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Final

Decision Document

Site 10, GATAR Compound
Naval Air Station Fallon
Fallon, Nevada

January 10, 2005

Prepared for

ENGINEERING FIELD ACTIVITY WEST
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DECLARATION OF THE DECISION

SITE NAME AND LOCATION

Site 10, GATAR Compound
Naval Air Station Fallon
Fallon, Nevada

CERCLIS Identification Number
NV9170022173

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedy for Site 10, GATAR Compound, at Naval Air Station (NAS) Fallon in Fallon, Nevada. This decision is based on information contained in the Administrative Record for the site and is in accordance with the guidelines of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is also in accordance with Nevada Administrative Code (NAC) 445A.226 through 445A.22755.

The U.S. Navy selected the remedy, and the State of Nevada concurs with the remedy selection.

DESCRIPTION OF THE SELECTED REMEDIES

Based on the following observations and data, No Further Action is required at the GATAR Compound (Installation Restoration [IR] Site 10), NAS Fallon, Nevada. Data collected within, upgradient, and downgradient of Site 10, indicate that polychlorinated biphenyl (PCB) compounds were not detected in soil samples, or in the most recent groundwater samples. These data also indicate contaminants observed in groundwater at Site 10 have not been identified in Site 10 soil. However, if the source of contaminants in groundwater is Site 10 or an upgradient site, the source of these groundwater contaminants are within the groundwater plume associated with Site 16. This plume is being addressed as part of the ongoing remedial actions for the Site 16 and the treatment system will address all subsurface contaminants within the Site 16 groundwater plume.

STATUTORY DETERMINATIONS

The selected remedy for Site 10 is protective of human health and the environment and in compliance with federal and state applicable or relevant and appropriate requirements (ARARs). Although soil at and near the groundwater surface contains concentrations of extractable total petroleum hydrocarbons (TPH-E) above state action levels, this contamination is associated with releases from Site 16. Petroleum hydrocarbons, 1,1-dichloroethene, 2-methylnaphthalene, benzene, bis(2-ethylhexyl)phthalate, naphthalene, pentachlorophenol, trichloroethene, and vinyl chloride were detected at concentrations above the state action levels in groundwater at or in the vicinity of Site 10. These compounds were not detected in soil samples from Site 10 at concentrations greater than state action levels. However, if the source of these groundwater contaminants is Site 10 or an upgradient site, they are within the groundwater plume from Site 16 and will therefore be addressed as part of the ongoing remedial actions for Site 16. The site may be reopened for further evaluation and, if necessary, cleanup, on the basis of newly discovered information that leads the U.S. Navy (Navy) and the Nevada Division of Environmental Protection (NDEP) to determine that the remedy may not be protective of human health and the environment.

SITE NAME AND LOCATION

Site 10, GATAR Compound
Naval Air Station Fallon
Fallon, Nevada

CERCLIS Identification Number
NV9170022173

Capt. Ryder

Captain Scott Ryder
Commanding Officer
Naval Air Station Fallon

14 Jan. 2005
Date

Jim Nagima
Chief, Bureau of Corrective Action
Nevada Division of Environmental Protection

JAN 27, 2005
Date

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ABBREVIATIONS AND ACRONYMS

ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
cm/sec	centimeter per second
CRP	community relations plan
EPA	U.S. Environmental Protection Agency
FS	feasibility study
GATAR	Ground to Air Transmitting and Receiving (compound)
GC	gas chromatograph
IR	Installation Restoration
JP-5	jet petroleum No. 5
LBP PHC	low-boiling-point petroleum hydrocarbons
LD	lower diagonal
LNAPL	light nonaqueous-phase liquid
MCL	maximum contaminant level
µg/L	microgram per liter
mg/kg	milligram per kilogram
mg/L	milligram per liter
NAAS	Naval Air Auxiliary Station
NAC	Nevada Administrative Code
NAS	Naval Air Station
Navy	U.S. Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NDEP	Nevada Division of Environmental Protection
PA	preliminary assessment
PCB	polychlorinated biphenyl
PID	photoionization detector
PRG	preliminary remediation goal
PSCS	preliminary site characterization summary
RAB	Restoration Advisory Board
RI	remedial investigation
SI	site inspection
SARA	Superfund Amendments and Reauthorization Act of 1986
SVOC	semivolatile organic compound
TCLP	toxicity characteristics leaching procedure

ABBREVIATIONS AND ACRONYMS (Continued)

TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TPH-E	total petroleum hydrocarbons—extractable
TPH-P	total petroleum hydrocarbons—purgeable
TRC	technical review committee
VOC	volatile organic compound

1.0 INTRODUCTION

This decision summary describes the site-specific factors and analyses that led to the selection of No Further Action as the remedy for Site 10, GATAR Compound, at Naval Air Station (NAS) Fallon, in Fallon, Nevada.

This decision document supersedes and replaces the *Draft Final Decision Document, Site 10, GATAR Compound*, dated August 27, 1999. Documents supporting the decision are included in the Administrative Record for the site. Key documents are identified in Section 10.

The format and organization of this decision document are based on U.S. Environmental Protection Agency's (EPA's) *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents,* dated July 1999. This decision document includes the pertinent elements of Nevada Division of Environmental Protection's (NDEP's) *Requirements for IRP Decision Documents*, transmitted in a letter dated December 30, 1998. This decision document is organized as follows:

- **Declaration of the Decision.** Functions as the abstract and formal authorizing signature page for the decision document
- **Section 1—Introduction.** Summarizes the purpose and organization of the decision summary portion of the decision document, identifies the site to which the decision document pertains, and clarifies the relationship of this decision document to previous versions of the decision document
- **Section 2—Site Name, Location, Description, and History.** Identifies and describes the site, provides location and property ownership information, and summarizes the history of the site that led to conditions observed at the site as well as previous investigation activities
- **Section 3—Community Participation.** Documents community participation activities throughout the decision making process, references the "responsiveness summary" in Appendix A, and describes the location and availability of the Administrative Record
- **Section 4—Scope and Role of Site.** Discusses Site 10 in relation to other sites at NAS Fallon and identifies when and where monitoring or remedial activities at other sites influence, or are influenced by, monitoring or remedial activities at Site 10

- **Section 5—Site Characteristics.** Summarizes the regional, facility, and site-specific characteristics and conditions, including the concentrations and distribution of contaminants and their fate and transport

- **Section 6—Current and Potential Site and Resource Uses.** Discusses the current and potential future uses of the land

- **Section 7—Summary of Site Risks.** Discusses risks due to contamination present at the site

- **Section 8—Statutory Authority Finding.** States the conclusion that no further action is necessary at Site 10

- **Section 9—Documentation of Significant Changes.** Describes the changes made to this decision document on the basis of comments received during the public comment period

- **Section 10—Bibliography.** Lists the sources of information used in preparing this decision document

- **Appendix A—Responsiveness Summary.** Summarizes responses to public comments

2.0 SITE NAME, LOCATION, DESCRIPTION, AND HISTORY

NAS Fallon is located in west-central Nevada, approximately 6 miles southeast of the city of Fallon and 60 miles east of the city of Reno (Figure 2-1). NAS Fallon was originally established as a military facility in 1942, when the Civil Aviation Administration and Army Air Corps constructed four airfields in Nevada as part of the Western Defense Program. In 1943, the Navy assumed control of the still-uncompleted facility, and on June 10, 1944, Naval Air Auxiliary Station (NAAS) Fallon was commissioned. The newly commissioned facility provided training, servicing, and support to air groups sent to the facility for combat training. From 1946 to 1951, NAAS Fallon experienced varying but reduced operational status and was eventually turned over to Churchill County and the Bureau of Indian Service.

In 1951, Fallon was used as an auxiliary landing field for NAS Alameda, California, and on October 1, 1953, NAAS Fallon was re-established. From 1945 to 1975, the Air Force also occupied part of the station as part of an early warning radar network. On January 1, 1972, NAAS Fallon was upgraded to its current status of NAS Fallon. NAS Fallon serves as the primary Naval aircraft weapons delivery and tactical air combat training facility. With the construction of a new runway and additional aircraft maintenance facilities, NAS Fallon's training mission is expected to continue to expand.

2.1 SITE DESCRIPTION

Site 10, GATAR Compound, is located in the southeastern part of the southern portion of NAS Fallon, immediately west of Site 19, east of Building 424, and north of F Street (Figure 2-2). The majority of Site 10 is paved. The area of Site 10 measures approximately 160 by 300 feet. This area is currently referred to as the MWR Recycling Facility and is occupied by several structures. Site 10 was investigated as part of the Group IV sites, nine sites that were grouped together because of their proximity and the potential for overlapping areas of contamination.

The site's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Identification Number is listed as NV9170022173. NAS Fallon is the lead agency for site activities, and NDEP serves as the lead regulatory agency.

Site 10 originally belonged to the Air Force and came under Navy control in 1975. The area was reportedly unused until 1984 when storage activities were initiated. Since 1986, the site was used by the Navy Safety Department, as a 90-day accumulation area for hazardous waste prior to its removal for off-station disposal until 1990. Drummed petroleum and petroleum wastes were stored at the site until 1994. The site is no longer used for any waste storage.

Hazardous wastes accumulated at Site 10 included polychlorinated biphenyls (PCBs), paints, solvents, waste oils, and hydraulic fluids. PCBs were stored primarily as transformer oil in electrical transformers. Several containers of waste oil containing PCBs were reportedly buried on the site in 1984 at an unknown location. Other hazardous liquids were stored in aboveground containers, primarily 55-gallon drums.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The purpose of the Navy's Installation Restoration (IR) Program is to identify, assess, characterize, and clean up or control contamination from past hazardous material spills and waste disposal activities at Navy and Marine Corps facilities. As part of the IR Program, NAS Fallon conducted the following investigations/assessment activities:

- A preliminary assessment/site inspection (PA/SI) was conducted at Site 10 in 1987. It consisted of a records search, a site visit, and employee interviews (NEESA 1988). An additional investigation, including a geophysical survey and soil sampling, was recommended for Site 10. This additional investigation was recommended to assess the reported historical burial of cans of PCB-containing oil and possible releases of hazardous waste from transformers and drums temporarily stored at the site.

- A Preliminary Site Characterization Summary (PSCS) was performed in 1989. The purpose of the PSCS at Site 10 was to assess the presence or absence of contamination through a geophysical survey and soil sampling and, if necessary, to recommend appropriate remedial measures. The site characterization at Site 10 consisted of an EM-31 geophysical survey, drilling of groundwater test holes around the perimeter of Site 10, and sampling of five soil borings drilled to 4 feet below ground surface (bgs). Three target areas that could potentially contain buried cans of PCB-containing oil were identified by the geophysical survey and were recommended for further investigation. Groundwater test holes north and south of Site 10 indicated the presence of volatile contaminants in groundwater, which were attributed to a petroleum release from the upgradient Site 16. The soil borings were drilled in the southeastern corner of Site 10, within the former hazardous waste drum storage area.

