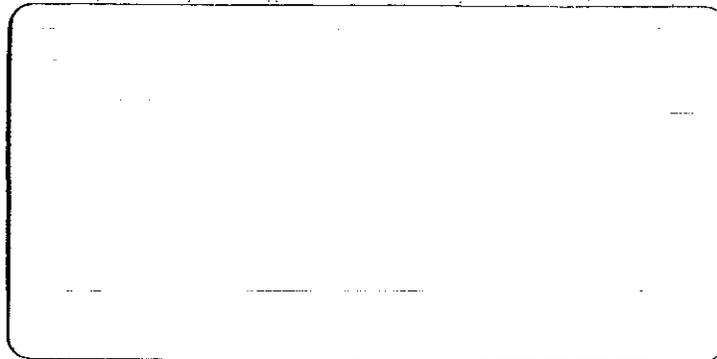




**Comprehensive Long-Term
Environmental Action Navy (CLEAN) for
Pacific Division,
Naval Facilities Engineering Command
Pearl Harbor, Hawaii**



Comprehensive Long-Term Environmental Action Navy

CLEAN

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**NAVAL AIR FACILITY (NAF) MIDWAY ISLAND
LAND USE RESTRICTIONS**

Prepared for:

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SECTION 1 INTRODUCTION

The purpose of this document is to identify areas subject to land use restrictions following transfer of Naval Air Facility (NAF) Midway Island from the U.S. Navy (Navy) to the U.S. Fish and Wildlife Service (USFWS). This document is an attachment to the Transfer Memorandum of Understanding (MOU) (U.S. Navy and Department of the Interior 1996) signed by the Navy and the USFWS on May 22, 1996. The land use restrictions and the associated responsibilities are referenced in Sections IV.A.6, IV.B.6, and IV.C.13 of the MOU.

Potential hazardous material release sites on Midway were investigated by the Navy under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). All identified sites were investigated, and remedial actions were taken as required by agreement of the Midway BRAC Cleanup Team (BCT). The land use restrictions identified in this document are a result of environmental findings and remedial actions taken on Midway prior to June 30, 1997, and are summarized in the Closeout Base Realignment and Closure (BRAC) Cleanup Report.

Because the primary receptors for contaminants on Midway are seabirds, the BCT and Natural Resource Trustees determined that contaminated media or waste present at 4 feet below ground surface (bgs) or greater are inaccessible to burrowing birds and other seabirds. Therefore, different cleanup levels for contaminated media on Midway were established at depths above and below 4 feet bgs (EPA 1996 a, b, and c). Areas identified for land use restrictions are former landfills or areas where contamination or solid waste was left in place at or below 4 feet bgs. The restrictions were placed on these sites to avoid future exposure of human or wildlife receptors to potentially contaminated soil or ground water. Failure to comply with these land use restrictions shall result in a shift of responsibility for the site from the Navy to the USFWS as provided in the MOU.

SECTION 2 LAND USE RESTRICTIONS

Land use restrictions limit activities on certain sites to avoid exposing humans and wildlife to potentially contaminated media and materials. Each affected site, the type of contamination, and the nature of the land use restriction are described below. Restricted areas were not enclosed by physical barriers (e.g., fences) because physical barriers can be hazardous to wildlife. Wooden stakes were used to mark restricted areas; however, these markers are not permanent. The USFWS requested that the use restricted areas be recorded with latitude and longitude coordinates using a global positioning unit (GPS). The USFWS differential GPS unit was used to collect the latitude and longitude coordinates for the use restricted areas. Unfortunately, many of the surveyors stakes were missing due to human and bird activities on the islands. As a result the GPS readings were not made in exactly the same areas. Some of the GPS locations cover a larger area to take into account the accuracy of the USFWS GPS unit, between 15 and 22 feet. Use restricted areas without obvious landmarks (roads, buildings, etc) were made considerably larger to conservatively estimate areas with potential contamination. Due to the differences in GPS site boundaries and previously surveyed boundaries, only the GPS units are presented. All sites and areas with restrictions are shown on Maps 1 and 2, and the restrictions are summarized in Table 2-1. GPS coordinates for each of the sites on Sand and Eastern Islands are listed in Tables 2-2 and 2-3 and on Maps 1 and 2, respectively.

