethylphthalate	1.32E+04	µg/kg	11	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2314	SS61	Soil	1994	Dimethylphthalate	1.32E+04	µg/kg	11	—	—	—	
2315	SS61	Soil	1994	Ethylbenzene	57	µg/kg	13	3	6.1	57	61MW02CD
2316	SS61	Soil	1994	Fluoranthene	1.32E+04	µg/kg	11	—	—	—	
2317	SS61	Soil	1994	Fluorene	1.32E+04	µg/kg	11	2	1	1.50E+03	61MW02B
2318	SS61	Soil	1994	Hexachlorobenzene	1.32E+04	µg/kg	11	—	—	—	
2319	SS61	Soil	1994	Hexachlorobutadiene	1.32E+04	µg/kg	11	—	—	—	
2320	SS61	Soil	1994	Hexachlorocyclopentadiene	1.32E+04	µg/kg	11	—	—	—	
2321	SS61	Soil	1994	Hexachloroethane	1.32E+04	µg/kg	11	—	—	—	
2322	SS61	Soil	1994	Indeno(1,2,3-cd)pyrene	1.32E+04	µg/kg	11	—	—	—	
2323	SS61	Soil	1994	Iron*	N/A	µg/kg	5	5	5.20E+06	1.03E+07	61MW01C
2324	SS61	Soil	1994	Isophorone	1.32E+04	µg/kg	11	2	10	1.00E+04	61MW02B
2325	SS61	Soil	1994	Lead	N/A	µg/kg	11	11	3.50E+03	1.95E+04	61MW02C
2326	SS61	Soil	1994	M,p-xylene	62	µg/kg	13	2	62	110	61MW02C
2327	SS61	Soil	1994	Magnesium	N/A	µg/kg	11	11	1.65E+06	5.28E+06	61MW02B
2328	SS61	Soil	1994	Manganese	N/A	µg/kg	11	11	7.19E+04	1.96E+05	61MW01C
2329	SS61	Soil	1994	Methylene chloride	1	µg/kg	13	2	1.7	2.3	61MW02B
2330	SS61	Soil	1994	n-Nitroso-di-n-propylamine	1.32E+04	µg/kg	11	—	—	—	
2331	SS61	Soil	1994	n-Nitrosodiphenylamine (1)	1.32E+04	µg/kg	11	—	—	—	
2332	SS61	Soil	1994	Naphthalene	1.32E+04	µg/kg	11	2	35	3.50E+04	61MW02B
2333	SS61	Soil	1994	Nickel	N/A	µg/kg	11	11	6.00E+03	1.24E+04	61MW02A
2334	SS61	Soil	1994	Nitrobenzene	1.32E+04	µg/kg	11	—	—	—	
2335	SS61	Soil	1994	o-Xylene	44	µg/kg	13	3	1.7	44	61MW02CD
2336	SS61	Soil	1994	Pentachlorophenol	6.60E+04	µg/kg	11	—	—	—	
2337	SS61	Soil	1994	Phenanthrene	1.32E+04	µg/kg	11	2	3	3.90E+03	61MW02B
2338	SS61	Soil	1994	Phenol	1.32E+04	µg/kg	11	—	—	—	
2339	SS61	Soil	1994	Pyrene	1.32E+04	µg/kg	11	—	—	—	
2340	SS61	Soil	1994	Silver	1.00E+03	µg/kg	11	—	—	—	
2341	SS61	Soil	1994	Tetrachloroethene (PCE)	7	µg/kg	13	4	7	140	61MW02B
2342	SS61	Soil	1994	Toluene	44	µg/kg	13	3	1.8	100	61MW02C
2343	SS61	Soil	1994	Trans-1,2-dichloroethene	1	µg/kg	13	1	2.9	2.9	61MW02B
2344	SS61	Soil	1994	Trans-1,3-dichloropropene	0.5	µg/kg	13	—	—	—	
2345	SS61	Soil	1994	Trichloroethene (TCE)	12	µg/kg	13	4	1.8	250	61MW02B
2346	SS61	Soil	1994	Trichlorofluoromethane	1	µg/kg	13	1	2.3	2.3	61MW02B
2347	SS61	Soil	1994	Vanadium	N/A	µg/kg	11	11	1.18E+04	2.22E+04	61MW02C
2348	SS61	Soil	1994	Vinyl chloride	0.5	µg/kg	13	—	—	—	
2349	SS61	Soil	1994	Zinc	N/A	µg/kg	12	12	1.39E+04	4.59E+04	61MW02C
2350	SS61-sp	Water	1994	Benzene	2	µg/L	9	—	—	—	
2351	SS61-sp	Water	1994	Cis-1,2-dichloroethylene	6	µg/L	9	7	9.9	3.20E+03	91-PS-3A
2352	SS61-sp	Water	1994	Diesel	700	µg/L	9	—	—	—	
2353	SS61-sp	Water	1994	Ethylbenzene	3	µg/L	9	1	5.8	5.8	91-PS-3B
2354	SS61-sp	Water	1994	Gasoline	120	µg/L	9	3	490	2.00E+03	91-PS-3A
2355	SS61-sp	Water	1994	Tetrachloroethene	1	µg/L	10	—	—	—	
2356	SS61-sp	Water	1994	Toluene	2	µg/L	9	—	—	—	
2357	SS61-sp	Water	1994	Trans-1,2-dichloroethylene	3	µg/L	9	5	6.4	56	91-PS-6A
2358	SS61-sp	Water	1994	Trichloroethene	1	µg/L	9	6	3.6	1.10E+03	91-PS-3A
2359	SS61-sp	Water	1994	Xylenes (total)	3	µg/L	9	3	15	35	91-PS-3A
2360	SS64	Water	1994	(Technical) chlordane	1	µg/L	4	—	—	—	
2361	SS64	Water	1994	1,1,1-Trichloroethane	1	µg/L	4	—	—	—	
2362	SS64	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	4	—	—	—	
2363	SS64	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	4	—	—	—	
2364	SS64	Water	1994	1,1-Dichloroethane	1	µg/L	4	—	—	—	
2365	SS64	Water	1994	1,1-Dichloroethene	0.5	µg/L	4	—	—	—	
2366	SS64	Water	1994	1,2,4-Trichlorobenzene	10	µg/L	5	—	—	—	
2367	SS64	Water	1994	1,2-Dichlorobenzene	10	µg/L	13	—	—	—	
2368	SS64	Water	1994	1,2-Dichloroethane	0.5	µg/L	4	—	—	—	
2369	SS64	Water	1994	1,2-Dichloropropane	0.5	µg/L	4	—	—	—	
2370	SS64	Water	1994	1,3-Dichlorobenzene	10	µg/L	13	—	—	—	
2371	SS64	Water	1994	1,4-Dichlorobenzene	10	µg/L	13	—	—	—	
2372	SS64	Water	1994	2,4,5-Trichlorophenol	10	µg/L	5	—	—	—	
2373	SS64	Water	1994	2,4,6-Trichlorophenol	10	µg/L	5	—	—	—	
2374	SS64	Water	1994	2,4-Dichlorophenol	10	µg/L	5	—	—	—	
2375	SS64	Water	1994	2,4-Dimethylphenol	10	µg/L	5	—	—	—	
2376	SS64	Water	1994	2,4-Dinitrophenol	50	µg/L	5	—	—	—	
2377	SS64	Water	1994	2,4-Dinitrotoluene	50	µg/L	10	—	—	—	