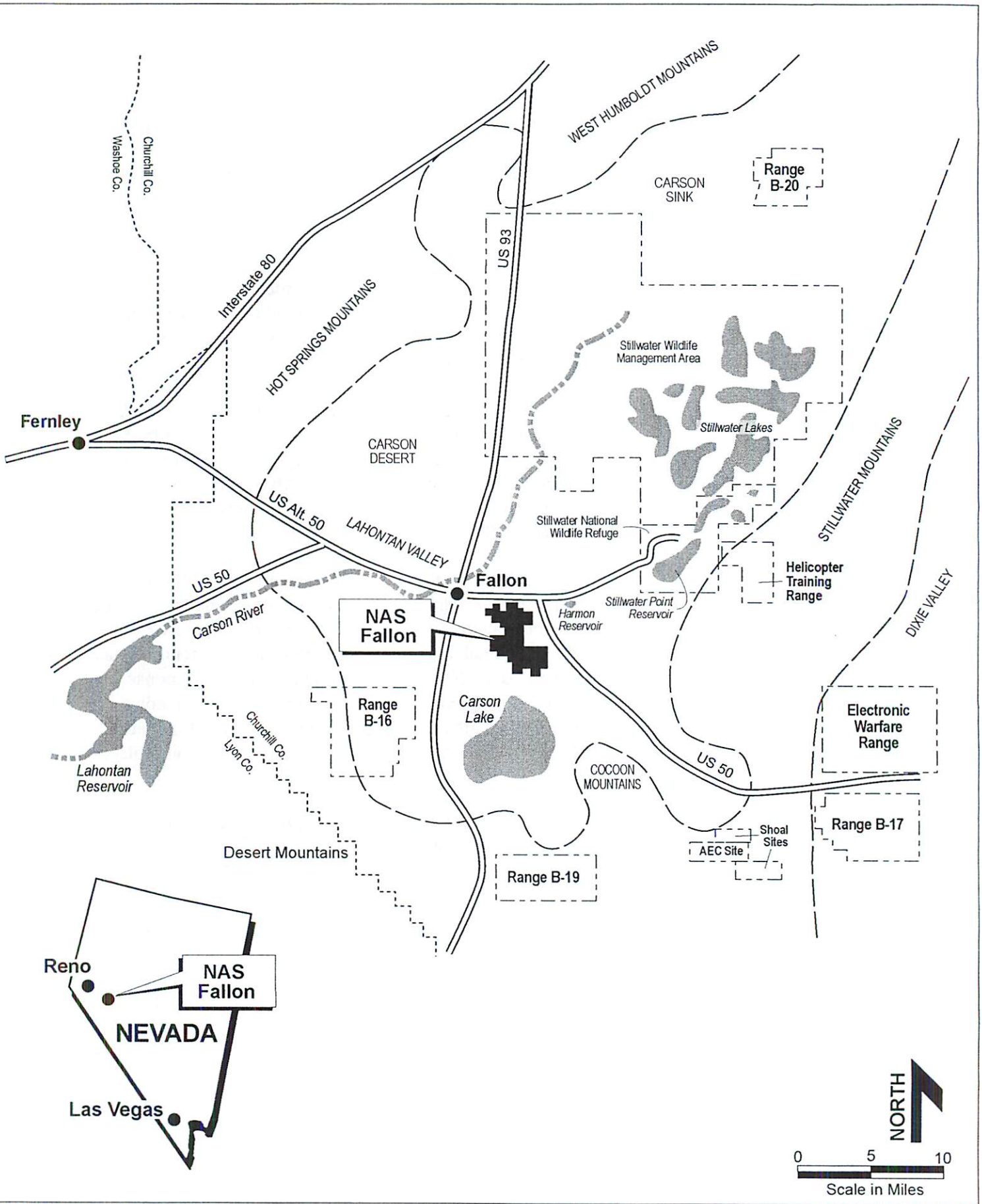
- In response to the recommendations presented in the PSCS, excavations were made in the three target areas where buried cans of PCB-containing oil could be present. In December 1993, three excavations were made to approximately 6 feet bgs, where groundwater was encountered. No cans containing PCB-laden oil or any other

substance were found in the excavations. The target areas identified by the geophysical survey were interpreted to represent either buried aircraft debris or localized variations in soil characteristics. Results of these investigations were reported in the remedial investigation (RI) report date 1994.

- Supplemental soil and groundwater sampling was conducted at the site in 2002. Sampling locations are shown on Figure 2-3. Soil samples were collected from three direct-push locations, which were analyzed for PCBs. A groundwater sample was collected from one direct-push location, which was analyzed for total petroleum hydrocarbons (TPH), PCBs, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs).

After the RI was published, the Navy prepared a draft decision document (in June 1998) for Site 10 presenting a decision of No Further Action. The NDEP provided comments on the draft decision document. A draft final decision document for Site 10 was prepared in August 1999, and the NDEP provided comments on the draft final document. Responses to comments on the draft final decision document were presented to the NDEP. During the review and response process with the NDEP, the NDEP and the Navy agreed to substantially revise the decision document and to include additional data collected after the preparation of the August 1999 draft final decision document for Site 10. This decision document, therefore, supersedes and replaces all previous versions.

NAS Fallon is not listed on the National Priorities List, and therefore NDEP provides regulatory oversight. There have been no enforcement activities at the site.



U.S. NAVY	Figure 2-1 Location Map, NAS Fallon	Delivery Order 0031 NAS Fallon DECISION DOCUMENT SITE 10

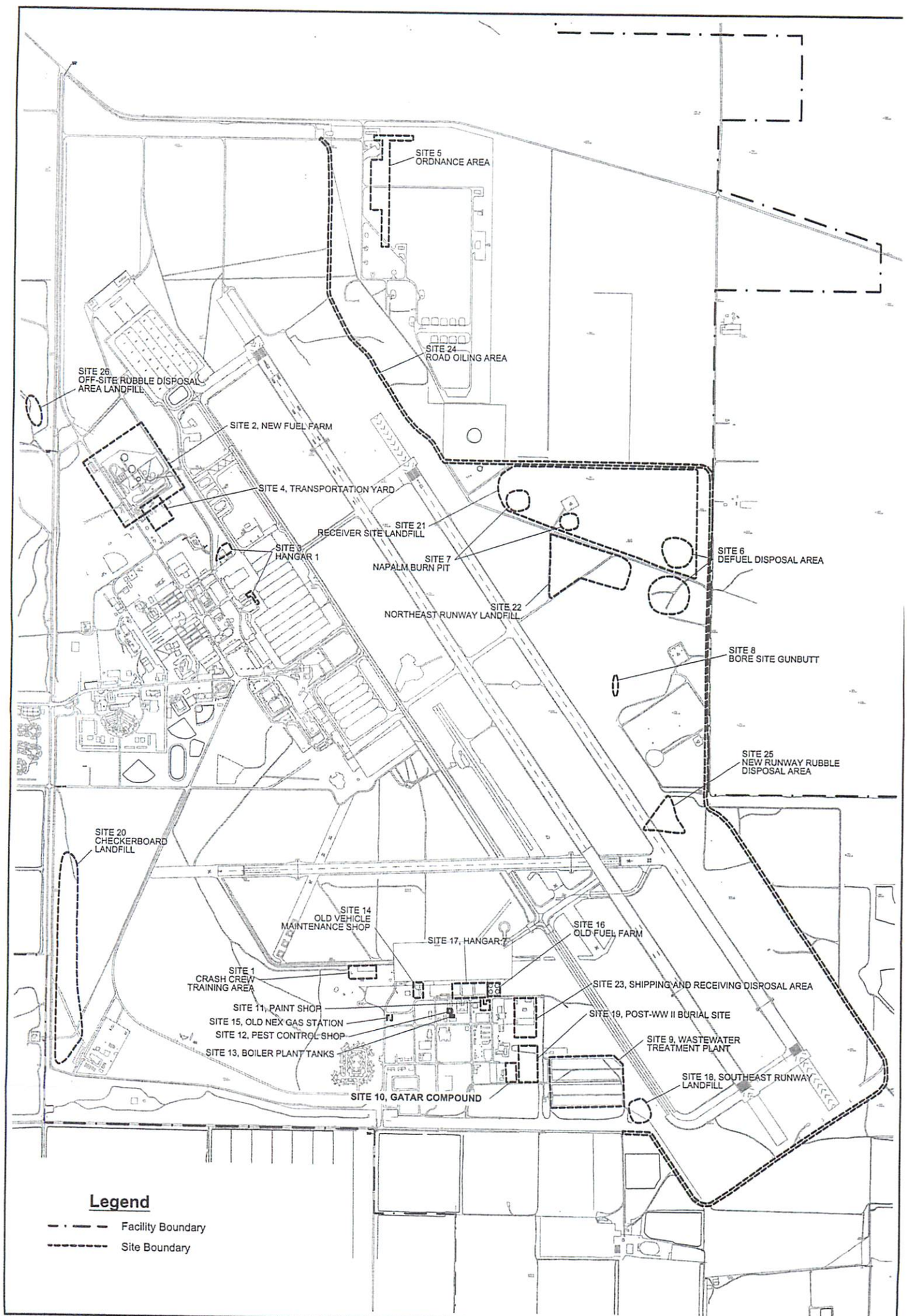


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Figure 2-2
NAS Fallon Facility Map

Delivery Order 0031
NAS Fallon
DECISION DOCUMENT
SITE 10

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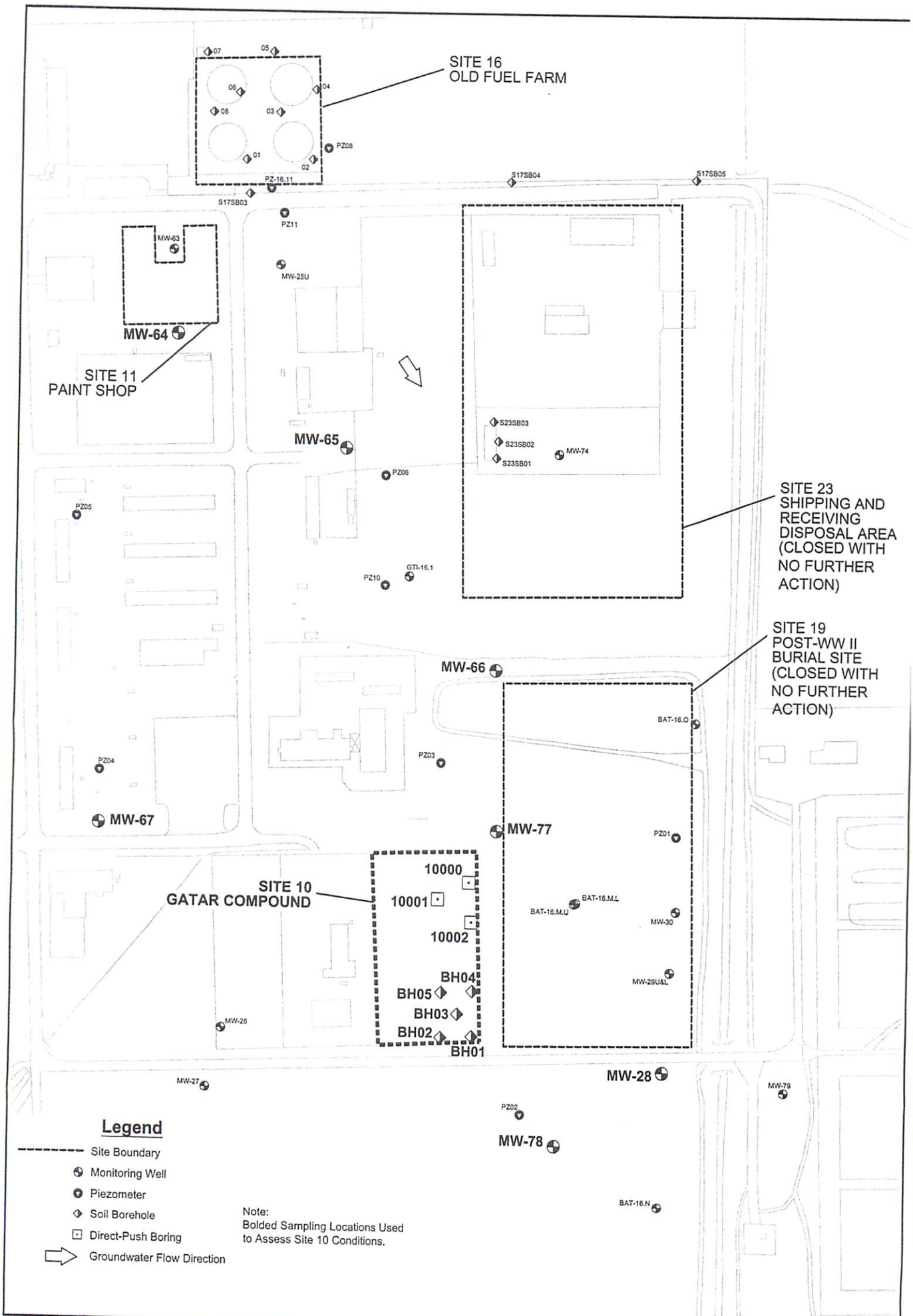

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Figure 2-3
Sampling Locations at Site 10, GATAR Compound

Delivery Order 0031
NAS Fallon
DECISION DOCUMENT
SITE 10

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3.0 COMMUNITY PARTICIPATION

Community participation is being encouraged under a community relations plan (CRP) drafted pursuant to Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). This plan was updated during 2004.