2.1 LANDFILLS AND DISPOSAL AREAS

Land use restrictions were placed on four landfills and one asbestos disposal area (Sites 1, 2, 4, and the two new Bulky Waste Landfills [BWLFs]) on Midway to limit exposure to potentially contaminated media. The four landfills contain either municipal or bulky solid waste (construction debris); the asbestos disposal area contains asbestos roofing materials. The landfills and asbestos disposal area have been operationally closed and covered with clean soil as described herein. The Navy is responsible for repairs to the soil covers resulting from natural occurrences. Normal island maintenance similar to

Table 2-1
Sites with Use Restrictions on NAF Midway Island

Site	Site Name	Contaminants of Concern	Current Status	Use Restriction
01	Old Bulky Waste Landfill	PCBs, pesticides, and PAHs	Closed and covered.	No excavation or soil disturbance resulting from human activities that could compromise the landfill cover is permitted.
02	Runway Landfill	Municipal waste	Closed and covered.	No excavation or soil disturbance resulting from human activities that could compromise the landfill cover is permitted.
04	New Asbestos Disposal Area	Asbestos	Closed and covered.	No excavation or soil disturbance resulting from human activities that could compromise the landfill cover is permitted.
09	Pesticide Storage Former Building 629	PCBs, DDT, and DDE	PCB- and pesticide-contaminated soil removed, potential for contamination deeper than 4 ft	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
12	Communication Facility Buildings 9101 & 9102	PCBs and petroleum	Building demolished	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
13	Buildings 9301, 9302, 9303	DDT and DDE	Building demolished	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
20	Building 354 Old Power Plant	PCBs and petroleum	PCB-contaminated soil removed, potential for contamination deeper than 4 ft	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
24	Power Plant Building 9123	PCBs	Building demolished	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
34	Pesticide Shop Building 361	Pesticides	Pesticide-contaminated soil removed, potential for contamination deeper than 4 ft	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
53	Building 348	PCBs, DDT, and DDE	Building demolished	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
Area 354	Superblock/Area 354	PCBs and petroleum	Petroleum-contaminated soil left in place deeper than 4 ft	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.

Table 2-1
Sites with Use Restrictions on NAF Midway Island

Site	Site Name	Contaminants of Concern	Current Status	Use Restriction
17, 81, 84	Fuel Farm	Petroleum	Petroleum-contaminated soil left in place deeper than 4 ft	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
-	New Bulky Waste Landfill Eastern Island	Demolition debris	Closed and covered.	No excavation or soil disturbance resulting from human activities that could compromise the landfill cover is permitted.
-	New Bulky Waste Landfill Sand Island	Demolition debris	Closed and covered.	No excavation or soil disturbance resulting from human activities that could compromise the landfill cover is permitted.
18	Segment "V" of Fuel Pipeline	Petroleum	Potential petroleum-contaminated soil left in place at greater than 4 ft bgs	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
76	Galley/Building 3502	Petroleum	Potential petroleum-contaminated soil left in place at greater than 4 ft bgs	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.
25	Outfall 6 Inner Harbor	Petroleum	Potential petroleum-contaminated soil left in place at greater than 4 ft bgs	No excavation or soil disturbance deeper than 4 ft. resulting from human activities is permitted.

ft
bgs
AST
UST
FIVE
PCB
Bldg.

feet
below ground surface
Aboveground Storage Tank
Underground Storage Tank
Fluid Injection with Vacuum Extraction
Polychlorinated biphenyl
Building