2378	SS64	Water	1994	2,6-Dinitrotoluene	10	µg/L	5	—	—	—	
2379	SS64	Water	1994	2-Chloroethylvinyl ether	2	µg/L	4	—	—	—	
2380	SS64	Water	1994	2-Chloronaphthalene	10	µg/L	5	—	—	—	
2381	SS64	Water	1994	2-Chlorophenol	10	µg/L	5	—	—	—	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2382	SS64	Water	1994	2-Methylnaphthalene	10	µg/L	5	–	–	–	
2383	SS64	Water	1994	2-Methylphenol	10	µg/L	5	–	–	–	
2384	SS64	Water	1994	2-Nitroaniline	50	µg/L	5	–	–	–	
2385	SS64	Water	1994	2-Nitrophenol	10	µg/L	5	–	–	–	
2386	SS64	Water	1994	3,3'-Dichlorobenzidine	20	µg/L	5	–	–	–	
2387	SS64	Water	1994	3-Nitroaniline	50	µg/L	5	–	–	–	
2388	SS64	Water	1994	4,4'-DDD	0.1	µg/L	4	–	–	–	
2389	SS64	Water	1994	4,4'-DDE	0.1	µg/L	4	–	–	–	
2390	SS64	Water	1994	4,4'-DDT	0.1	µg/L	4	–	–	–	
2391	SS64	Water	1994	4-Bromophenyl-phenylether	10	µg/L	5	–	–	–	
2392	SS64	Water	1994	4-Chloro-3-methylphenol	20	µg/L	5	–	–	–	
2393	SS64	Water	1994	4-Chloroaniline	20	µg/L	5	–	–	–	
2394	SS64	Water	1994	4-Chlorophenyl-phenylether	10	µg/L	5	–	–	–	
2395	SS64	Water	1994	4-Methylphenol	10	µg/L	5	–	–	–	
2396	SS64	Water	1994	4-Nitroaniline	20	µg/L	5	–	–	–	
2397	SS64	Water	1994	4-Nitrophenol	50	µg/L	5	–	–	–	
2398	SS64	Water	1994	a-BHC	0.05	µg/L	4	–	–	–	
2399	SS64	Water	1994	a-Chlordane	0.05	µg/L	4	–	–	–	
2400	SS64	Water	1994	Acenaphthene	10	µg/L	5	–	–	–	
2401	SS64	Water	1994	Acenaphthylene	10	µg/L	5	–	–	–	
2402	SS64	Water	1994	Aldrin	0.05	µg/L	4	–	–	–	
2403	SS64	Water	1994	Aluminum	N/A	µg/L	4	4	1.08E+03	1.46E+03	64MW01
2404	SS64	Water	1994	Anthracene	10	µg/L	5	–	–	–	
2405	SS64	Water	1994	Antimony	1	µg/L	6	–	–	–	
2406	SS64	Water	1994	Arsenic	N/A	µg/L	8	8	5.8	13.1	64MW01
2407	SS64	Water	1994	b-BHC	0.05	µg/L	4	–	–	–	
2408	SS64	Water	1994	Barium	N/A	µg/L	8	8	165	230	64MW01
2409	SS64	Water	1994	Benzene	1	µg/L	4	–	–	–	
2410	SS64	Water	1994	Benzo(a)anthracene	10	µg/L	5	–	–	–	
2411	SS64	Water	1994	Benzo(a)pyrene	10	µg/L	5	–	–	–	
2412	SS64	Water	1994	Benzo(b)fluoranthene	10	µg/L	5	–	–	–	
2413	SS64	Water	1994	Benzo(g,h,i)perylene	10	µg/L	5	–	–	–	
2414	SS64	Water	1994	Benzo(k)fluoranthene	10	µg/L	5	–	–	–	
2415	SS64	Water	1994	Benzoic acid	50	µg/L	5	–	–	–	
2416	SS64	Water	1994	Benzyl alcohol	20	µg/L	5	–	–	–	
2417	SS64	Water	1994	Beryllium	1	µg/L	8	–	–	–	
2418	SS64	Water	1994	Bis(2-chloroethoxy)methane	10	µg/L	5	–	–	–	
2419	SS64	Water	1994	Bis(2-chloroethyl)ether	10	µg/L	5	–	–	–	
2420	SS64	Water	1994	Bis(2-chloroisopropyl)ether	10	µg/L	5	–	–	–	
2421	SS64	Water	1994	Bis(2-ethylhexyl)phthalate	10	µg/L	5	1	1.9	1.9	64MW01
2422	SS64	Water	1994	Bromodichloromethane	1	µg/L	4	–	–	–	
2423	SS64	Water	1994	Bromoform	1	µg/L	4	–	–	–	
2424	SS64	Water	1994	Bromomethane	2	µg/L	4	–	–	–	
2425	SS64	Water	1994	Butylbenzylphthalate	10	µg/L	5	–	–	–	
2426	SS64	Water	1994	Cadmium	1	µg/L	8	–	–	–	
2427	SS64	Water	1994	Calcium	N/A	µg/L	8	8	5.30E+04	5.66E+04	64MW03DF
2428	SS64	Water	1994	Carbazole	10	µg/L	5	–	–	–	
2429	SS64	Water	1994	Carbon tetrachloride	0.5	µg/L	4	–	–	–	
2430	SS64	Water	1994	Chlorobenzene	1	µg/L	8	–	–	–	
2431	SS64	Water	1994	Chloroethane	1	µg/L	4	–	–	–	
2432	SS64	Water	1994	Chloroform	1	µg/L	4	–	–	–	
2433	SS64	Water	1994	Chloromethane	1	µg/L	4	–	–	–	
2434	SS64	Water	1994	Chromium	1	µg/L	4	–	–	–	
2435	SS64	Water	1994	Chrysene	10	µg/L	5	–	–	–	
2436	SS64	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
2437	SS64	Water	1994	Cobalt	N/A	µg/L	2	2	5	7.5	64MW02
2438	SS64	Water	1994	Copper	1	µg/L	8	4	16.1	36.1	64MW01
2439	SS64	Water	1994	d-BHC	0.05	µg/L	4	–	–	–	
2440	SS64	Water	1994	Di-n-butylphthalate	N/A	µg/L	5	5	2.7	3.6	64MW03
2441	SS64	Water	1994	Di-n-octylphthalate	10	µg/L	5	–	–	–	
2442	SS64	Water	1994	Dibenz(a,h)anthracene	10	µg/L	5	–	–	–	
2443	SS64	Water	1994	Dibenzofuran	10	µg/L	5	–	–	–	
2444	SS64	Water	1994	Dibromochloromethane	1	µg/L	4	–	–	–	
2445	SS64	Water	1994	Dichlorodifluoromethane	1	µg/L	4	–	–	–	
2446	SS64	Water	1994	Dieldrin	0.1	µg/L	4	–	–	–	
2447	SS64	Water	1994	Diethylphthalate	10	µg/L	5	–	–	–	
2448	SS64	Water	1994	Dimethylphthalate	10	µg/L	5	–	–	–	
2449	SS64	Water	1994	Endosulfan I	0.05	µg/L	4	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2450	SS64	Water	1994	Endosulfan II	0.1	µg/L	4	–	–	–	
2451	SS64	Water	1994	Endosulfan sulfate	0.1	µg/L	4	–	–	–	