During 1989, a Technical Review Committee (TRC) was formed in an effort to increase community participation and awareness regarding the IR sites and to provide comments on proposed actions under the NAS Fallon's IR Program. The TRC consisted of state and local regulatory representatives and NAS Fallon personnel. The TRC met in June 1989 to discuss potential requirements for future PA/SI or RI and feasibility study (FS) activities at NAS Fallon. This meeting provided an opportunity for the regulatory agencies to comment on and provide input to the proposed IR Program at NAS Fallon.

During August 1994, a Restoration Advisory Board (RAB) was established to replace the TRC. The RAB meets once a year and consists of members originally on the TRC and representatives from the local community.

All documents associated with this site, such as the PA/SI report, the RI report, the CRP and the Proposed Plan for Site 10, were made available to the public in the Information Repositories at NAS Fallon (Fallon, Nevada) and the Churchill County Public Library (Fallon, Nevada) and in the Administrative Record at the Engineering Field Activity, West, Offices (Daly City, California). The notice of the availability of these documents was published in the *Lahontan Valley News* on November 17 and 18, 2004. A public comment period was held from November 15 to December 15, 2004. In addition, a public meeting was held on November 18, 2004, to present the Proposed Plan to the community. At this meeting, representatives from NAS Fallon and the NDEP presented the Proposed Plan.

4.0 SCOPE AND ROLE OF SITE

Originally there were 27 IR sites at NAS Fallon. Two additional sites, underground storage tank sites 395 and 806, have been added. The locations of all IR sites are shown on Figure 2-2. Site 10 (GATAR Compound) is located in the southern station area immediately west of Site 19 (Post-WW II Burial Site), east of Building 424, and North of F Street. IR Program Sites 11, 16, 17, and 23 are located north (upgradient) of Site 10. Based on characterization results, the Navy and NDEP have taken the decision that no further action is required at Sites 17, 19, and 23. These decisions were taken in June 2002 for Site 19 and November 2003 for Sites 17 and 23. Site 11 (Paint Shop) is being recommended for No Further Action concurrently with Site 10. Site 16 (Old Fuel Farm) is currently undergoing active remediation to address volatile organic impacts to groundwater that extend from Site 16 to the south and southeast. These groundwater impacts are observed beneath Site 16 and other sites in the area. The active groundwater remedy implemented for Site 16 is currently addressing organic impacts to the subsurface beneath all affected sites or areas, including Site 10.

The sampling locations used to evaluate Site 10 are as follows:

- Five auger-boring locations within Site 10 from which soil samples were collected for qualitative analyses
- Three direct-push boring locations within Site 10 from which soil samples were collected for quantitative analyses
- One direct-push boring location within Site 10 from which a groundwater sample was collected for quantitative analysis
- Ten auger-boring locations adjacent to Site 10 from which groundwater samples were collected for qualitative analysis (these locations are sometimes referred to as "groundwater test holes")
- Seven permanent monitoring wells located upgradient, downgradient, or cross-gradient of Site 10 from which groundwater samples were collected for qualitative analyses

The sampling locations used as a basis for the decision for Site 10 are summarized in Table 4-1, along with the gradient relationships (upgradient, downgradient, on-site) to Site 10 and the uses of the data from each location. Table 4-2 provides a chronological summary of quantitative sampling activities at each location.

Five boreholes (BH-01 through BH-05) were drilled at Site 10 for the 1988 PSCS to quantitatively evaluate the extent of contaminants in vadose-zone soil related to waste storage activities at the site. However, laboratory reports for the resultant data were determined to be unusable due to method blank contamination. These data are considered to be qualitative.

A series of groundwater test holes were completed in the vicinity of the Group IV sites to identify the presence or absence of light nonaqueous phase liquid (LNAPL) on the groundwater surface and to determine locations for permanent groundwater monitoring wells. Monitoring wells MW-28, MW-64, MW-65, MW-66, and MW-67 (Figure 2-3) were constructed in 1991 to evaluate the potential extent of groundwater contamination related to Site 16 (Old Fuel Farm), as well as other Group IV sites. Monitoring wells MW-77 and MW-78 were subsequently completed during 1996 to better quantify the magnitude of contamination related to Site 16 in the vicinity of Site 10. The five permanent monitoring wells located upgradient of Site 10 (MW-64, MW-65, MW-66, MW-67, and MW-77) were used to assess whether contaminants were migrating onto Site 10 from the upgradient source at Site 16. The two permanent monitoring wells located downgradient of Site 10 (MW-28 and MW-78) were used to assess whether contaminants were migrating from Site 10 to adjoining areas.

Three direct-push borings were installed at Site 10 in 2002 to quantitatively assess the presence or absence of potential contaminants in soil or groundwater related to waste storage activities at the site. The three direct-push borings were installed to evaluate the impacts of Site 10 activities on subsurface soil at the site. One of the three direct-push borings was installed to further assess whether contaminants were migrating onto Site 10 from the upgradient sources.

Table 4-1
Summary of Data From Sampling Locations Used as Basis of Decision for Site 10, GATAR Compound

Sampling Location	Data Type	Data Uses
Within Site 10		
Boreholes BH-01 through BH-05	Qualitative	The intent of sampling at these locations during the PSCS was to quantitatively assess the presence or absence of contaminants in soil related to waste storage activities at the GATAR Compound. However, the resultant laboratory data are unusable because of method blank contamination. The data summarized in the PSCS from these locations are considered to be qualitative.
Boreholes 10000 through 10002	Quantitative	These data are used to quantitatively assess the presence or absence of potential contaminants in soil related to waste storage activities at the GATAR Compound.
Borehole 10002	Quantitative	These data are used to quantitatively assess the presence or absence of potential contaminants in groundwater beneath the GATAR Compound.
Upgradient of Site 10		
Groundwater Test Holes 20, 21, 22, 23, and 26	Qualitative/ screening	These locations were established for visual inspection to identify the presence or absence of LNAPL on the groundwater surface and for the qualitative assessment of volatile contaminants in groundwater. The results were used to site permanent groundwater monitoring wells.
Wells MW-64, MW-65, MW-66, MW-67 and MW-77	Quantitative	These data are used to quantitatively assess the presence or absence of potential contaminants in groundwater migrating onto the GATAR Compound.
Downgradient of Site 10		
Groundwater Test Holes 31, 33, 34, and 35	Qualitative/ screening	These locations were established for visual inspection to identify the presence or absence of LNAPL on the groundwater surface and for the qualitative assessment of volatile contaminants in groundwater. The results were used to site permanent groundwater monitoring wells.
Wells MW-28 and MW-78	Quantitative	These data are used to quantitatively assess the presence or absence of potential contaminants in groundwater migrating from the GATAR Compound.

Notes:
BH - borehole
LNAPL - light nonaqueous-phase liquid
MW - monitoring well
PSCS - preliminary site characterization summary

Table 4-2
Chronological Quantitative Sampling Summary

Sampling Location	Matrix	Sampling Date(s)	Range of Analyses[a]
MW-28	Soil	3/91	Petroleum hydrocarbons, VOCs, and SVOCs
MW-64	Soil	11/91	Petroleum hydrocarbons, VOCs, and SVOCs
MW-77	Soil	3/96	Petroleum hydrocarbons, VOCs, and TOC
MW-78	Soil	3/96	Petroleum hydrocarbons, VOCs, and TOC
Direct-Push Borings 10000, 10001, and 10002	Soil	4/02	PCBs
MW-28	Groundwater	4/91, 8/91, 10/93, 3/95, 9/95, 9/96, 3/97, 9/97, 9/98, 4/99, 11/99, and 2/01	Petroleum hydrocarbons, VOCs, SVOCs, PCBs and pesticides, and total inorganics
MW-64	Groundwater	12/91, 4/92	Petroleum hydrocarbons, VOCs, and SVOCs
MW-65	Groundwater	12/91, 4/92, 10/93, 3/95, 9/95, 9/96, 3/97, 9/97, 3/98, 9/98, 4/99, 9/99, 12/99, 10/02, 10/03	Petroleum hydrocarbons, VOCs, SVOCs, total inorganics, and water quality
MW-66	Groundwater	12/91, 4/92, 10/93, 3/95, 3/97, 9/97, 12/97, 3/98, 9/98, 4/99, 9/99, 11/99, 10/02, and 10/03	Petroleum hydrocarbons, VOCs, SVOCs, total inorganics, and water quality
MW-67	Groundwater	12/91, 10/93	Petroleum hydrocarbons, VOCs, SVOCs, and PCBs
MW-77	Groundwater	9/96, 3/97, 9/97, 3/98, 9/98, 4/99, 9/99, 11/99, 10/02, and 10/03	Petroleum hydrocarbons, VOCs, total inorganics, water quality, and uranium
MW-78	Groundwater	9/96, 3/97, 9/97, 11/99, 4/02, 10/03	Petroleum hydrocarbons, VOCs, total inorganics, water quality, and uranium
Direct-Push Boring 10002	Groundwater	4/02	Petroleum hydrocarbons, VOCs, SVOCs, PCBs, and TDS

[a]All analyses in the range shown were not necessarily performed on each sampling date.

Notes:
MW – monitoring well
PCBs – polychlorinated biphenyls
SVOCs – semivolatile organic compounds
TDS – total dissolved solids
TOC – total organic carbon
VOCs – volatile organic compounds

5.0 SITE CHARACTERISTICS

This section summarizes the characteristics and conditions of the region, the facility, and the site. It describes the physical and ecological setting, climate, surface water patterns, and geology and hydrogeology, as well as the nature and extent of contamination and the fate and transport of chemicals of concern.

5.1 PHYSICAL SETTING

5.1.1 Physical Setting of Facility

NAS Fallon lies on a broad, flat alluvial plain in the southern Carson Desert, referred to as the Lahontan Valley. The Carson Desert is part of the Basin and Range geological province. Carson Lake, a series of ditches and small marshes, is a few miles south of the facility. The Stillwater Lakes, a chain of small lakes, ponds, and marshes, extend for 20 miles south of the Carson Sink in the northern half of the Carson Desert (Figure 2-1). Carson Lake and the Stillwater Lakes are two wetland areas that serve as an important stopover for migratory birds during the spring and fall. Recent drought years have caused the Stillwater Lakes to shrink from approximately 100,000 acres of wetlands in 1983 to 4,000 acres of wetlands in 1991.

The Carson Desert is a hydrologically closed depression that forms the sink for the Carson River. The entire area is in the rain shadow of the Sierra Nevada Mountains; consequently, precipitation is about 5 inches per year. About 80 percent of the Carson Desert surface consists of the Carson River floodplain, with the rest composed of playas and alluvial fans. The surface soils are enriched with salts and cations such as arsenic, lithium, mercury, and molybdenum that have been transported to the basin by the river and have been concentrated as a result of evaporation of ancient Lake Lahontan.

The Carson River, augmented by the Truckee River via the Truckee canal (part of the Newlands Irrigation Project), provides more than 95 percent of all surface runoff received by the Carson Desert. Much of the area around the facility is irrigated; several irrigation ditches deliver water, and drainage canals remove excess water. The drainage canals generally intersect the shallow water table aquifer and drain excess water from the farmland.

There are two major drainage canals at NAS Fallon:

- The "lower diagonal (LD) drain," the alignment of which is along the southwestern edge of the facility and east along the southern boundary of the facility proper

- The "LD #1 drain," which crosses onto the facility just north of Site 2 (the New Fuel Farm), drains to the east from the west side of the facility, and then drains to the south

The most important distinction between the irrigation ditches and the drainage canals (drains) is that the drains are intended to intersect shallow groundwater as well as surface water and to conduct the water away from the drained areas. Conversely, the irrigation ditches deliver water to the fields. In the process of carrying off excess surface water and shallow groundwater, the drains remove minerals or salts leached from the farmland. The drains carry water southeastward to Carson Lake and northeastward to the Harmon and Stillwater Point Reservoirs.

The LD drain is approximately 500 feet south of the Group IV Sites. In addition, an unnamed drain is located just east of Group IV Sites 23 and 19. The primary sources of water in this drain are backflow from the LD drain during the irrigation season and wastewater treatment plant discharge. During rare storm events, stormwater in small ditches may enter the unnamed drain.