Table 2-2
Global Positioning System (GPS) Coordinates for Sites on Sand Island

IR Site	Stake	Site/Building	GPS Coordinates (feet)	
			North	West
1	1	Old Bulky Waste Landfill	28 12 08.94	177 22 31.82
1	2		28 12 11.49	177 22 25.08
1	3		28 12 58.71	177 22 24.60
2	1	Runway Landfill	28 12 28.31	177 21 50.63
2	2		28 12 29.52	177 21 55.55
2	3		28 12 33.42	177 21 53.64
2	4		28 12 31.89	177 21 49.47
4	1	New Asbestos Disposal Area	28 12 35.50	177 21 43.77
4	2		28 12 34.92	177 21 43.36
4	3		28 12 36.66	177 21 40.94
4	4		28 12 36.11	177 21 40.59
9	1	Pesticide Storage Former Building 629	28 12 36.51	177 22 29.50
9	2		28 12 36.94	177 22 28.75
9	3		28 12 37.76	177 22 30.57
9	4		28 12 38.19	177 22 29.59
20	1	Building 354	28 12 35.14	177 22 20.63
20	2		28 12 35.70	177 22 21.26
20	3		28 12 35.43	177 22 21.34
20	4		28 12 34.82	177 22 21.12
34	1	Pesticide Shop / Building 361	28 12 35.70	177 22 17.62
34	2		28 12 35.22	177 22 18.63
34	3		28 12 34.05	177 22 17.68
34	4		28 12 34.47	177 22 16.77
53	1	Building 348	28 12 31.82	177 22 26.28
53	2		28 12 32.42	177 22 25.37
53	3		28 12 32.87	177 22 27.42
53	4		28 12 33.74	177 22 26.09
LF	1	New Bulky Waste Landfill	28 12 51.59	177 22 51.57
LF	2		28 12 50.70	177 22 54.72
LF	3		28 12 52.82	177 22 55.38
LF	4		28 12 52.40	177 22 57.08
LF	4a		28 12 52.41	177 22 56.22
LF	4b		28 12 52.83	177 22 56.20
LF	5		28 12 53.76	177 22 57.38
LF	6		28 12 56.53	177 22 57.47
LF	8 (7)		28 12 57.79	177 22 53.74
LF	9 (8)		28 12 54.81	177 22 52.63
G	1		Galley /Bldg 3502	28 12 43.84
G	2	28 12 44.11		177 22 31.87
G	3	28 12 44.69		177 22 30.30
G	4	28 12 44.19		177 22 29.96

**Table 2-2
Global Positioning System (GPS) Coordinates for Sites on Sand Island**

IR Site	Stake	Site/Building	GPS Coordinates (feet)	
			North	West
O	1	Outfall 6	28 12 36.07	177 22 06.37
O	2		28 12 36.32	177 22 07.07
O	3		28 12 36.97	177 22 06.74
O	4		28 12 36.77	177 22 06.03
SB	1	Superblock/Area 354	28 12 32.31	177 22 21.11
SB	2		28 12 32.57	177 22 24.65
SB	3		28 12 34.21	177 22 25.88
SB	4		28 12 35.36	177 22 23.79
SB	5		28 12 37.24	177 22 22.10
SB	6		28 12 38.91	177 22 19.62
SB	7		28 12 40.36	177 22 19.29
SB	8		28 12 38.04	177 22 17.69
SB	9		28 12 35.22	177 22 18.63
F	1	Fuel Farm	28 13 01.19	177 22 08.20
F	2		28 12 55.86	177 22 10.26
F	3		28 12 54.64	177 22 11.19
F	4		28 12 55.69	177 22 19.23
F	5		28 12 48.42	177 22 15.73
F	6		28 12 46.67	177 22 17.80
F	7		28 12 53.06	177 22 22.41
F	8		28 12 50.60	177 22 25.15
F	9		28 12 49.18	177 22 28.05
F	10		28 12 54.87	177 22 33.40
F	11		28 13 02.38	177 22 31.20