2452	SS64	Water	1994	Endrin	0.1	µg/L	4	–	–	–	
2453	SS64	Water	1994	Endrin aldehyde	0.1	µg/L	4	–	–	–	
2454	SS64	Water	1994	Ethylbenzene	1	µg/L	4	–	–	–	
2455	SS64	Water	1994	Fluoranthene	10	µg/L	5	–	–	–	
2456	SS64	Water	1994	Fluorene	10	µg/L	5	–	–	–	
2457	SS64	Water	1994	g-BHC	0.05	µg/L	4	–	–	–	
2458	SS64	Water	1994	g-Chlordane	0.05	µg/L	4	–	–	–	
2459	SS64	Water	1994	Heptachlor	0.05	µg/L	4	–	–	–	
2460	SS64	Water	1994	Heptachlor epoxide	0.05	µg/L	4	–	–	–	
2461	SS64	Water	1994	Hexachlorobenzene	10	µg/L	5	–	–	–	
2462	SS64	Water	1994	Hexachlorobutadiene	10	µg/L	5	–	–	–	
2463	SS64	Water	1994	Hexachlorocyclopentadiene	10	µg/L	5	–	–	–	
2464	SS64	Water	1994	Hexachloroethane	10	µg/L	5	–	–	–	
2465	SS64	Water	1994	Indeno(1,2,3-cd)pyrene	10	µg/L	5	–	–	–	
2466	SS64	Water	1994	Iron	N/A	µg/L	8	8	1.33E+03	7.77E+03	64MW01
2467	SS64	Water	1994	Isophorone	10	µg/L	5	–	–	–	
2468	SS64	Water	1994	Lead	1	µg/L	7	5	5.7	12.8	64MW01
2469	SS64	Water	1994	M,p-xylene	1	µg/L	4	–	–	–	
2470	SS64	Water	1994	Magnesium	N/A	µg/L	8	8	1.21E+04	1.33E+04	64MW03
2471	SS64	Water	1994	Manganese	N/A	µg/L	8	8	1.51E+03	5.77E+03	64MW02
2472	SS64	Water	1994	Methoxychlor	0.5	µg/L	4	–	–	–	
2473	SS64	Water	1994	Methylene chloride	1	µg/L	4	–	–	–	
2474	SS64	Water	1994	n-Nitroso-di-n-propylamine	10	µg/L	5	–	–	–	
2475	SS64	Water	1994	n-Nitrosodiphenylamine	10	µg/L	5	–	–	–	
2476	SS64	Water	1994	Naphthalene	10	µg/L	5	–	–	–	
2477	SS64	Water	1994	Nickel	N/A	µg/L	4	4	6.9	11.8	64MW02
2478	SS64	Water	1994	Nitrobenzene	10	µg/L	5	–	–	–	
2479	SS64	Water	1994	o-Xylene	1	µg/L	4	–	–	–	
2480	SS64	Water	1994	PCB-1016	1	µg/L	4	–	–	–	
2481	SS64	Water	1994	PCB-1221	2	µg/L	4	–	–	–	
2482	SS64	Water	1994	PCB-1232	1	µg/L	4	–	–	–	
2483	SS64	Water	1994	PCB-1242	1	µg/L	4	–	–	–	
2484	SS64	Water	1994	PCB-1248	1	µg/L	4	–	–	–	
2485	SS64	Water	1994	PCB-1254	1	µg/L	4	–	–	–	
2486	SS64	Water	1994	PCB-1260	1	µg/L	4	–	–	–	
2487	SS64	Water	1994	Pentachlorophenol	50	µg/L	5	–	–	–	
2488	SS64	Water	1994	Phenanthrene	10	µg/L	5	–	–	–	
2489	SS64	Water	1994	Phenol	10	µg/L	5	–	–	–	
2490	SS64	Water	1994	Pyrene	10	µg/L	5	–	–	–	
2491	SS64	Water	1994	Silver	1	µg/L	8	–	–	–	
2492	SS64	Water	1994	Sodium	N/A	µg/L	8	8	5.03E+03	5.78E+03	64MW03
2493	SS64	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	4	2	0.82	1.7	64MW01
2494	SS64	Water	1994	Tin	1	µg/L	4	–	–	–	
2495	SS64	Water	1994	Toluene	1	µg/L	4	–	–	–	
2496	SS64	Water	1994	Toxaphene	5	µg/L	4	–	–	–	
2497	SS64	Water	1994	Trans-1,2-dichloroethene	1	µg/L	4	1	1.6	1.6	64MW01
2498	SS64	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
2499	SS64	Water	1994	Trichloroethene (TCE)	0.5	µg/L	4	2	0.6	2.7	64MW01
2500	SS64	Water	1994	Trichlorofluoromethane	1	µg/L	4	–	–	–	
2501	SS64	Water	1994	Vanadium	1	µg/L	6	3	7.6	7.8	64MW03D
2502	SS64	Water	1994	Vinyl chloride	0.5	µg/L	4	–	–	–	
2503	SS64	Water	1994	Zinc	N/A	µg/L	3	3	20.9	23.4	64MW03
2504	ST27	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	13	–	–	–	
2505	ST27	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	13	–	–	–	
2506	ST27	Water	1992	1,1-Dichloroethane	1	µg/L	13	–	–	–	
2507	ST27	Water	1992	1,2-Dichloroethane	0.5	µg/L	13	–	–	–	
2508	ST27	Water	1992	1,4-Dichlorobenzene	2	µg/L	13	–	–	–	
2509	ST27	Water	1992	Antimony	200	µg/L	13	–	–	–	
2510	ST27	Water	1992	Arsenic	N/A	µg/L	9	9	5.5	30	27B-11
2511	ST27	Water	1992	Barium	N/A	µg/L	13	13	77	590	27B-13
2512	ST27	Water	1992	Benzene	2	µg/L	13	–	–	–	
2513	ST27	Water	1992	Beryllium	3	µg/L	13	–	–	–	
2514	ST27	Water	1992	Bromide	500	µg/L	4	–	–	–	
2515	ST27	Water	1992	Cadmium	10	µg/L	13	–	–	–	
2516	ST27	Water	1992	Calcium	N/A	µg/L	13	13	3.50E+04	5.80E+04	27B-13
2517	ST27	Water	1992	Carbon tetrachloride	1	µg/L	13	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2518	ST27	Water	1992	Chloride	N/A	µg/L	4	4	1.10E+03	1.40E+03	27B-8
2519	ST27	Water	1992	Chloroform	0.5	µg/L	13	–	–	–	
2520	ST27	Water	1992	Chromium	20	µg/L	13	1	21	21	27B-13
2521	ST27	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	13	–	–	–	
2522	ST27	Water	1992	Cobalt	20	µg/L	13	1	32	32	27B-13
2523	ST27	Water	1992	Copper	20	µg/L	13	6	48	430	27B-13
2524	ST27	Water	1992	Ethylbenzene	2	µg/L	13	–	–	–	
2525	ST27	Water	1992	Fluoride	N/A	µg/L	4	4	100	200	27-1