5.1.2 Site 10 Physical Setting

Site 10, GATAR Compound, is located in the southern portion of NAS Fallon, immediately west of Site 19, east of Building 424, and north of F Street (Figure 2-2). Site 10 encompasses approximately 1 acre, extending approximately 160 feet east to west and 300 feet from north to south. The majority of Site 10 is paved. This area is currently referred to as the MWR Recycling Facility and is occupied by several structures. NAS Fallon does not expect any change in the use of this land or that of the surrounding sites in the foreseeable future. There are no areas of archaeological or historical significance at Site 10.

5.2 ECOLOGY

5.2.1 Vegetation

NAS Fallon was originally a greasewood community typical of alkali valley bottom lands, portions of which have since been irrigated and used as pasture. Typical plants for this area include saltbush, shadscale, quailbush, greasewood, milkweed, poverty weed, alkali sacaton, rabbitbrush, saltgrass, and alkali seepweed.

The flat, alkali bottom lands making up the southern portion of the Carson Sink currently receive sufficient irrigation return flow and Carson River water to be recognized as a wetland habitat, especially for waterfowl. Vegetation typical of these areas includes bullbush, cattail, pondweed,

widgeon grass, muskgrass, and coontail. Cottonwoods and willows occupy portions of the banks of various ponds, ditches, and drains.

5.2.2 Endangered and Threatened Plant Species

No endangered or threatened plant species designated by the state or federal government are known or likely to occur in the region.

5.2.3 Wildlife

Terrestrial wildlife in the region consists of species adapted to the desert or dependent on wetlands. About 67 species of mammals inhabit the area. Mountain ranges in the region, outside of the area of human impact, support large mammals such as mountain lions and mule deer. Common mammals of the area include bats, coyote, kit fox hare, jackrabbit, deer mouse, ground squirrel, and kangaroo rat.

More than 252 species of birds have been recorded regionally. Upland game birds of the desert are the ring-necked pheasant, sage grouse, the introduced chukar partridge, quail, and mourning dove. A variety of raptors and songbirds are also present.

The Stillwater National Wildlife Management Area, 7 miles east of NAS Fallon, and Carson Lake, 4 miles south of NAS Fallon, support the two largest concentrations of waterfowl and shorebirds in the state. Important game birds include canvasbacks, whistling swans, and Canada geese. Nongame species include the American avocet, black-necked stilt, white-faced ibis, and dowitchers.

5.2.4 Aquatic Life

The drains at NAS Fallon may be inhabited by mosquito fish, carp, bullhead, catfish, sunfish, muskrats, herons, and egrets.

5.2.5 Endangered Animal Species

Federally listed endangered and threatened animal species that may utilize the NAS Fallon and range areas include the bald eagle. These species are most likely to be found hunting the wetland portions of the area but may occasionally be seen elsewhere. The nearest breeding habitat is to the northwest, outside the boundaries of the NAS Fallon facility.

5.3 GEOLOGY AND HYDROGEOLOGY

5.3.1 Regional and Facility Geology

The area within and surrounding NAS Fallon consists of an intermontane valley. The mountains near NAS Fallon are composed primarily of a variety of consolidated igneous, sedimentary, and metamorphic rocks that range in age from Triassic to Quaternary.

The Basin and Range faulting that occurred during the Cenozoic Era probably formed the bedrock surface below the valley fill sediments. This formation of the intermontane valley was accompanied by deposition of valley-fill sediments on the floor to depths of several thousand feet. Sediment composing the valley fill was derived from three primary sources:

- Upstream valleys of the Carson River drainage
- Upstream valleys of the Humbolt River basin
- Mechanical weathering of consolidated rocks within the Carson Desert itself

It appears that most of the valley-fill sediments in and around NAS Fallon were transported into the valley by the ancestral Carson River.

The depositional character of the valley-fill sediments at NAS Fallon was greatly influenced by the presence of the ancient Lake Lahontan, a Quaternary-age lake that was subject to numerous cycles of advancement and retreat. Regional climatic changes caused dramatic oscillations of lake stages and shorelines throughout the Pleistocene Epoch. Subsurface stratigraphic evidence also suggests the existence of pre-Quaternary-age lakes in the valley. The pluvial influences on sediment deposition were extensive and probably varied during the greater part of Cenozoic time. The alternating influences of wave action, standing water, flowing water, and wind on the sediment transported into the valley by the Humbolt and Carson Rivers resulted in a complex sequence of interfingered and interbedded deposits of fluvial, deltaic, lacustrine, and eolian deposits.

Previously published descriptions of these deposits were generally confirmed during the installation of monitoring wells across the facility. However, the highly transmissive, coarse-grained deposits of the Fallon Formation were found to be both laterally and vertically discontinuous. Below the upper 20 feet of interbedded coarse-grained and fine-grained deposits, a laterally continuous bed of fine-grained silts and clays of the Sehoo formation forms an aquitard, providing a natural barrier to the downward migration of groundwater and contaminants.

The generalized stratigraphy beneath NAS Fallon is provided in Figure 5-1.

5.3.2 Regional and Facility Hydrogeology

Abundant groundwater is present in the valley-fill sediments and the underlying volcanic strata of the Carson Desert as a result of the closed nature of the hydrologic basin and the remnants of Pleistocene Lake Lahontan that once covered the entire area. Groundwater occurs in three principal aquifer systems: (1) a shallow alluvial aquifer, (2) intermediate and deep alluvial aquifers, and (3) a basalt aquifer.

The shallow water-table aquifer occupies the alluvium from near the ground surface to about 25 feet bgs. The shallow aquifer is composed of many interconnected zones of varying permeability, ranging from highly transmissive channel sands to less-transmissive silty clay floodplain and lake deposits. The water quality is generally poor because the water has a high concentration of dissolved solids; however, freshwater recharge from the surface-water irrigation system helps maintain water quality in some parts of the valley.

Reports of regional water quality in the shallow alluvial aquifer and irrigation return flows contain information on the range of concentrations of various metals and anions. This information is summarized in the *Preliminary Site Characterization Summary*. Although the concentrations of these constituents vary considerably, there is a trend of increasing concentrations toward discharge areas at the Stillwater Lakes and Carson Lake. Concentrations of many trace metals exceed various criteria for the protection of aquatic life and crops, effect levels for fish reproduction, and limits for the propagation of wildlife. For example, background concentrations of boron in surface water often exceed the effect level for fish reproduction of 200 µg/L, and concentrations of arsenic in groundwater and surface water often exceed the Nevada criterion for the protection of aquatic life of 40 µg/L and the drinking water standard of 50 µg/L.

The regional groundwater flow direction is to the east and southeast toward Grimes Point and slightly diagonal to the drainage ditches that cross the facility. Glancey estimated the regional groundwater velocity to be approximately 35 feet per year in 1986. The site-specific groundwater flow velocities from numerous aquifer tests are highly variable.

Intermediate and deep alluvial aquifers are present beneath the shallow alluvial aquifer in the Wyemaha Formation. The boundary between the shallow and the intermediate aquifer is a relatively impermeable clay layer (Sehoo Formation), approximately 20 feet thick. The water in the intermediate and deep aquifers is generally of better quality than the water in the shallow aquifer. The boundary between the intermediate and deep aquifers is defined primarily on the basis of water quality, rather than the presence of a physical boundary. Water quality in the intermediate and deep alluvial aquifers generally improves with depth.

The deep alluvial aquifer extends to approximately 2,200 feet bgs near the center of the basin. The basalt aquifer lies within the intermediate and deep alluvial aquifers at a depth of approximately 600 feet bgs, within an approximate 4-mile radius around Rattlesnake Hill, a small volcanic cone that outcrops just north of the city of Fallon. The basalt aquifer is the only source of municipal domestic water in the area and is recharged from the intermediate and deep alluvial aquifers. The basalt aquifer is not present beneath NAS Fallon except possibly in the extreme northwest corner of the facility. However, NAS Fallon obtains all of its domestic water from this aquifer, through the city water treatment plant, using deep wells northwest of the facility.

Three monitoring wells penetrating the intermediate aquifer on the facility indicate a head difference of about 5 to 9 feet between the shallow unconfined aquifer and the intermediate confined aquifer. The head is higher in the intermediate aquifer, indicating artesian conditions that retard or preclude downward migration of groundwater at the facility. Because of this upward hydraulic gradient, investigations at the facility have focused on the shallow water-table aquifer, with three widely spaced wells drilled into the intermediate aquifer.

5.3.3 Site 10 Geology and Hydrogeology

The geologic information for Site 10 was obtained by soil sampling or cone penetrometer investigation during the installation of monitoring wells MW-26, MW-27, MW-28, MW-29, MW-30, MW-66, MW-67 and sampling at direct-push locations 10000, 10001, and 10002 (Figure 2-3). Subsurface investigations at the site were limited to the shallow alluvial aquifer (Fallon Formation) because of the presence of a silty clay aquitard (Sehoo Formation) at the base of this aquifer. None of the monitoring wells are located within the site boundaries. MW-66 and MW-67 are located upgradient of the site to the north and northwest respectively. MW-27 and MW-30 are located crossgradient of the site to the southwest and east respectively. MW-28 and MW-29 are located downgradient to the southeast of the site.

The monitoring wells listed in the previous paragraph typically penetrated the entire Fallon Formation and from 5 to 15 feet of the Sehoo Formation (see Figure 5-1 for the generalized stratigraphy in the area of NAS Fallon). Borings for these wells were completed to depths between 25 and 30 feet bgs. The Sehoo Formation aquitard was generally first encountered at depths ranging from 14 to 23 feet bgs. Deltaic sands with variable amounts of silt constitute the main soil type observed at the site above the aquitard. Channel deposits of the ancestral Carson River are observed within the Fallon Formation west of Site 10. These channel deposits were observed from 4 to 24 feet bgs at MW-26.

Groundwater surface elevation contours indicate a gradient and flow direction at Site 10 that are consistent with the regional flow direction, which is to the southeast. Depth to groundwater in wells used to evaluate conditions at Site 10 varies seasonally and ranges from 5.6 to 7.5 feet bgs. The average hydraulic gradient across the site was approximately 0.002 during April 1992 and 0.0011 during September 1997. Groundwater surface elevation contours for data collected during September 1997 are shown on Figure 5-2.

Bail tests were conducted on selected wells at the Group IV sites during April 1991 and June 1992. Wells MW-28, MW-29U, MW-29L, and MW-30 were bail tested during April 1991. Well MW-66 was bail tested during June 1992. Multiple bail tests were conducted at each location. The highest calculated hydraulic conductivity for each well location follows:

- MW-28: 0.28 feet/day, or 9.9×10^{-5} cm/sec
- MW-29U: 1.58 feet/day, or 5.6×10^{-4} cm/sec
- MW-29L: 2.45 feet/day, or 8.6×10^{-4} cm/sec
- MW-30: 1.16 feet/day, or 4.1×10^{-4} cm/sec
- MW-66: 2.6 feet/day, or 9.2×10^{-4} cm/sec

The highest bail test-derived hydraulic conductivity was observed at the upgradient well MW-66, and the lowest hydraulic conductivity was observed at the downgradient well MW-28. Assuming a porosity of 33 percent and a gradient of 0.002, the range of linear groundwater velocities across the site is estimated to be approximately 0.6 to 5.8 feet per year. Appendix E of the RI indicates that bail tests may underestimate the hydraulic conductivity of materials at the facility from 5 to 125 times. Pumping tests were conducted in the area of Site 2. The lithology in the area of well W-20 is similar to that observed in the area of Site 10. Pumping test-derived hydraulic conductivities were estimated at 38.9 to 61.6 feet per day. These estimates are 15 to 24 times higher than the highest bail test-based estimate of 2.6 feet per day at wells near Site 10, suggesting that groundwater velocity across the site could be as high as 140 feet per year. These velocity estimates are for groundwater and do not necessarily represent contaminant transport velocities, which are usually slower than groundwater velocity as a result of retardation. The degree to which contaminant velocity is "retarded" relative to groundwater depends on the amount of organic carbon in the saturated formation and the contaminant type.

5.4 NUMERICAL VALUES FOR COMPARISON TO CONTAMINANT CONCENTRATIONS

Comparative numerical values for action decisions at Site 10 are provided in the Nevada Administrative Code (NAC), which states the following:

- The "soil action level" established by NAC 445A.2272 is 100 mg/kg for petroleum substances (typically referred to as TPH).