**Table 2-3
Global Positioning System (GPS) Coordinates for Sites on Eastern Island**

IR Site	State	Site/Building	GPS Coordinates (feet)	
			North	West
12	1	Communication Facility Buildings 9101, 9102	28 12 50.21	177 19 45.72
12	2		28 12 51.93	177 19 44.52
12	3		28 12 50.86	177 19 41.19
12	4		28 12 48.38	177 19 43.77
13	1	Buildings 9301, 9302, 9303	28 12 32.03	177 19 30.18
13	2		28 12 32.29	177 19 31.76
13	3		28 12 31.25	177 19 32.34
13	4		28 12 31.03	177 19 30.15
24	1	Power Plant Building 9123	28 12 34.38	177 19 04.54
24	2		28 12 35.36	177 19 05.58
24	3		28 12 34.60	177 19 06.44
24	4		28 12 33.42	177 19 05.82
L	1	New BWLF Eastern Island	28 12 33.28	177 19 31.21
L	2		28 12 36.26	177 19 34.71
L	3		28 12 35.31	177 19 37.73
L	4		28.12 31.25	177 19 32.34

other areas of the island (i.e., ground maintenance to promote habitat and protecting island infrastructure) is the responsibility of the USFWS. Repairing damage to the soil covers from natural erosion is the responsibility of the Navy. Most bird nesting and burrowing activities are expected to have a negligible impact on the soil covers. These sites will be used for wildlife habitat. Each of the sites is described below. No human disturbance that causes erosion or compromises the soil cover is permitted at the landfill sites.

2.1.1. Land Use Restrictions

Prohibited activities within the landfill footprints include compromising the integrity of landfill or soil cover, changing the intended usage of the landfill, and modifying or altering the landfill in any way that may adversely affect the landfill area or release or expose subsurface waste. Such actions shall transfer the responsibility for the damage to the landfill from the Navy to the USFWS as provided in the MOU.

2.1.2 Old Bulky Waste Landfill (Site 1)

The old BWLF (Site 1) is on a peninsula that extends into the atoll lagoon from the south side of Sand Island (Map 1). The BWLF was investigated under the Installation Restoration (IR) Program for possible contamination. Scrap metal and burned wood debris were identified during sampling. Low levels of PCBs, pesticides, and polycyclic aromatic hydrocarbons (PAHs) were detected in the subsurface soils and ground water onsite. Upon closure of the BWLF, a 2.5- to 4-foot-thick cover of clean soil was installed to eliminate the potential for burrowing birds to contact contaminated soils. Land use restrictions were placed on the landfill site to limit activities that could compromise the landfill cover and expose potentially contaminated media.

2.1.3 Runway Landfill (Site 2)

The Runway Landfill (Site 2) is on the southeastern end of Sand Island (Map 1). The Runway Landfill was the municipal landfill, which was investigated under the IR Program,

and long-term ground-water monitoring was completed in May 1998. Negligible risk to terrestrial ecological receptors was identified in the SI. Only surficial metal debris and very low levels of metals, PAHs, pesticides, and PCBs were identified outside the active portion of the landfill, and do not pose a risk to human or ecological receptors. Therefore, only the landfill area shown on Map 1 was covered with 1.5 to 4.0 feet of clean fill upon closure to eliminate the potential for burrowing birds to contact landfill waste. The use restriction for the landfill only applies to the landfill area shown on Map 1 (Tables 2-1 and 2-2).

2.1.4 New Asbestos Disposal Area (Site 4)

The New Asbestos Disposal Area (Site 4) is at the eastern tip of Sand Island and contains corrugated asbestos roofing material. The disposal area is approximately 18,000 square feet in size. The SI investigation did not identify any risks to human health or the environment; however, the disposal area was covered with an additional 4 feet of clean fill to minimize the potential for burrowing birds to penetrate the original soil cover over the asbestos.