2526	ST27	Water	1992	h-Chlorofluorobenzene	N/A	µg/L	7	7	8.3	11	27B-8
2527	ST27	Water	1992	Iron	N/A	µg/L	13	13	33	2.30E+04	27B-13
2528	ST27	Water	1992	Lead	5	µg/L	15	9	5.4	120	27B-13
2529	ST27	Water	1992	Magnesium	N/A	µg/L	13	13	7.70E+03	1.50E+04	27B-13
2530	ST27	Water	1992	Manganese	N/A	µg/L	13	13	940	1.20E+04	27B-8
2531	ST27	Water	1992	Methylenechloride	5	µg/L	13	–	–	–	
2532	ST27	Water	1992	Nickel	30	µg/L	13	2	32	82	27B-13
2533	ST27	Water	1992	Nitrate	N/A	µg/L	4	4	200	1.10E+03	27B-11
2534	ST27	Water	1992	Nitrite	200	µg/L	4	–	–	–	
2535	ST27	Water	1992	p-Chlorofluorobenzene	N/A	µg/L	7	7	9.2	10	27B-10
2536	ST27	Water	1992	Phosphate	400	µg/L	4	–	–	–	
2537	ST27	Water	1992	Potassium	N/A	µg/L	13	13	2.40E+03	3.90E+03	27B-13
2538	ST27	Water	1992	Silver	20	µg/L	13	–	–	–	
2539	ST27	Water	1992	Sodium	N/A	µg/L	13	13	3.20E+03	5.60E+03	27B-8
2540	ST27	Water	1992	Sulfate	N/A	µg/L	4	4	9.00E+03	1.50E+04	27B-8
2541	ST27	Water	1992	Tetrachloroethene	0.5	µg/L	13	–	–	–	
2542	ST27	Water	1992	Tin	100	µg/L	13	–	–	–	
2543	ST27	Water	1992	Toluene	2	µg/L	13	–	–	–	
2544	ST27	Water	1992	Total organic carb	N/A	µg/L	2	2	4.00E+03	5.00E+03	27-1
2545	ST27	Water	1992	Trans-DCE	1	µg/L	13	–	–	–	
2546	ST27	Water	1992	Trichloroethene	1	µg/L	13	–	–	–	
2547	ST27	Water	1992	Vanadium	30	µg/L	13	1	91	91	27B-13
2548	ST27	Water	1992	Vinyl chloride	2	µg/L	13	–	–	–	
2549	ST27	Water	1992	Xylenes (total)	5	µg/L	13	–	–	–	
2550	ST27	Water	1992	Zinc	10	µg/L	13	10	12	400	27B-13
2551	ST27	Surface Soil	1988	Benzene	N/A	µg/kg	1	1	6	6	27B-18
2552	ST27	Surface Soil	1988	Ethylbenzene	23	µg/kg	1	–	–	–	
2553	ST27	Surface Soil	1986	Lead	N/A	µg/kg	18	18	4.00E+03	7.00E+03	27-2
2554	ST27	Surface Soil	1988	Lead	N/A	µg/kg	3	3	3.80E+03	3.76E+04	27B-14
2555	ST27	Surface Soil	1988	Toluene	N/A	µg/kg	1	1	17	17	27B-18
2556	ST27	Surface Soil	1988	Xylenes (total)	23	µg/kg	1	–	–	–	
2557	ST27	Soil	1986	Lead	N/A	µg/kg	4	4	7.00E+03	8.00E+03	27-2
2558	ST56	Water	1994	1,1,1-Trichloroethane	1	µg/L	3	–	–	–	
2559	ST56	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	3	–	–	–	
2560	ST56	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	3	–	–	–	
2561	ST56	Water	1994	1,1-Dichloroethane	1	µg/L	3	–	–	–	
2562	ST56	Water	1994	1,1-Dichloroethene	0.5	µg/L	3	–	–	–	
2563	ST56	Water	1994	1,2-Dichlorobenzene	1	µg/L	6	–	–	–	
2564	ST56	Water	1994	1,2-Dichloroethane	0.5	µg/L	3	–	–	–	
2565	ST56	Water	1994	1,2-Dichloropropane	0.5	µg/L	3	–	–	–	
2566	ST56	Water	1994	1,3-Dichlorobenzene	1	µg/L	6	–	–	–	
2567	ST56	Water	1994	1,4-Dichlorobenzene	1	µg/L	6	–	–	–	
2568	ST56	Water	1994	2-Chloroethylvinyl ether	2	µg/L	3	–	–	–	
2569	ST56	Water	1994	Aluminum	N/A	µg/L	4	4	385	1.47E+03	56MW05
2570	ST56	Water	1994	Antimony	1	µg/L	4	–	–	–	
2571	ST56	Water	1994	Arsenic	N/A	µg/L	6	6	5	14.7	56MW05
2572	ST56	Water	1994	Barium	N/A	µg/L	6	6	250	413	56MW04F
2573	ST56	Water	1994	Benzene	1	µg/L	3	–	–	–	
2574	ST56	Water	1994	Beryllium	1	µg/L	6	–	–	–	
2575	ST56	Water	1994	Bromodichloromethane	1	µg/L	3	–	–	–	
2576	ST56	Water	1994	Bromoform	1	µg/L	3	–	–	–	
2577	ST56	Water	1994	Bromomethane	2	µg/L	3	–	–	–	
2578	ST56	Water	1994	Cadmium	1	µg/L	6	–	–	–	
2579	ST56	Water	1994	Calcium	N/A	µg/L	6	6	9.70E+04	1.17E+05	56MW05D
2580	ST56	Water	1994	Carbon tetrachloride	0.5	µg/L	3	–	–	–	
2581	ST56	Water	1994	Chlorobenzene	1	µg/L	6	–	–	–	
2582	ST56	Water	1994	Chloroethane	1	µg/L	3	–	–	–	
2583	ST56	Water	1994	Chloroform	1	µg/L	3	–	–	–	
2584	ST56	Water	1994	Chloromethane	1	µg/L	3	–	–	–	
2585	ST56	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	3	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2586	ST56	Water	1994	Cobalt	N/A	µg/L	5	5	5.3	13.7	56MW04
2587	ST56	Water	1994	Copper	N/A	µg/L	3	3	13.4	27	56MW05
2588	ST56	Water	1994	Dibromochloromethane	1	µg/L	3	–	–	–	
2589	ST56	Water	1994	Dichlorodifluoromethane	1	µg/L	3	–	–	–	
2590	ST56	Water	1994	Ethylbenzene	1	µg/L	3	–	–	–	
2591	ST56	Water	1994	Iron	N/A	µg/L	6	6	709	8.89E+03	56MW05
2592	ST56	Water	1994	Lead	1	µg/L	4	3	3.7	10.5	56MW05
2593	ST56	Water	1994	M,p-xylene	1	µg/L	3	–	–	–	
2594	ST56	Water	1994	Magnesium	N/A	µg/L	6	6	2.74E+04	3.27E+04	56MW05D
2595	ST56	Water	1994	Manganese	N/A	µg/L	6	6	709	2.29E+03	56MW04
2596	ST56	Water	1994	Methylene chloride	1	µg/L	3	–	–	–	