- For contaminants in soil, compare the toxicity characteristics leaching procedure (TCLP)-allowable levels listed in 40 CFR Part 261.24 and the state action level pursuant to NAC 445A.2272 to contaminant concentrations detected during the investigation and/or remedial activities.

- If inhalation, ingestion or dermal exposure is the primary pathway of concern or an applicable level of concentration is not listed in the Toxicity Characteristics Leaching Rule, the presence of a hazardous substance, hazardous waste, or a regulated substance in the soil at an appropriate level of concentration that is based on the protection of public health and safety and the environment. The appropriate level of concentration must be determined by the division using the Integrated Risk Information System, adopted by the Environmental Protection Agency, as it existed on October 3, 1996, or an equivalent method chosen by the division. (Note: The equivalent method is generally assumed by NDEP to be EPA Region 9 preliminary remediation goals [PRGs]).

- Except as otherwise provided by NAC 445A.2272, if more than one action level for soil may be established using the criteria set forth in subsection 1, the most restrictive action level must be used. In no case may the action level be more restrictive than the background concentration of the hazardous substance, hazardous waste or regulated substance.

- If contaminated soil is to be left in place, provide an A through K analysis pursuant to NAC 445A.227 to determine if corrective action is required.

- The presence of 1/2 inch or more of a petroleum substance that is free-floating on the surface of the water of an aquifer, using a measurement accuracy of 0.01 foot (NAC 445A.22735).

- For contaminants in groundwater, compare the maximum contaminant levels (MCLs) listed in the EPA Drinking Water Regulations and Health Advisories to contaminant concentrations detected during the investigation and/or remedial activities (NAC 445A.22735).

- The action level may be set at a level of concentration equal to the background concentration of a hazardous substance, hazardous waste or a regulated substance, if that level of concentration is greater than the maximum contaminant level for that hazardous substance, hazardous waste, or regulated substance.

- In the absence of an MCL, a level of concentration equal to the background concentration of a hazardous substance or an appropriate level of concentration that is based on the protection of public health and safety and the environment. The appropriate level of concentration must be determined by the division using the Integrated Risk Information System, adopted by reference in NAC 445A.2272, or an equivalent method approved by the division. (Note: The equivalent method is generally assumed by NDEP to be EPA Region 9 PRGs).

The NAC does not provide a state action level for TPH in groundwater. The NDEP provided a guidance concentration of 1,000 µg/L in comments to the PA/SI. As a result, 1,000 µg/L has been used consistently as guidance for TPH in groundwater in various reports prepared by the Navy for work conducted at NAS Fallon.

In the absence of an MCL for groundwater, the Navy will use EPA Region 9 PRGs as goals for organic compounds. In the absence of a NAC-specified state action level for soil, the Navy will use EPA Region 9 PRGs as goals for organic compounds.

The PA/SI identified PCB-containing oil and other potentially hazardous liquids stored in aboveground containers at the site as the only waste materials that may have been released to the environment at Site 10.

5.5 NATURE AND EXTENT OF CONTAMINATION

This section first summarizes results of investigations at Site 10, then discusses in detail (in the following subsections) contaminants in soil and groundwater. Investigations at the site include the following:

- Qualitative analysis of soil samples from five locations in the southeast portion of the site to determine impacts to soil from waste storage activities at Site 10

- Qualitative analysis of groundwater test holes to assess the presence or absence of volatile contaminants in vadose-zone soil or LNAPL on the groundwater surface in the vicinity of Site 10

- Quantitative analysis of soil samples from three locations in the northeast portion of the site to determine impacts to soil from waste storage and disposal activities at Site 10
- Groundwater sampling and quantitative analysis from one direct-push sampling location on Site 10 to determine if site activities have contributed contaminants to groundwater beneath the site
- Groundwater sampling from monitoring wells constructed upgradient from Site 10 to determine if contaminants released at Site 16 are migrating onto the site
- Groundwater sampling from monitoring wells constructed downgradient from Site 10 to determine if contaminants released at Site 10 and Site 16 are migrating from Site 10

Results of qualitative and quantitative analytical results for soil and groundwater samples collected within and in the vicinity of Site 10 are summarized in Tables 5-1 through 5-3. One groundwater sample was collected from within the Site 10 boundaries. The remaining groundwater samples were collected from locations upgradient, cross-gradient, and downgradient of Site 10. In general, TPH, VOCs and SVOCs were detected in most of these groundwater samples. The distribution of VOCs and SVOCs in groundwater are indicative of an upgradient source. A review of the areal distribution of these compounds in groundwater indicates that these compounds are within the petroleum plume that originated from Site 16. Analysis of soil samples collected within Site 10 did not contain VOCs or SVOCs at concentrations greater than state action levels, which further supports the conclusion that the VOCs and SVOCs observed in groundwater at Site 10 are the result of an upgradient source.

5.5.1 Qualitative Soil Data

To assess the potential for contaminants released to the environment resulting from waste storage activities at Site 10, soil samples were collected from five shallow soil borings (BH-01 through BH-05) installed in the southeast portion of the site as shown in Figure 2-3. These samples were chemically tested for high-boiling-point hydrocarbons, low-boiling-point hydrocarbons, VOCs, SVOCs, and PCBs. Results of these analyses identified detected concentrations of the VOCs acetone and methylene chloride and the SVOC bis(2-ethylhexyl)phthalate. No other chemicals tested for were reported at detectable concentrations. However, because of method blank contamination associated with the VOC and SVOC analyses, the resultant laboratory data are considered unusable. Therefore, these data are determined to be qualitative. However, results from these analyses are summarized in Table 5-1.

5.5.2 Qualitative Data From Groundwater Test Holes

Qualitative data was initially collected to assess the presence or absence of volatile contaminants in the general vicinity of the Group IV sites, including Site 10. Sampling locations were then selected for quantitative analysis of soil and groundwater samples on the basis of the qualitative results and the regional groundwater flow direction. The sampling locations from which qualitative data were collected were called "groundwater test holes," which consisted of hollow-stem auger borings from which one-time groundwater samples were collected. Each groundwater test hole was screened with the use of a hand-held photoionization detector (PID) to analyze the air space of the open boring. Then, a groundwater sample was collected from the boring, and an aliquot of air from the headspace above the groundwater sample was analyzed with the use of a portable field gas chromatograph (GC). The generated data consisted of "presence or absence" indicators, including detect or nondetect records for each instrument at each sampling location. The rationale and methodology for sampling from the groundwater test holes is described in detail in Appendix C of the RI report.

Nine groundwater test holes were positioned in the vicinity of Site 10. The groundwater test holes provided screening-level data to assess the presence or absence of volatile contaminants that could be related to Site 10 or migrating onto and across Site 10 from upgradient sources. More specifically, results from the groundwater test holes were typically used as yes or no responses to the question "is contamination present or absent?" Different symbols were used on Figure 2-3 for the groundwater test holes to indicate whether volatile contaminants were present or absent during sampling. Contamination was found to be present in all nine of the groundwater test holes installed in the vicinity of Site 10 (Figure 2-3).

5.5.3 Quantitative Soil Data

On-Site Soil Sampling Results

A summary of detected organics in soil is provided in Table 5-1. In 2002, 11 soil samples were collected on site from three direct-push boring locations (10000 through 10002) situated in the northeast portion of Site 10. The soil samples from locations 10000 and 10002 were collected from 2.5 to 3, 5 to 7, 7.5 to 9.5, and 10 to 11.5 feet bgs. The soil samples from location 10001 were collected from 2.5 to 3, 5 to 7, and 7.5 to 9.5 feet bgs. All soil samples were analyzed for PCBs using EPA Method 8082. No PCB compounds were reported at detectable concentrations in any of these 11 soil samples.

Off-Site Soil Sampling Results

During 1991 and 1996, soil samples were collected from four monitoring well locations (MW-28, MW-64, MW-77, and MW-78) installed in the vicinity of Site 10. Wells MW-64 and MW-77 were constructed approximately 900 and 50 feet upgradient from Site 10 respectively, while wells MW-28 and MW-78 were constructed approximately 350 and 200 feet downgradient from Site 10 respectively. One sample was obtained from near the groundwater surface in each of these locations. All soil samples were analyzed for VOCs using either EPA Methods 8240 or 624. The soil sample from upgradient location MW-64 was also tested for SVOCs using EPA Method 8270. In addition, the soil samples collected from locations MW-77 and MW-78 were tested for TPH—extractable (TPH-E) using EPA Method 8015D. The analytical results for chemicals that were detected at least once in these soil samples are summarized in Table 5-1.

TPH-E was detected in 1 of the 2 samples analyzed for TPH. TPH-E was reported in the soil sample collected from near the groundwater surface in upgradient location MW-77 at a concentration of 7,200 mg/kg. This is the only soil sample containing TPH-E at a concentration above the state action level of 100 mg/kg. This TPH-E concentration is believed to be the result of contaminant migration by groundwater transport of petroleum hydrocarbons released at Site 16 and is not the result of waste storage activities at Site 10.

Four soil samples were collected and analyzed for VOCs. The state action levels were not exceeded for any of the four samples with detections (Table 5-1). Methylene chloride was detected in soil samples collected near the groundwater surface from locations MW-64 and MW-28 at concentrations of 0.004 and 0.011 mg/kg, respectively. Well MW-64 is situated approximately 900 feet upgradient from Site 10, while well MW-28 is located approximately 350 feet downgradient from Site 10. Methylene chloride is also considered a suspected laboratory contaminant. Finally, m,p-xylene and o-xylene were detected in the soil sample collected near the groundwater surface from location MW-77 at concentrations of 0.62 and 1.0 mg/kg, respectively. These chemicals are attributed to the TPH-E concentration also detected in this sample. These concentrations are below the state action level for total xylenes of 270 mg/kg (Table 5-1).

Only one soil sample was collected and analyzed for SVOCs. This sample was collected from near the groundwater surface from location MW-64. The only SVOC reported at a concentration above the detection limit in this soil sample was bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was detected at a concentration 2.5 mg/kg, which is below the state action level of 35 mg/kg. This bis(2-ethylhexyl)phthalate detection is a suspected laboratory contaminant.

5.5.4 Groundwater Monitoring

On-Site Groundwater Sampling Results

A summary of detected organics in groundwater is provided in Table 5-2. In 2002, one groundwater sample was collected from direct-push location 10002, located in the eastern portion of the site. This sample was analyzed for petroleum hydrocarbons, VOCs, and SVOCs. TPH-E was detected at an estimated concentration of 10,000 µg/L, which is greater than the guidance concentration of 1,000 µg/L. TPH—purgeable (TPH-P) was detected at 600 µg/L, which is below the guidance concentration. Eleven VOCs were detected in this groundwater sample. 1,1-Dichloroethene, benzene, naphthalene, trichloroethene, and vinyl chloride were detected at concentrations above their respective state action levels. The SVOC 2-methylnapthalene was detected in the groundwater sample from this location at a concentration greater than the state action level. However, the VOC and SVOC compounds detected in the groundwater sample from 10002 were also detected in groundwater samples from upgradient locations at concentrations greater than the state action levels. Based on these observations, the on-site detections are not considered to be a result of Site 10 activities.

Off-Site Groundwater Sampling Results

Groundwater sampling was performed at seven monitoring wells (MW-28, MW-64, MW-65, MW-66, MW-67, MW-77, and MW-78) located in the vicinity of Site 10. Groundwater samples from wells MW64, MW-65, MW-66, MW-67, and MW-77 are considered to represent conditions upgradient from the site, while samples from wells MW-28 and MW-78 represent conditions downgradient from the site. Multiple groundwater samples were obtained from these upgradient and downgradient wells between April 1991 and October 2003 (Table 4-2). Although the suite of chemical analyses varies depending upon sample location, the chemical analyses performed on groundwater samples collected from these seven wells includes petroleum hydrocarbons, VOCs, SVOCs, PCBs and pesticides, total inorganics, and water quality. Table 5-2 provides a summary of detected organics in groundwater samples, and Table 5-3 provides a summary of the detected metals in groundwater samples.