2.1.5 New Bulky Waste Landfill, Eastern Island

The New BWLF on Eastern Island is a demolition debris landfill; it is on the western edge of Runway 12-30 just below the intersection with Runway 6-24 (Map 2). Demolition-related debris including concrete, metal debris, and asbestos were placed in this landfill. The landfill was covered with 4 feet of soil upon closure in December 1995. The soil cover was then revegetated with native and indigenous plants.

2.1.6 New Bulky Waste Landfill, Sand Island

The New BWLF on Sand Island (Map 1) is also considered a demolition debris landfill; however, this landfill also contains a Corrective Action Management Unit (CAMU) where solidified PCB-, DDT-, and petroleum-contaminated soil were placed. The locations of each of the types of materials disposed of in this landfill are identified in an Action Memorandum. In addition to the debris identified in the Action Memorandum, metal debris excavated from the Rusty Bucket area in April 1998 was placed in the New BWLF next to

the asbestos cell. A 4-foot cover of clean soil was placed over the landfill upon closure to limit the potential for burrowing birds to contact landfill waste. In addition, a surficial sprinkler system was installed to aid revegetation of the landfill.

2.2 PCB- AND PESTICIDE-CONTAMINATED SOIL REMOVAL SITES

PCB- and/or pesticide-contaminated soils with concentrations above established cleanup levels were removed from seven different sites where potential releases were suspected on both Sand and Eastern Islands that require a land use restriction. During cleanup excavations, confirmation sampling was routinely completed in the top 4 feet of soil; however, sampling below 4 feet was not generally completed unless there was an indication in the initial investigation of significant contamination at depth. Due to the immobility of these compounds in soil, contamination below 4 feet was not considered available to ecological and human receptors. Each site where PCB and pesticide-contaminated soil was excavated is described below.

2.2.1 Land Use Restrictions

The land use restrictions for all sites where PCBs or pesticides were cleaned up during BRAC activities are the same. Excavation or soil disturbance that results from human activities deeper than 4 feet bgs at sites where contaminated soil was removed are prohibited. Maps 1 and 2 identify the locations and coordinates for all areas where removal actions were implemented. Any activities that expose potentially contaminated soil within the site footprints, currently buried beneath 4 feet of soil shall transfer the responsibility for the site from the Navy to the USFWS as provided in the MOU.

2.2.2 Pesticide Storage, Former Building 629 (Site 9)

Building 629 (Site 9) was a pesticide storage building until it was destroyed by fire several years ago, leaving only a concrete slab. PCBs, DDT, and DDE were identified in surface soil samples collected during the SI investigations. Approximately 668 cubic yards (cy) of PCB-, DDT-, and DDE-contaminated soil within 4 feet of the ground surface was removed.

Clean soil was backfilled into areas where contaminated soil was removed. Soil beneath the concrete slab and areas where contaminated soil was removed are prohibited from disturbance below 4 feet that results from human activities (Map 1).

2.2.3 Communication Facility, Buildings 9101 and 9102, Eastern Island (Site 12)

Site 12 was a microwave communications complex with both transmitter and generator buildings. Two underground storage tanks (USTs) and one aboveground storage tank (AST) were removed from the site. Surface soils with up to 57 ppm PCBs were identified during the SI (Ogden 1996). Approximately 270 cy of PCB-contaminated soil were removed from within 4 feet of ground surface. The area was then backfilled with clean soil, and the buildings were demolished. Areas where soil was removed are prohibited from any disturbance below 4 feet that results from human activities (Map 2).

2.2.4 Communication Facility, Buildings 9301, 9302, and 9103, Eastern Island (Site 13)

Site 13 was a communication facility with transmitter and generator buildings. DDT and DDE were identified at concentrations up to 9 ppm in the surface soil onsite (Ogden 1996). Approximately 150 cy of DDT- and DDE-contaminated soil was removed from within 4 feet of ground surface. The area was then backfilled with clean sand, and the buildings were demolished. Areas where soil was removed are prohibited from any disturbance below 4 feet that results from human activities (Map 2).