2597	ST56	Water	1994	Nickel	N/A	µg/L	6	6	8.2	20.4	56MW05
2598	ST56	Water	1994	o-Xylene	1	µg/L	3	–	–	–	
2599	ST56	Water	1994	Potassium	N/A	µg/L	6	6	6.72E+03	1.03E+04	56MW04
2600	ST56	Water	1994	Silver	1	µg/L	6	–	–	–	
2601	ST56	Water	1994	Sodium	N/A	µg/L	6	6	1.37E+04	2.39E+04	56MW05D
2602	ST56	Water	1994	Tetrachloroethene	0.5	µg/L	5	2	13.8	25.1	56WHD
2603	ST56	Water	1994	Toluene	1	µg/L	3	–	–	–	
2604	ST56	Water	1994	Trans-1,2-dichloroethene	1	µg/L	3	–	–	–	
2605	ST56	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	3	–	–	–	
2606	ST56	Water	1994	Trichloroethene	0.5	µg/L	5	2	0.4	0.6	56WHD
2607	ST56	Water	1994	Trichlorofluoromethane	1	µg/L	3	–	–	–	
2608	ST56	Water	1994	Vanadium	N/A	µg/L	5	5	5.6	19	56MW05
2609	ST56	Water	1994	Vinyl chloride	0.5	µg/L	3	–	–	–	
2610	ST56	Water	1994	Zinc	N/A	µg/L	4	4	24.2	46.2	56MW05
2611	ST58	Water	1993	1,1,1-Trichloroethane	5	µg/L	14	–	–	–	
2612	ST58	Water	1993	1,1,2-Trichloroethane	5	µg/L	14	–	–	–	
2613	ST58	Water	1993	1,1-Dichloroethane	5	µg/L	14	–	–	–	
2614	ST58	Water	1993	1,2-Dichloroethane	5	µg/L	14	–	–	–	
2615	ST58	Water	1993	1,2-Dichloroethene	1.2	µg/L	14	–	–	–	
2616	ST58	Water	1993	1,4-Dichlobenzene	5	µg/L	14	–	–	–	
2617	ST58	Water	1993	2-Butanone	100	µg/L	14	–	–	–	
2618	ST58	Water	1993	4-Methyl-2-pentanone	50	µg/L	15	2	76	77	58MW08
2619	ST58	Water	1993	Acetone	100	µg/L	7	–	–	–	
2620	ST58	Water	1993	Benzene	5	µg/L	13	6	3.7	180	58MW08
2621	ST58	Water	1993	Carbon tetrachloride	5	µg/L	14	–	–	–	
2622	ST58	Water	1993	Chloroform	5	µg/L	14	–	–	–	
2623	ST58	Water	1993	Diesel	100	µg/L	14	11	100	9.90E+04	58MW09
2624	ST58	Water	1993	Gasoline	2.00E+03	µg/L	14	1	2.60E+05	2.60E+05	58MW09
2625	ST58	Water	1993	Lead	5	µg/L	14	13	35	180	58MW12
2626	ST58	Water	1993	Methylene chloride	N/A	µg/L	14	14	1.8	9	58MW10
2627	ST58	Water	1993	Tetrachloroethene	5	µg/L	14	–	–	–	
2628	ST58	Water	1993	Tetrahydrofuran	10	µg/L	14	–	–	–	
2629	ST58	Water	1993	Toluene	5	µg/L	14	2	2.8	140	58MW10
2630	ST58	Water	1993	Trichloroethene	5	µg/L	14	–	–	–	
2631	ST58	Water	1993	Vinyl chloride	10	µg/L	14	–	–	–	
2632	ST58	Water	1993	Xylenes (total)	5	µg/L	14	4	28	830	58MW10
2633	WP33	Water	1994	(Technical) chlordane	1	µg/L	4	–	–	–	
2634	WP33	Water	1994	1,1,1-Trichloroethane	1	µg/L	4	–	–	–	
2635	WP33	Water	1994	1,1,2,2-Tetrachloroethane	1	µg/L	4	–	–	–	
2636	WP33	Water	1994	1,1,2-Trichloroethane	0.5	µg/L	4	–	–	–	
2637	WP33	Water	1994	1,1-Dichloroethane	1	µg/L	4	–	–	–	
2638	WP33	Water	1994	1,1-Dichloroethene	0.5	µg/L	4	–	–	–	
2639	WP33	Water	1994	1,2-Dichlorobenzene	1	µg/L	8	–	–	–	
2640	WP33	Water	1994	1,2-Dichloroethane	0.5	µg/L	4	–	–	–	
2641	WP33	Water	1994	1,2-Dichloropropane	0.5	µg/L	4	–	–	–	
2642	WP33	Water	1994	1,3-Dichlorobenzene	1	µg/L	8	–	–	–	
2643	WP33	Water	1994	1,4-Dichlorobenzene	1	µg/L	8	–	–	–	
2644	WP33	Water	1994	2-Chloroethylvinyl ether	2	µg/L	4	–	–	–	
2645	WP33	Water	1994	4,4'-DDD	0.1	µg/L	4	–	–	–	
2646	WP33	Water	1994	4,4'-DDE	0.1	µg/L	4	–	–	–	
2647	WP33	Water	1994	4,4'-DDT	0.1	µg/L	4	–	–	–	
2648	WP33	Water	1994	a-BHC	0.05	µg/L	4	–	–	–	
2649	WP33	Water	1994	a-Chlordane	0.05	µg/L	4	–	–	–	
2650	WP33	Water	1994	Aldrin	0.05	µg/L	4	–	–	–	
2651	WP33	Water	1994	Aluminum	N/A	µg/L	4	4	233	969	33M01
2652	WP33	Water	1994	Antimony	1	µg/L	4	–	–	–	
2653	WP33	Water	1994	Arsenic	N/A	µg/L	8	8	6.5	62.1	33M0D

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2654	WP33	Water	1994	b-BHC	0.05	µg/L	4	–	–	–	
2655	WP33	Water	1994	Barium	N/A	µg/L	8	8	107	784	33M0D
2656	WP33	Water	1994	Benzene	1	µg/L	4	–	–	–	
2657	WP33	Water	1994	Beryllium	2	µg/L	8	–	–	–	
2658	WP33	Water	1994	Bromodichloromethane	1	µg/L	4	–	–	–	
2659	WP33	Water	1994	Bromoform	1	µg/L	4	–	–	–	
2660	WP33	Water	1994	Bromomethane	2	µg/L	4	–	–	–	
2661	WP33	Water	1994	Cadmium	1	µg/L	8	–	–	–	
2662	WP33	Water	1994	Calcium	N/A	µg/L	8	8	3.93E+04	9.44E+04	33M0C
2663	WP33	Water	1994	Carbon tetrachloride	0.5	µg/L	4	–	–	–	
2664	WP33	Water	1994	Chlorobenzene	1	µg/L	8	–	–	–	
2665	WP33	Water	1994	Chloroethane	1	µg/L	4	–	–	–	
2666	WP33	Water	1994	Chloroform	1	µg/L	4	–	–	–	
2667	WP33	Water	1994	Chloromethane	1	µg/L	4	–	–	–	
2668	WP33	Water	1994	Cis-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
2669	WP33	Water	1994	Copper	1	µg/L	6	3	11.6	15	33M02
2670	WP33	Water	1994	d-BHC	0.05	µg/L	4	–	–	–	