Thirty-eight groundwater samples collected at or in the vicinity of Site 10 were tested for purgeable-range petroleum (as either TPH-P or TPH-gasoline) using EPA Method 8015G. Purgeable-range TPH was detected in 26 of these 38 samples. The detected concentrations were greater than the guidance concentration of 1,000 µg/L in three groundwater samples collected at the upgradient locations MW-65 and MW-77. Sixty-four groundwater samples collected at or in the vicinity of Site 10 were also tested for extractable-range petroleum (as either TPH-E or TPH-diesel or TPH-JP-5) using EPA Method 8015D. Extractable-range TPH was detected in 51 of these 64 samples. The detected concentrations were greater than the guidance concentration of

1,000 µg/L in 32 of these groundwater samples. The samples containing extractable-range TPH at concentrations above the guidance concentration were collected at upgradient locations MW-65, MW-66, MW-67; and at downgradient location MW-28. Lastly, 14 groundwater samples collected at or in the vicinity of Site 10 were tested for heavy end petroleum (as TPH-heavy fraction oil) using Method 8015D. Heavy fraction TPH was detected in 7 of these 14 samples. The detected concentrations were greater than the guidance concentration of 1,000 µg/L in 4 of these groundwater samples. The samples containing heavy fraction TPH at concentrations above the guidance concentration were collected at upgradient locations MW-66 and MW-77 (Table 5-2).

Sixty-two groundwater samples collected at or in the vicinity of site 10 were tested for VOCs using either EPA Methods 8240, 8260, 8020, or 624. Thirty-eight individual VOCs were reported at a detectable concentration in these samples (Table 5-2). At least one VOC was detected in 52 of the 62 groundwater samples collected. The detected concentrations were greater than the respective state action levels for 10 VOCs: 1,1-dichloroethene, 1,2-dichloroethane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, cis-1,2-dichloroethene, naphthalene, trichloroethene, o-xylene, and vinyl chloride. These concentrations were reported in upgradient monitoring wells MW-64, MW-65, MW-66, and MW-77. Only 1,1-dichloroethene, benzene, naphthalene, trichloroethene, and vinyl chloride were detected at concentrations above state action levels in the groundwater sample collected from the on-site location 10002. No VOCs were detected at concentrations above state action levels in the monitoring wells located downgradient from Site 10.

Twelve groundwater samples collected at or in the vicinity of Site 10 were tested for SVOCs using EPA Methods 8270. Ten individual SVOCs were reported at a detectable concentration in these samples (Table 5-2). At least one SVOC was detected in each of the 12 groundwater samples collected. The detected concentrations were greater than the respective state action levels for four SVOCs: 2-methylnaphthalene, bis-(2-ethylhexyl)phthalate, naphthalene, and pentachlorophenol. These concentrations were reported in upgradient monitoring wells MW-64 and MW-65. Only 2-methylnaphthalene and naphthalene were detected at concentrations above state action levels in the groundwater sample collected from the on-site location 10002. No SVOCs were detected at concentrations above state action levels in the monitoring wells located downgradient from Site 10.

In addition, one groundwater sample collected from the upgradient monitoring well MW-67 was tested for pesticides using EPA Method 8080. Pesticides were not reported in this groundwater sample at concentrations above their respective detection limits.

Eighteen groundwater samples collected at or in the vicinity of Site 10 were tested for total inorganics using EPA Method 6010. Fifteen individual inorganics were reported at a detectable concentration in these samples (Table 5-3). The detected concentrations were greater than their respective MCL or EPA Region 9 PRG established for tap water for six inorganic compounds: arsenic, boron, lithium, manganese, molybdenum, and vanadium. These concentrations were reported in upgradient monitoring wells MW-65, MW-66, and MW-77, and in downgradient monitoring wells MW-28 and MW-78. However, all metals were detected at concentrations consistent with naturally occurring background concentrations and are not considered to be a result of Site 10 activities.

Total dissolved solids (TDS) were measured in groundwater samples collected from six locations at or in the vicinity of Site 10. TDS concentrations ranged from 11,400 to 62,100 mg/L, with an average of 38,950 mg/L. All samples collected exceeded the 10,000 mg/L criterion for potability according to NAC 445A.22725.

5.6 CONTAMINANT FATE AND TRANSPORT

Based on historical activities at Site 10, petroleum hydrocarbons, VOC, SVOC, and PCB compounds were suspected contaminants at this site. Qualitative analyses conducted on soil samples collected during 1991 indicated the presence of selected VOCs and SVOCs in shallow soil at the site. However, subsequent quantitative analyses of soil samples collected at the site did not identify any of these compounds in soil at concentrations above state action levels. This indicates that Site 10 activities did not result in a release of contaminants to the environment in sufficient quantities to warrant remedial actions at the site.

Petroleum hydrocarbons (TPH-E) have been detected in one soil sample collected near the groundwater surface from the upgradient location MW-77 at a concentration above the state action level. This concentration of TPH-E in soil near the groundwater surface is interpreted to be the result of groundwater transport of petroleum-related chemicals released at Site 16, which is located approximately 1,000 feet upgradient from Site 10.

Site 16 has been identified as a source of petroleum hydrocarbons reported in groundwater in the vicinity of Site 10. The source(s) of VOCs and SVOCs in groundwater has not been identified. The areal distribution of VOCs and SVOCs suggests that the source(s) of VOCs and SVOCs to groundwater could be Site 10 and or an upgradient site. Analytical results of soil samples collected from Site 10 did not contain VOCs or SVOCs at concentrations above action levels. VOCs and SVOCs in groundwater are distributed within the boundaries of the petroleum hydrocarbon plume that has originated from Site 16. A generalized distribution of contaminants in groundwater is shown on Figure 5-3.

PCBs were identified as a contaminant of concern at Site 10. It was reported that cans of oil containing PCBs were buried at the site. However, these cans were not observed in the subsurface during excavation activities conducted to locate them. PCBs were also not observed in soil samples collected from the site. However, groundwater in the area of Site 10 will be monitored for PCBs for a period of three years. If PCBs are not observed in groundwater in the area of Site 10 at the end of the three year monitoring period, monitoring for PCBs will be terminated.

An interim groundwater remediation system is currently operating to address the groundwater plume that has originated from Site 16. Figure 5-3 shows the location of active groundwater recovery wells that are currently capturing contaminants in groundwater as part of the interim system. Under the interim system, captured groundwater is treated prior to discharge to an infiltration gallery located upgradient of Site 16 and within the capture zone of the groundwater extraction network. Captured groundwater is currently being pumped through two oil/water separators followed by carbon filtration. Carbon filtration is an effective treatment method for the groundwater containing low levels of chlorinated solvents (VOCs) and SVOCs observed at and near Site 10.

To insure that re-infiltrated water meets cleanup goals, system effluent samples are being collected and analyzed for petroleum hydrocarbons, VOCs (EPA Method 8260), and SVOCs (EPA Method 8270). These analytical methods include all of the compounds identified at Site 10. Groundwater monitoring currently being conducted as part of interim system operation includes analyses of samples for VOCs (EPA Method 8260) and SVOCs (EPA Method 8270). Regular operation and maintenance is being performed to insure system performance and monitor remedial progress. Regular monitoring reports are provided to NDEP for review. These monitoring reports indicate that the treatment system is capturing or will capture impacted groundwater beneath Site 10 for treatment.

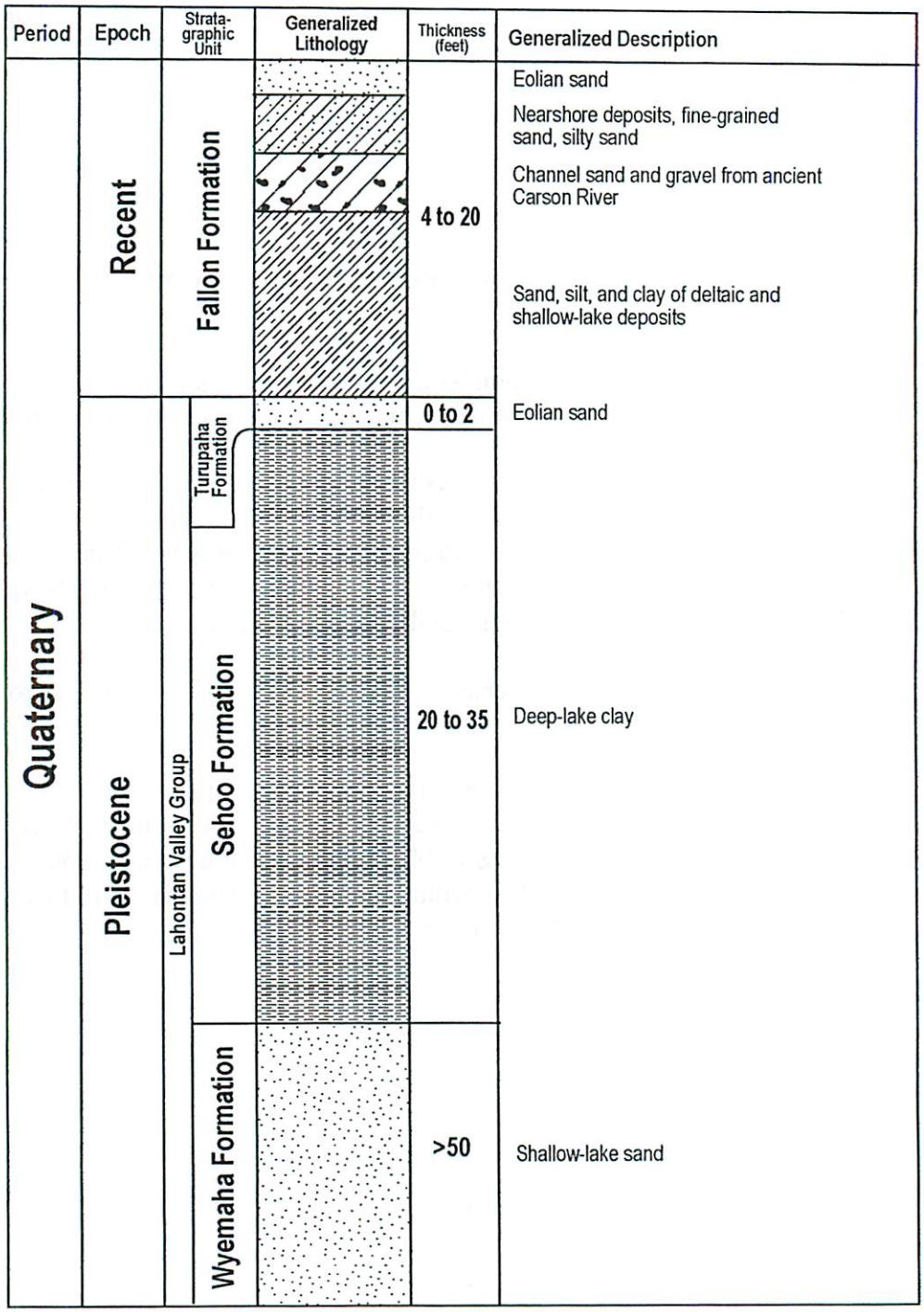
A feasibility study is currently being conducted to assess final remedial system options for Site 16. All of the options being considered for the final Site 16 remedial system include components that will address the low level VOC and SVOC concentrations observed in groundwater at or near Site 10. System performance monitoring of the final remedy for Site 16 and all future ground water monitoring efforts will include monitoring for VOCs and SVOCs to insure that the compounds observed in groundwater at or near Site 10 are effectively addressed.

5.7 BASIS FOR DECISION

The Navy has selected No Further Action as the preferred alternative for Site 10 for the following reasons:

- Quantitative analyses of soil samples did not identify concentrations of suspected contaminants of concern at this site at concentrations above the state action levels.
- Although petroleum hydrocarbons, VOCs and SVOCs were detected in groundwater at concentrations above the state action levels or guidance concentrations, these compounds are associated with releases at Site 16 and releases within the Site 16 groundwater plume. As a result, these contaminants will be addressed as part of the active remedial actions for Site 16.
- The Navy does not expect any change in the use of Site 10, or of the surrounding sites, in the foreseeable future.

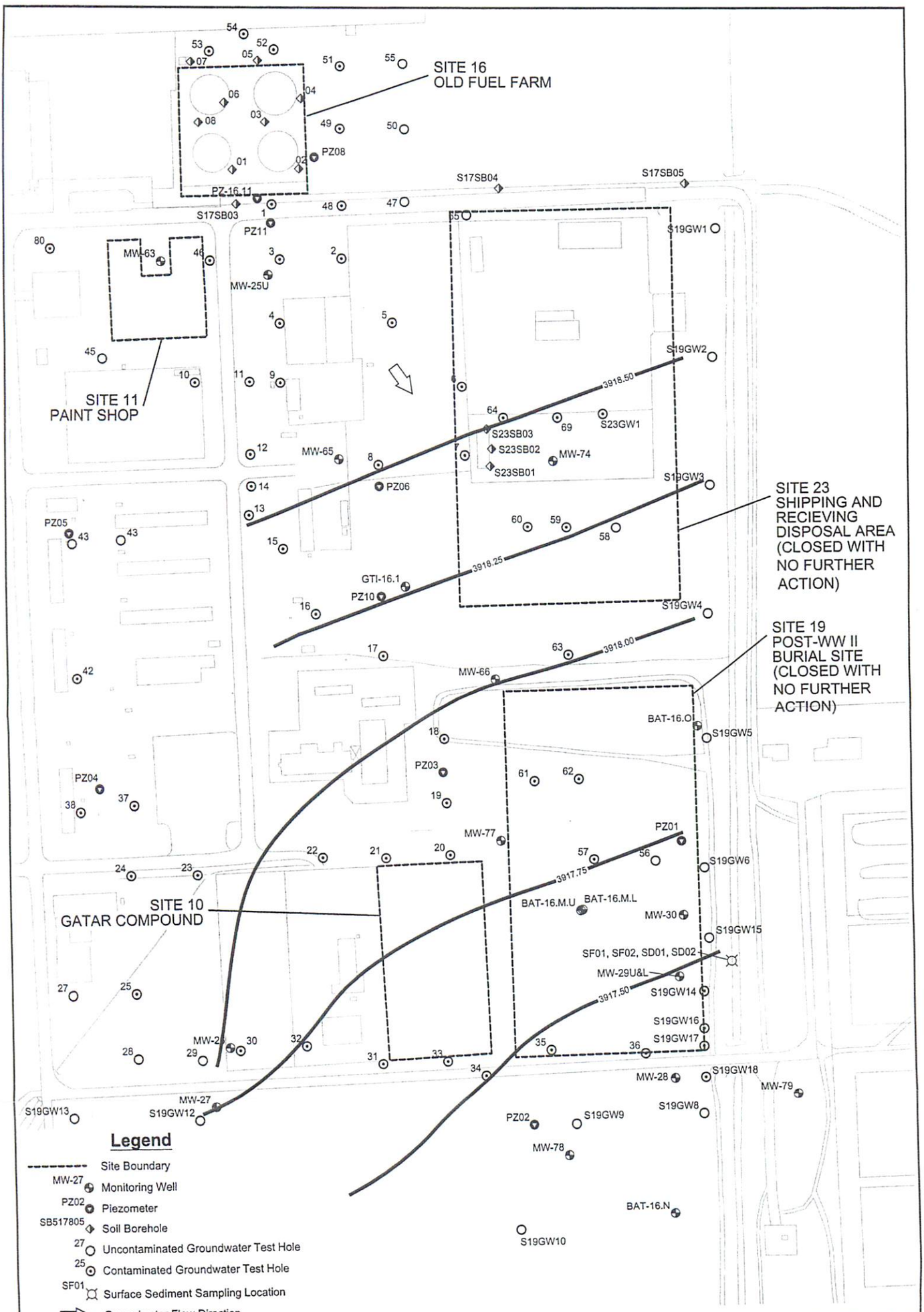
In summary, No Further Action is required for this site. The site is no longer used as a waste storage area. Petroleum hydrocarbons in soil and groundwater at concentrations above state action levels are associated with releases from Site 16. Volatile organic compounds in groundwater at and in the vicinity of Site 10 are within the Site 16 plume and will therefore be addressed as part of the ongoing remedial actions for Site 16.



U.S. NAVY

Figure 5-1
Generalized Stratigraphy of NAS Fallon

Delivery Order 0031
NAS Fallon
DECISION DOCUMENT
SITE 10



U.S. NAVY

0 35 70 140
SCALE IN FEET

Figure 5-2
September 1997 Groundwater
Surface Elevation Contours at Site 10

Delivery Order 0031
NAS Fallon
DECISION DOCUMENT
SITE 10

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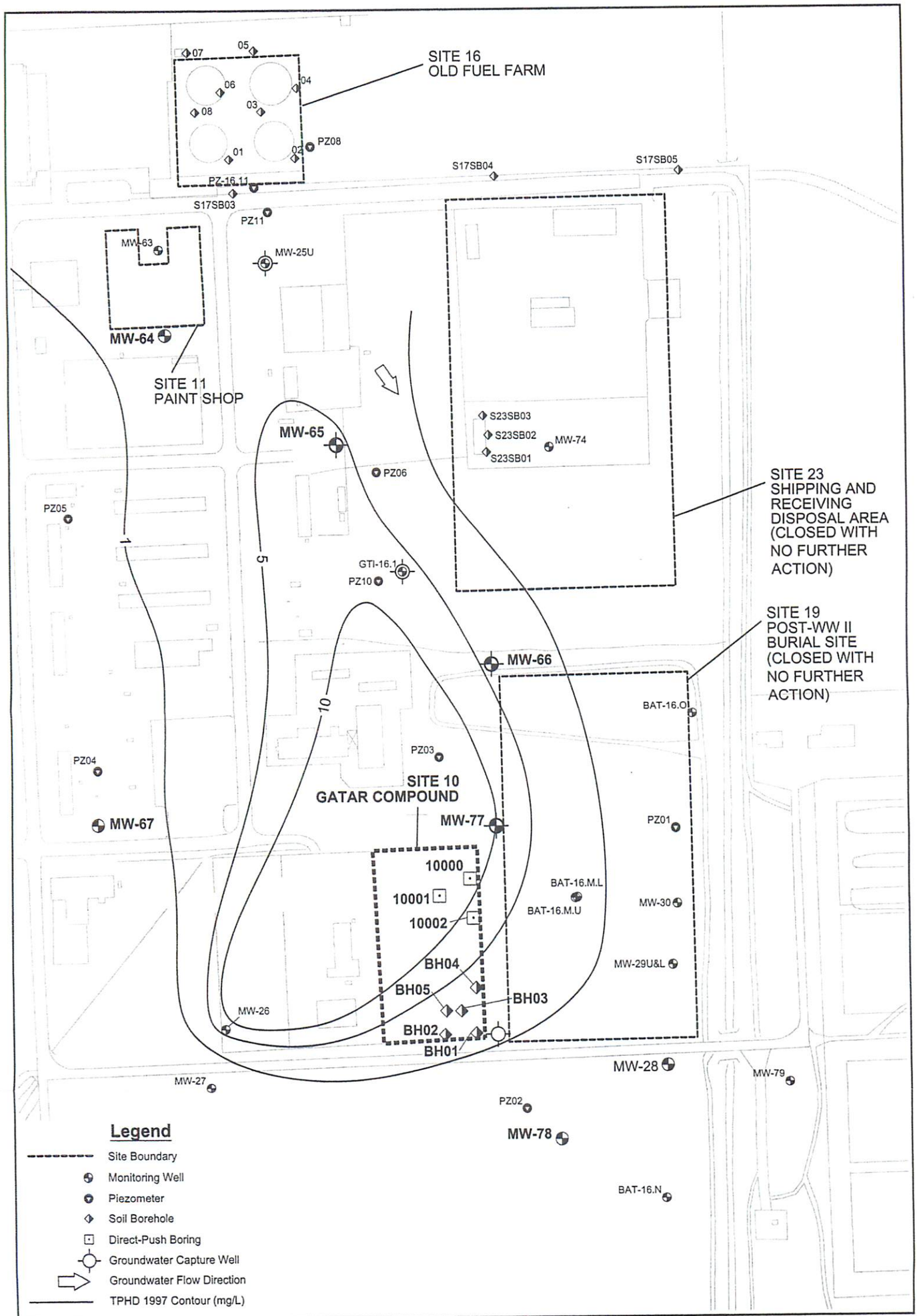

U.S. NAVY	N 0 35 70 140 SCALE IN FEET	**Figure 5-3** **Generalized Distribution of Contaminants in Groundwater**	Delivery Order 0031 NAS Fallon DECISION DOCUMENT SITE 10

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Table 5-1
Summary of Detected Organics in Soil Samples From Site 10, 1991 Through 1996

Analyte	No. of Samples Tested	No. of Detections	Minimum Concentration (mg/kg)	Average Concentration (mg/kg)	Maximum Concentration (mg/kg)	Action Level (mg/kg)	No. of Detections Greater Than Action Level	Location IDs With Detections Greater Than Action Level
Petroleum Hydrocarbons								
TPH-extractable	2	1	7200	7200	7200	100[a]	1	MW-77
Volatile Organic Compounds								
Methylene chloride[b]	4	2	0.004	0.008	0.011	9.1[c]	0	None
m,p-Xylene	2	1	0.62	0.62	0.62	270[c]	0	None
o-Xylene	2	1	1.0	1.0	1.0	270[c]	0	None
Semivolatile Organic Compounds								
Bis(2-ethylhexyl)phthalate	1	1	2.5	2.5	2.5	35[c]	0	None

[a]Nevada Administrative Code
[b]Methylene chloride is a suspected laboratory contaminant.
[c]EPA Region 9 preliminary remediation goals – residential soil

Notes:
mg/kg - milligram per kilogram
TPH - total petroleum hydrocarbon

Table 5-2
Summary of Detected Organics in Groundwater Samples From Site 10, 1991 Through 2003

Parameter	No. of Samples Tested	No. of Detections	Minimum Concentration (µg/L)	Average Concentration (µg/L)	Maximum Concentration (µg/L)	Action Level (µg/L)	No. of Detections Greater Than Action Level	Location IDs With Detections Greater Than Action Level
Petroleum Hydrocarbons								
TPH-purgeable	21	13	61	473	1,100	1,000[a]	1	MW-65
TPH-gasoline	17	13	170	701	1,500	1,000[a]	2	MW-65, MW-77
TPH-extractable	31	23	60	3,836	26,000	1,000[a]	13	MW-28, MW-65, MW-66, MW-67, MW-77, 10002
TPH-diesel	24	24	51.3	11,676	43,000	1,000[a]	18	MW-65, MW-66, MW-77
TPH-JP-5	9	4	470	2,283	7,300	1,000[a]	1	MW-77
TPH-heavy fraction oil	14	7	47	1,907	3,400	1,000[a]	4	MW-66, MW-77
Volatile Organic Compounds								
1,1-Dichloroethane	31	1	0.18	0.18	0.18	811[c]	0	None
1,1-Dichloroethene	40	23	1.57	291	6,500	7[b]	9	MW-66, MW-77, 10002
1,2-Dichloroethane	48	21	1.6	39.59	98	5[b]	16	MW-64, MW-65
1,2-Dichloroethene	3	3	1.0	2	3	5[b]	0	None
1,2-Dichloropropane	31	1	0.14	0.14	0.14	5[b]	0	None
1,2,4-Trimethylbenzene	26	12	0.76	23.44	50	12[c]	7	MW-77
1,3,5-Trimethylbenzene	27	12	0.28	7.64	15	12.3[c]	3	MW-77
2-Butanone	3	1	4.2	4.2	4.2	1,900[c]	0	None
2-Hexanone	6	1	31	31	31	NE	NA	NA
4-Isopropyltoluene	26	14	0.5	1.8	5.17	NE	NA	NA

Table 5-2 (Continued)
Summary of Detected Organics in Groundwater Samples From Site 10, 1991 Through 2003