2671	WP33	Water	1994	Dibromochloromethane	1	µg/L	4	–	–	–	
2672	WP33	Water	1994	Dichlorodifluoromethane	1	µg/L	4	–	–	–	
2673	WP33	Water	1994	Dieldrin	0.1	µg/L	4	–	–	–	
2674	WP33	Water	1994	Endosulfan I	0.05	µg/L	4	–	–	–	
2675	WP33	Water	1994	Endosulfan II	0.1	µg/L	4	–	–	–	
2676	WP33	Water	1994	Endosulfan sulfate	0.1	µg/L	4	–	–	–	
2677	WP33	Water	1994	Endrin	0.1	µg/L	4	–	–	–	
2678	WP33	Water	1994	Endrin aldehyde	0.1	µg/L	4	–	–	–	
2679	WP33	Water	1994	Ethylbenzene	1	µg/L	4	–	–	–	
2680	WP33	Water	1994	g-BHC	0.05	µg/L	4	–	–	–	
2681	WP33	Water	1994	g-Chlordane	0.05	µg/L	4	–	–	–	
2682	WP33	Water	1994	Heptachlor	0.05	µg/L	4	–	–	–	
2683	WP33	Water	1994	Heptachlor epoxide	0.05	µg/L	4	–	–	–	
2684	WP33	Water	1994	Iron	N/A	µg/L	8	8	298	1.51E+04	33M0D
2685	WP33	Water	1994	Lead	1	µg/L	6	4	2	4.1	33M0CF
2686	WP33	Water	1994	M,p-xylene	1	µg/L	4	–	–	–	
2687	WP33	Water	1994	Magnesium	N/A	µg/L	8	8	8.31E+03	1.60E+04	33M0C
2688	WP33	Water	1994	Manganese	N/A	µg/L	8	8	2.53E+03	9.12E+03	33M0CF
2689	WP33	Water	1994	Methoxychlor	0.5	µg/L	4	–	–	–	
2690	WP33	Water	1994	Methylene chloride	1	µg/L	4	–	–	–	
2691	WP33	Water	1994	Nickel	N/A	µg/L	1	1	20.9	20.9	33M0C
2692	WP33	Water	1994	o-Xylene	1	µg/L	4	–	–	–	
2693	WP33	Water	1994	PCB-1016	1	µg/L	4	–	–	–	
2694	WP33	Water	1994	PCB-1221	2	µg/L	4	–	–	–	
2695	WP33	Water	1994	PCB-1232	1	µg/L	4	–	–	–	
2696	WP33	Water	1994	PCB-1242	1	µg/L	4	–	–	–	
2697	WP33	Water	1994	PCB-1248	1	µg/L	4	–	–	–	
2698	WP33	Water	1994	PCB-1254	1	µg/L	4	–	–	–	
2699	WP33	Water	1994	PCB-1260	1	µg/L	4	–	–	–	
2700	WP33	Water	1994	Potassium	N/A	µg/L	8	8	7.38E+03	1.40E+04	33M0C
2701	WP33	Water	1994	Silver	1	µg/L	8	–	–	–	
2702	WP33	Water	1994	Sodium	N/A	µg/L	8	8	2.79E+04	3.69E+04	33M01
2703	WP33	Water	1994	Tetrachloroethene (PCE)	0.5	µg/L	4	–	–	–	
2704	WP33	Water	1994	Tin	1	µg/L	4	–	–	–	
2705	WP33	Water	1994	Toluene	1	µg/L	4	–	–	–	
2706	WP33	Water	1994	Toxaphene	5	µg/L	4	–	–	–	
2707	WP33	Water	1994	Trans-1,2-dichloroethene	1	µg/L	4	–	–	–	
2708	WP33	Water	1994	Trans-1,3-dichloropropene	0.5	µg/L	4	–	–	–	
2709	WP33	Water	1994	Trichloroethene (TCE)	0.5	µg/L	4	–	–	–	
2710	WP33	Water	1994	Trichlorofluoromethane	1	µg/L	4	–	–	–	
2711	WP33	Water	1994	Vinyl chloride	0.5	µg/L	4	–	–	–	
2712	WP33	Water	1994	Zinc	N/A	µg/L	4	4	23.2	48.2	33M0D
2713	WP45	Water	1992	1,1,1-Trichloroethane	0.5	µg/L	12	1	0.5	0.5	45M01
2714	WP45	Water	1992	1,1,2-Trichloroethane	0.5	µg/L	12	–	–	–	
2715	WP45	Water	1992	1,1-Dichloroethane	1	µg/L	12	–	–	–	
2716	WP45	Water	1992	1,2-Dichloroethane	0.5	µg/L	12	1	0.6	0.6	45M02
2717	WP45	Water	1988	1,4-Dichlorobenzene	N/A	µg/L	1	1	0.0022	0.0022	45WellC
2718	WP45	Water	1992	1,4-Dichlorobenzene	2	µg/L	13	–	–	–	
2719	WP45	Water	1992	Antimony	200	µg/L	2	–	–	–	
2720	WP45	Water	1992	Barium	N/A	µg/L	2	2	39	140	45M06
2721	WP45	Water	1992	Benzene	2	µg/L	12	–	–	–	

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2722	WP45	Water	1992	Beryllium	3	µg/L	2	–	–	–	
2723	WP45	Water	1992	Bromide	500	µg/L	2	–	–	–	
2724	WP45	Water	1992	Cadmium	10	µg/L	2	–	–	–	
2725	WP45	Water	1992	Calcium	N/A	µg/L	2	2	4.00E+04	5.30E+04	45M06
2726	WP45	Water	1992	Carbon tetrachloride	1	µg/L	12	–	–	–	
2727	WP45	Water	1992	Chloride	N/A	µg/L	2	2	2.90E+03	6.20E+03	45M06
2728	WP45	Water	1992	Chloroform	0.5	µg/L	12	–	–	–	
2729	WP45	Water	1992	Chromium	20	µg/L	2	–	–	–	
2730	WP45	Water	1992	Cis-1,2-dichloroethylene	1	µg/L	12	8	1.4	47	45M01
2731	WP45	Water	1992	Cobalt	20	µg/L	2	–	–	–	
2732	WP45	Water	1992	Copper	20	µg/L	2	–	–	–	
2733	WP45	Water	1992	Ethylbenzene	2	µg/L	12	–	–	–	
2734	WP45	Water	1993	Ethylbenzene	N/A	µg/L	1	1	0.00385	0.00385	45WellC
2735	WP45	Water	1992	Fluoride	N/A	µg/L	2	2	100	200	45M02
2736	WP45	Water	1992	h-Chlorofluorobenzene	N/A	µg/L	6	6	8	11	45M04
2737	WP45	Water	1992	Iron	20	µg/L	2	1	420	420	45M06
2738	WP45	Water	1992	Lead	5	µg/L	2	–	–	–	
2739	WP45	Water	1992	Magnesium	N/A	µg/L	2	2	6.60E+03	1.10E+04	45M06
2740	WP45	Water	1992	Manganese	10	µg/L	2	1	2.40E+03	2.40E+03	45M06
2741	WP45	Water	1992	Methylenechloride	5	µg/L	12	–	–	–	
2742	WP45	Water	1992	Nickel	30	µg/L	2	–	–	–	
2743	WP45	Water	1992	Nitrate	N/A	µg/L	2	2	1.50E+03	6.60E+03	45M02
2744	WP45	Water	1992	Nitrite	200	µg/L	2	–	–	–	
2745	WP45	Water	1992	p-Chlorofluorobenzene	N/A	µg/L	6	6	6.5	10	45M04
2746	WP45	Water	1992	Phosphate	400	µg/L	2	–	–	–	
2747	WP45	Water	1992	Potassium	N/A	µg/L	2	2	2.90E+03	3.00E+03	45M06
2748	WP45	Water	1992	Silver	20	µg/L	2	–	–	–	
2749	WP45	Water	1992	Sodium	N/A	µg/L	2	2	4.20E+03	4.80E+03	45M02
2750	WP45	Water	1992	Sulfate	N/A	µg/L	2	2	8.30E+03	1.40E+04	45M06
2751	WP45	Water	1992	Tetrachloroethene	0.5	µg/L	12	–	–	–	
2752	WP45	Water	1992	Tin	100	µg/L	2	–	–	–	
2753	WP45	Water	1992	Toluene	2	µg/L	12	–	–	–	
2754	WP45	Water	1992	Trans-DCE	1	µg/L	12	7	1.2	39	45M01
2755	WP45	Water	1992	Trichloroethene	1	µg/L	12	8	1.3	370	45M01
2756	WP45	Water	1992	Vanadium	30	µg/L	2	1	190	190	45M02
2757	WP45	Water	1992	Vinyl chloride	2	µg/L	12	–	–	–	
2758	WP45	Water	1992	Xylenes (total)	5	µg/L	12	–	–	–	
2759	WP45	Water	1992	Zinc	10	µg/L	2	–	–	–	
2760	WP45	Surface Soil	1992	1,1,1-Trichloroethane	0.5	µg/kg	3	–	–	–	
2761	WP45	Surface Soil	1992	1,1,2-Trichloroethane	0.5	µg/kg	3	–	–	–	
2762	WP45	Surface Soil	1992	1,1-Dichloroethane	1	µg/kg	3	–	–	–	
2763	WP45	Surface Soil	1992	1,2-Dichloroethane	0.5	µg/kg	3	–	–	–	
2764	WP45	Surface Soil	1992	1,4-Dichlorobenzene	2	µg/kg	3	–	–	–	
2765	WP45	Surface Soil	1989	Acenaphthene, soil	760	µg/kg	17	2	89	452	45SS09
2766	WP45	Surface Soil	1988	Aluminum	N/A	µg/kg	4	4	6.48E+06	8.83E+06	45M03
2767	WP45	Surface Soil	1989	Anthracene, soil	1	µg/kg	17	4	86	921	45SS05
2768	WP45	Surface Soil	1988	Antimony	4.50E+03	µg/kg	4	2	5.90E+03	8.90E+03	45M03
2769	WP45	Surface Soil	1988	Barium	N/A	µg/kg	4	4	8.24E+04	1.50E+05	45M03
2770	WP45	Surface Soil	1992	Benzene	2	µg/kg	3	–	–	–	
2771	WP45	Surface Soil	1988	Benzo(a)anthracene	10	µg/kg	4	1	210	210	45M03
2772	WP45	Surface Soil	1989	Benzo(a)anthracene	N/A	µg/kg	17	17	0.2	536	45SS05
2773	WP45	Surface Soil	1988	Benzo(a)pyrene	9	µg/kg	4	2	470	500	45M02
2774	WP45	Surface Soil	1989	Benzo(a)pyrene	0.1	µg/kg	17	15	0.2	399	45SS05
2775	WP45	Surface Soil	1988	Benzo(b)fluoranthene	30	µg/kg	4	2	290	360	45M03
2776	WP45	Surface Soil	1989	Benzo(b)fluoranthene, soil	0.1	µg/kg	17	15	0.3	484	45SS05
2777	WP45	Surface Soil	1988	Benzo(g,h,i)perylene	40	µg/kg	4	2	510	530	45M02
2778	WP45	Surface Soil	1989	Benzo(g,h,i)perylene	0.4	µg/kg	17	13	0.5	400	45SS03
2779	WP45	Surface Soil	1989	Benzo(k)fluoranthene	0.4	µg/kg	17	15	0.2	268	45SS05
2780	WP45	Surface Soil	1988	Bis(2-ethylhexyl)phthalate	100	µg/kg	4	1	650	650	45M03
2781	WP45	Surface Soil	1988	Cadmium	455	µg/kg	4	3	655	2.81E+03	45M02
2782	WP45	Surface Soil	1988	Calcium	N/A	µg/kg	4	4	3.70E+06	7.16E+06	45M03
2783	WP45	Surface Soil	1992	Carbon tetrachloride	1	µg/kg	3	–	–	–	
2784	WP45	Surface Soil	1992	Chloroform	0.5	µg/kg	3	–	–	–	
2785	WP45	Surface Soil	1988	Chromium	N/A	µg/kg	4	4	1.22E+04	1.49E+04	45M03
2786	WP45	Surface Soil	1988	Chrysene	70	µg/kg	4	2	350	380	45M03
2787	WP45	Surface Soil	1989	Chrysene	0.5	µg/kg	17	10	1	627	45SS05
2788	WP45	Surface Soil	1992	Cis-1,2-dichloroethylene	1	µg/kg	3	–	–	–	
2789	WP45	Surface Soil	1988	Cobalt	N/A	µg/kg	4	4	6.74E+03	9.73E+03	45M03

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2790	WP45	Surface Soil	1988	Copper	N/A	µg/kg	4	4	1.53E+04	1.83E+04	45M03
2791	WP45	Surface Soil	1989	Dibenzo(a,h)anthracene	0.1	µg/kg	17	14	0.4	60	45SS05
2792	WP45	Surface Soil	1988	Diethylphthalate	60	µg/kg	4	1	210	210	45M01
2793	WP45	Surface Soil	1992	Ethylbenzene	2	µg/kg	3	–	–	–	
2794	WP45	Surface Soil	1988	Fluoranthene	50	µg/kg	4	2	570	590	45M02
2795	WP45	Surface Soil	1989	Fluoranthene	0.1	µg/kg	17	15	0.07	1.81E+03	45SS05
2796	WP45	Surface Soil	1989	Fluorene	9	µg/kg	17	1	60	60	45SS08
2797	WP45	Surface Soil	1988	Indeno(1,2,3-cd)pyrene	50	µg/kg	4	2	510	530	45M02
2798	WP45	Surface Soil	1989	Indeno(1,2,3-cd)pyrene	0.3	µg/kg	17	13	0.3	253	45SS03
2799	WP45	Surface Soil	1988	Iron	N/A	µg/kg	4	4	1.21E+07	1.45E+07	45M03
2800	WP45	Surface Soil	1988	Lead	N/A	µg/kg	4	4	9.39E+03	1.89E+04	45M02
2801	WP45	Surface Soil	1992	Lead	N/A	µg/kg	2	2	4.60E+03	4.70E+03	45SB07-A
2802	WP45	Surface Soil	1988	Magnesium	N/A	µg/kg	4	4	3.65E+06	5.02E+06	45M03
2803	WP45	Surface Soil	1988	Manganese	N/A	µg/kg	4	4	2.06E+05	4.03E+05	45M02
2804	WP45	Surface Soil	1988	Mercury	19.6	µg/kg	4	1	228	228	45M03
2805	WP45	Surface Soil	1989	Mercury	80.5	µg/kg	17	2	318	3.17E+03	45SS07