Parameter	No. of Samples Tested	No. of Detections	Minimum Concentration (µg/L)	Average Concentration (µg/L)	Maximum Concentration (µg/L)	Action Level (µg/L)	No. of Detections Greater Than Action Level	Location IDs With Detections Greater Than Action Level
Acetone	6	4	6.3	10.9	21	608[c]	0	None
Benzene	53	38	0.6	490	18,000	5[b]	29	MW-65, MW-66, MW-77, 10002
Bromoform	32	1	8	8	8	80[b]	0	None
n-Butylbenzene	26	7	0.79	1.74	2.52	243[c]	0	None
sec-Butylbenzene	26	18	0.9	1.61	2.5	243[c]	0	None
tert-Butylbenzene	26	8	0.13	1.73	6.07	243[c]	0	None
Carbon disulfide	9	1	0.17	0.17	0.17	1,040[c]	0	None
Chlorobenzene	31	5	40	50	60	100[b]	0	None
Chloroform	41	3	7	8.33	10	80[b]	0	None
Chloroethane	30	3	0.33	1.78	3	NE	NA	NA
cis-1,2-Dichloroethene	38	19	3	156	2,700	70[b]	2	MW-65
Cyclohexane	3	3	8	76	120	34,700[c]	0	None
Dibromochloromethane	32	1	1.0	1.0	1.0	80[b]	0	None
Ethylbenzene	46	17	0.27	4.2	9	700[b]	0	None
Isopropylbenzene	26	21	2.91	29.8	100	658[c]	0	None
Methyl cyclohexane	3	3	7.5	14.2	18	5,200[c]	0	None
Naphthalene	26	15	3	53	145	6.2[c]	14	MW-66, MW-77, 10002
Propane	16	5	2	2.6	3	NE	NA	NA

Table 5-2 (Continued)
Summary of Detected Organics in Groundwater Samples From Site 10, 1991 Through 2003

Parameter	No. of Samples Tested	No. of Detections	Minimum Concentration (µg/L)	Average Concentration (µg/L)	Maximum Concentration (µg/L)	Action Level (µg/L)	No. of Detections Greater Than Action Level	Location IDs With Detections Greater Than Action Level
n-Propylbenzene	26	10	0.4	1.72	3	243[c]	0	None
Toluene	47	4	0.3	5.33	8	1000[b]	0	None
trans-1,2-Dichloroethene	41	7	0.55	0.96	1.7	100[b]	0	None
Trichloroethene	45	23	0.88	25.6	47	5[b]	14	MW-65, 10002
m,p-Xylene	31	12	0.27	10	21	10,000[c]	0	None
m-Xylene	7	2	16.8	16.8	16.8	10,000[c]	0	None
o-Xylene	38	22	1.1	571	12,000	10,000[c]	1	MW-66
p-Xylene	7	2	17.3	17.3	17.3	10,000[c]	0	None
Vinyl chloride	38	8	1.2	2.26	2.9	2[b]	5	MW-66, MW-77, 10002
Xylenes	23	14	1	13.8	63	10,000[c]	0	None
Semivolatile Organic Compounds								
2-Methylnaphthalene	3	3	3	22.3	55	6.2[c,d]	2	MW-65, 10002
4-Methylphenol	2	1	96	96	96	182	0	None
Bis-(2-ethylhexyl)phthalate	9	7	2	4.57	8	6[c]	1	MW-64
Butylbenzylphthalate	4	2	3	4	5	7,300	0	None
Diethylphthalate	3	1	3	3	3	29,200	0	None
Fluorene	4	3	2	7.5	10	243	0	None
Naphthalene	5	4	3	17.8	60	6.2[c]	1	10002
Pentachlorophenol	7	4	2	9	16	1.0	4	MW-64, MW-65

Table 5-2 (Continued)
Summary of Detected Organics in Groundwater Samples From Site 10, 1991 Through 2003

Parameter	No. of Samples Tested	No. of Detections	Minimum Concentration (µg/L)	Average Concentration (µg/L)	Maximum Concentration (µg/L)	Action Level (µg/L)	No. of Detections Greater Than Action Level	Location IDs With Detections Greater Than Action Level
Phenanthrene	3	2	3	9.5	15	NE	NA	NA
Phenol	3	1	18	18	18	2,190[c]	0	None

[a]Nevada Department of Environmental Protection guidance concentration
[b]Maximum contaminant level
[c]EPA Region 9 preliminary remediation goal – tap water
[d]EPA Region 9 PRG for naphthalene used as a surrogate for 2-methylnaphthalene

Notes:
JP-5 – jet petroleum No. 5
µg/L - microgram per liter
NA - not applicable
TPH - total petroleum hydrocarbons

Table 5-3
Summary of Detected Metals in Groundwater Samples From Site 10, 1991 Through 2003

Parameter	No. of Samples Tested	No. of Detections	Minimum Concentration (mg/L)	Average Concentration (mg/L)	Maximum Concentration (mg/L)	PRG/MCL (mg/L)	Naturally Occurring Background (mg/L)	No. of Detections Greater Than PRG/MCL	Location IDs With Detections Greater Than PRG or MCL
Metals									
Arsenic	3	3	0.67	0.99	1.46	0.01[b]	0.006 to 21	3	MW-28, MW-77, MW-78
Barium	3	1	0.052	0.052	0.052	2[b]	0.0068 to 0.66	0	None
Boron	2	2	58.7	59.7	60.6	7.3[a]	0.57 to 240	2	MW-77, MW-78
Calcium	3	3	7.38	25.9	40.2	NE	1.33 to 616	NA	NA
Copper	3	1	0.022	0.022	0.022	1.3[c]	0.1 to 0.333	0	None
Iron	17	10	0.02	0.192	0.41	11[a]	0.011 to 3.04	0	None
Lithium	2	2	0.791	0.833	0.875	0.73[a]	0.028 to 0.875	2	MW-77, MW-78
Magnesium	3	3	10.9	141	233	NE	0.97 to 812	NA	NA
Manganese	17	17	0.016	0.745	1.3	0.88[a]	0.002 to 8.95	7	MW-65, MW-66
Molybdenum	2	2	1.71	2.69	3.66	0.18[a]	0.023 to 5.2	2	MW-77, MW-78
Potassium	3	3	50.9	336	487	NE	5.63 to 487	NA	NA
Selenium	2	1	0.01	0.01	0.01	0.18[a]	0.002 to 0.22	0	None
Sodium	3	3	2,250	15,450	22,500	NE	128 to 22,500	NA	NA
Strontium	2	2	5.17	5.39	5.61	21.9	0.038 to 8.99	0	None
Vanadium	3	3	0.023	0.182	0.268	0.26[a]	0.007 to 2.6	2	MW-28, MW-78
Water Quality									
Total dissolved solids	6	6	11,400	38,950	62,100	10,000[d]	NA	6	MW-28, MW-65, MW-66, MW-77, MW-78, 10002

Table 5-3 (Continued)
Summary of Detected Metals in Groundwater Samples From Site 10,
1991 Through 2003

[a]U.S. Environmental Protection Agency (EPA) Region 9 preliminary remediation goal – tap water
[b]Maximum contaminant level
[c]EPA action level
[d]Nevada Administrative Code

Notes:
MCL - maximum contaminant level
mg/L - milligram per liter
NA - not applicable
PRG - EPA region 9 preliminary remediation goal

6.0 CURRENT AND POTENTIAL SITE AND RESOURCE USES

NAS Fallon currently serves primarily as an aircraft weapons delivery and tactical air combat training facility. The Navy is expected to maintain NAS Fallon in the foreseeable future. Operations at the GATAR Compound site currently consist of a 90-day accumulation area for hazardous waste prior to its removal for off-station disposal and recycling. NAS Fallon does not expect any change in the use of this land or that of the surrounding sites in the foreseeable future.

The Overview Plan for NAS Fallon includes a discussion of all potentially contaminated areas in the IR Program and their locations. Any future construction projects conducted at Site 10 will be subjected to an environmental review. The Environmental Department at NAS Fallon oversees the environmental review process. Projects are reviewed by the Occupational Safety and Health Office, the Fire Department, the Security Department, the Engineering and Planning Divisions of Public Works, and the Environmental Department. This review process is included in all NAS Fallon planning activities. Information provided by the Environmental Department relates to potential contact with contaminated soil and groundwater as a result of these projects.

Groundwater at the site is not currently used as a drinking water or other water source. The Navy does not expect to use groundwater at this site for any purpose in the foreseeable future.

7.0 SUMMARY OF SITE RISKS

The analytical results from soil sampling at Site 10 have confirmed the absence of potential compounds of concern above the state action levels in soil at Site 10. However, petroleum hydrocarbon (TPH-E) is present in soil near the groundwater surface beneath the upgradient boundary of Site 10 as the result of migration of TPH in groundwater from Site 16. The contaminant plume from Site 16 also results in the presence of VOCs, SVOCs, and TPH in groundwater beneath Site 10 at concentrations above state action levels. Contaminants from Site 16 that are present beneath Site 10 will be addressed through actions at Site 16.

A baseline risk assessment was not performed for Site 10 soils due to the absence of positive analytical results for compounds of concern in samples collected at the site during 1991. This was supported by analyses of soil samples subsequently collected during 2002. In addition, the ground surface at the site is either paved with concrete or gravel covered. The site is currently used for recycling at the station and has not been used as a waste storage facility since 1994. The only route of exposure to soil is through excavation. Exposure to these soils through excavation is controlled by the Overview Plan review process for all construction projects at NAS Fallon.

A baseline risk assessment was performed for the groundwater at the Group IV sites. However, the maximum detected concentration was used for each chemical detected at the Group IV sites. Since the maximum detected concentration did not occur at or in the vicinity of Site 10 for the chemicals detected at the Group IV sites, the risk calculated for the Group IV sites is not representative of the risk at Site 10. Therefore, the results of the risk assessment are not presented here.

However, a qualitative analysis of site risks is possible based on the sampling results. As summarized in Table 5-2, 1,1-dichloroethene, 2-methylnaphthalene, benzene, bis(2-ethylhexyl)phthalate, naphthalene, pentachlorophenol, trichloroethene, and vinyl chloride were the compounds detected in on-site groundwater at concentrations above the state action levels. Since the concentrations for these compounds exceed the state action levels, risks due to exposure to these chemicals may be unacceptable. However the lateral extent of these compounds in groundwater is contained within the petroleum hydrocarbon plume that has originated from Site 16. Therefore, the risk posed by these compounds in groundwater at or in the vicinity of Site 10 will be addressed through ongoing remedial actions for Site 16.

The risks posed by Site 10 will be mitigated via the ongoing remedial actions relative to the Site 16 groundwater plume. Therefore, the preferred alternative for Site 10 is No Further Action.

8.0 STATUTORY AUTHORITY FINDING

TPH-E was detected in soil near the upgradient boundary of Site 10 at a concentration above the state action level. TPH-E in soil at this location was found near the groundwater surface and is considered to be a result of smearing of the petroleum hydrocarbon plume from Site 16. Petroleum hydrocarbon constituents observed in groundwater at and in the vicinity of Site 10 are also considered to be a result of the Site 16 plume. Volatile and semivolatile compounds 1,1-dichloroethene, 2-methylnaphthalene, benzene, bis-(2-ethylhexyl)phthalate, naphthalene, pentachlorophenol, trichloroethene, and vinyl chloride were detected at concentrations above the state action levels in groundwater at and in the vicinity of Site 10. The lateral distribution of the VOCs and SVOCs in groundwater at and in the vicinity of Site 10 are within the Site 16 petroleum plume boundaries. The ongoing remedial actions relative to the Site 16 plume will address the VOC and SVOC impacts to groundwater observed at and in the vicinity of Site 10. As a result, the risks associated with VOCs and SVOCs in groundwater will be mitigated. Accordingly, no further action is required for Site 10. This action is in accordance with and complies with applicable statutes and regulations.

9.0 DOCUMENTATION OF SIGNIFICANT CHANGES

No public comments were received during the public comment period. As a result, there were no significant changes to the Proposed Plan or this decision document.

10.0 BIBLIOGRAPHY

This document was prepared with the use of information contained in the Administrative Record for Site 10, GATAR Compound, NAS Fallon, Nevada. The Administrative Record is available at NAS Fallon; the Churchill County Public Library in Fallon, Nevada; the University of Nevada Reno Library in Reno, Nevada; and at Engineering Field Activity, West, Offices in Daly City, California. The primary documents used as sources of the information contained in this decision document are listed below.

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APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Notice of the public comment period was published in the *Lahontan Valley News* on November 17 and 18, 2004. The public comment period extended from November 15, 2004 through December 15, 2004. The public meeting presenting the Proposed Plan was held at the Agricultural Service Center, on November 18, 2004. As of December 20, 2004, the Navy had received no public comments.