2806	WP45	Surface Soil	1992	Methylenechloride	5	µg/kg	3	–	–	–	
2807	WP45	Surface Soil	1988	Nickel	N/A	µg/kg	4	4	1.44E+04	1.85E+04	45M03
2808	WP45	Surface Soil	1988	Phenanthrene	20	µg/kg	4	2	490	520	45M02
2809	WP45	Surface Soil	1989	Phenanthrene	1	µg/kg	17	14	8	1.29E+03	45SS05
2810	WP45	Surface Soil	1988	Potassium	N/A	µg/kg	4	4	5.38E+05	8.07E+05	45M02
2811	WP45	Surface Soil	1988	Pyrene	60	µg/kg	4	1	530	530	45M02
2812	WP45	Surface Soil	1989	Pyrene	4	µg/kg	17	15	4	3.77E+03	45SS05
2813	WP45	Surface Soil	1988	Sodium	N/A	µg/kg	4	4	2.77E+05	3.35E+05	45M02
2814	WP45	Surface Soil	1992	Tetrachloroethene	0.5	µg/kg	3	1	620	620	45SB08-A
2815	WP45	Surface Soil	1992	Toluene	2	µg/kg	3	–	–	–	
2816	WP45	Surface Soil	1992	Trans-DCE	1	µg/kg	3	–	–	–	
2817	WP45	Surface Soil	1992	Trichloroethene	1	µg/kg	3	1	3.30E+03	3.30E+03	45SB08-A
2818	WP45	Surface Soil	1989	Trichlorofluoromethane	300	µg/kg	17	1	320	320	45SS03
2819	WP45	Surface Soil	1988	Vanadium	N/A	µg/kg	4	4	2.54E+04	3.29E+04	45M03
2820	WP45	Surface Soil	1992	Vinyl chloride	2	µg/kg	3	–	–	–	
2821	WP45	Surface Soil	1992	Xylenes (total)	5	µg/kg	3	1	3.30E+03	3.30E+03	45SB08-A
2822	WP45	Surface Soil	1988	Zinc	N/A	µg/kg	4	4	3.36E+04	4.68E+04	45M02
2823	WP45	Soil	1992	1,1,1-Trichloroethane	0.5	µg/kg	4	–	–	–	
2824	WP45	Soil	1992	1,1,2-Trichloroethane	0.5	µg/kg	4	–	–	–	
2825	WP45	Soil	1992	1,1-Dichloroethane	1	µg/kg	4	–	–	–	
2826	WP45	Soil	1992	1,2-Dichloroethane	0.5	µg/kg	4	–	–	–	
2827	WP45	Soil	1992	1,4-Dichlorobenzene	2	µg/kg	4	–	–	–	
2828	WP45	Soil	1988	Aluminum	N/A	µg/kg	1	1	5.86E+06	5.86E+06	45M01
2829	WP45	Soil	1988	Antimony	4.50E+03	µg/kg	1	–	–	–	
2830	WP45	Soil	1988	Barium	N/A	µg/kg	1	1	6.41E+04	6.41E+04	45M01
2831	WP45	Soil	1992	Benzene	2	µg/kg	4	–	–	–	
2832	WP45	Soil	1988	Benzo(a)anthracene	10	µg/kg	1	–	–	–	
2833	WP45	Soil	1988	Benzo(a)pyrene	9	µg/kg	1	–	–	–	
2834	WP45	Soil	1988	Benzo(b)fluoranthene	30	µg/kg	1	–	–	–	
2835	WP45	Soil	1988	Benzo(g,h,i)perylene	40	µg/kg	1	–	–	–	
2836	WP45	Soil	1988	Bis(2-ethylhexyl)phthalate	100	µg/kg	1	–	–	–	
2837	WP45	Soil	1988	Cadmium	N/A	µg/kg	1	1	3.28E+03	3.28E+03	45M01
2838	WP45	Soil	1988	Calcium	N/A	µg/kg	1	1	3.95E+06	3.95E+06	45M01
2839	WP45	Soil	1992	Carbon tetrachloride	1	µg/kg	4	–	–	–	
2840	WP45	Soil	1992	Chloroform	0.5	µg/kg	4	–	–	–	
2841	WP45	Soil	1988	Chromium	N/A	µg/kg	1	1	1.16E+04	1.16E+04	45M01
2842	WP45	Soil	1988	Chrysene	70	µg/kg	1	–	–	–	
2843	WP45	Soil	1992	Cis-1,2-dichloroethylene	1	µg/kg	4	–	–	–	
2844	WP45	Soil	1988	Cobalt	N/A	µg/kg	1	1	6.78E+03	6.78E+03	45M01
2845	WP45	Soil	1988	Copper	N/A	µg/kg	1	1	1.68E+04	1.68E+04	45M01
2846	WP45	Soil	1988	Diethylphthalate	60	µg/kg	1	–	–	–	
2847	WP45	Soil	1992	Ethylbenzene	2	µg/kg	4	1	770	770	45SB08-B
2848	WP45	Soil	1988	Fluoranthene	50	µg/kg	1	–	–	–	
2849	WP45	Soil	1988	Indeno(1,2,3-cd)pyrene	50	µg/kg	1	–	–	–	
2850	WP45	Soil	1988	Iron	N/A	µg/kg	1	1	1.27E+07	1.27E+07	45M01
2851	WP45	Soil	1988	Lead	N/A	µg/kg	1	1	7.81E+03	7.81E+03	45M01
2852	WP45	Soil	1992	Lead	N/A	µg/kg	2	2	4.20E+03	4.30E+03	45SB08-B
2853	WP45	Soil	1988	Magnesium	N/A	µg/kg	1	1	3.82E+06	3.82E+06	45M01
2854	WP45	Soil	1988	Manganese	N/A	µg/kg	1	1	2.15E+05	2.15E+05	45M01
2855	WP45	Soil	1988	Mercury	19.6	µg/kg	1	–	–	–	
2856	WP45	Soil	1992	Methylenechloride	5	µg/kg	4	–	–	–	
2857	WP45	Soil	1988	Nickel	N/A	µg/kg	1	1	1.54E+04	1.54E+04	45M01

	A	B	C	D	E	F	G	H	I	J	K
1	Source Area	Media	Date	Analyte	DL	Units	#Samples	#Detect	Min Conc	Max Conc	Max Location
2858	WP45	Soil	1988	Phenanthrene	20	µg/kg	1	–	–	–	
2859	WP45	Soil	1988	Potassium	N/A	µg/kg	1	1	6.14E+05	6.14E+05	45M01
2860	WP45	Soil	1988	Pyrene	60	µg/kg	1	–	–	–	
2861	WP45	Soil	1988	Sodium	N/A	µg/kg	1	1	2.65E+05	2.65E+05	45M01
2862	WP45	Soil	1992	Tetrachloroethene	0.5	µg/kg	4	1	250	250	45SB08-B
2863	WP45	Soil	1992	Toluene	2	µg/kg	4	1	1.10E+03	1.10E+03	45SB08-B
2864	WP45	Soil	1992	Trans-DCE	1	µg/kg	4	–	–	–	
2865	WP45	Soil	1992	Trichloroethene	1	µg/kg	4	1	1.20E+04	1.20E+04	45SB08-B
2866	WP45	Soil	1988	Vanadium	N/A	µg/kg	1	1	2.94E+04	2.94E+04	45M01
2867	WP45	Soil	1992	Vinyl chloride	2	µg/kg	4	–	–	–	
2868	WP45	Soil	1992	Xylenes (total)	5	µg/kg	4	1	4.60E+03	4.60E+03	45SB08-B
2869	WP45	Soil	1988	Zinc	N/A	µg/kg	1	1	3.92E+04	3.92E+04	45M01