2.2.5 "Old" Power Plant, Building 354 (Included in Superblock) (Site 20)

The "Old" Power Plant (Site 20) had several transformers and generators. PCB-contaminated surface soil was identified on the east side of Building 354 (Map 1). Approximately 670 cy of PCB-contaminated soil was removed within 4 feet of ground surface in 1996. In addition, a 20 -by 20-foot by 1-foot-thick quantity of PCB-contaminated soil east of Building 354 was removed in May 1997. Both of these areas were between the points identified on Map 1 and Building 354. Soil disturbance below

4 feet that results from human activities in this area is prohibited. In addition, there are other restrictions in this area due to the Area 354 petroleum contamination described in Section 2.3. The building was not demolished because it is protected as a historically significant resource.

2.2.6 Power Plant, Building 9123, Eastern Island (Site 24)

Oil-filled circuit breakers, leaking drums, and two 800-gallon transformers were identified in Building 9123 (Site 24). Surface soil sampling conducted during the SI identified PCB concentrations up to 420 ppm (Ogden 1996). Approximately 275 cy of PCB-contaminated soil was removed within 4 feet of the ground surface onsite. The site was backfilled with clean soil, and the building was demolished in 1995. Human activities that result in soil disturbance below 4 feet are prohibited in areas where PCB-contaminated soil was removed as shown on Map 2.

2.2.7 Pesticide Shop, Building 361 (Site 34)

Building 361 (Site 34), a former electrical substation, was subsequently used to store and mix pesticides. DDT and DDE were detected at maximum concentrations of 6.4 ppm and 2.8 ppm, respectively, in surface soils onsite (Ogden 1996). Eighty-seven cy of soil within 4 feet of ground surface was removed from the site, and the area was backfilled with clean soil. Soil disturbance resulting from human activities that could expose potentially contaminated soil below 4 feet are prohibited in this area (Map 1).

2.2.8 Public Works/Administration Building 348 (Site 53)

Discarded electrical parts were identified behind Building 348 (Site 53) during the SI investigation. PCB-, DDT-, and DDE-contaminated surface soil was identified at maximum concentrations of 30 ppm, 9.1 ppm, and 5.7 ppm, respectively, around the building (Ogden 1996). Approximately 150 cy of contaminated soil was removed within 4 feet of ground surface onsite, the area was backfilled with clean soil, and the building was

demolished. Soil disturbance that results from human activities below 4 feet are prohibited in the area around the former building which is shown on Map 1.

2.3 SITES WITH POTENTIAL SUBSURFACE PETROLEUM CONTAMINATION BELOW FOUR FEET

No soil disturbance that results from human activities is permitted in several areas with potential subsurface petroleum contamination on Sand Island. Two areas, the Fuel Farm and Area 354, where Fluid Injection with Vacuum Extraction (FIVE) systems were installed, have underground piping as well as potential subsurface soil and ground-water petroleum contamination. Other areas include sites where UST removal actions were performed or petroleum contamination associated with pipelines was left in place below 4 feet. The land use restrictions for these sites prohibit soil disturbance deeper than 4 feet, to protect against human and wildlife exposure to petroleum-impacted soil in these areas. In addition, ground water in these areas shall not be used for drinking or potable distribution. Map 1 shows the locations of potential subsurface petroleum contamination. Any activities that expose potentially contaminated soil within the site footprints, currently buried beneath 4 feet of soil shall transfer the responsibility for the site from the Navy to the USFWS as provided in the MOU.

2.3.1 Fuel Farm

A FIVE system was installed at Fuel Farms 1, 3, and 4 (Sites 84, 17, and 81, respectively) to remove subsurface petroleum product onsite. Extensive subsurface piping, vertical and horizontal wells, and knockout tanks were placed onsite as part of the system (Map 1). All aboveground equipment and piping have been removed, but most subsurface structures were left in place after the shutdown of the FIVE system. Most petroleum product was removed from the ground water; however, there was a considerable amount of petroleum-contaminated soil left below 4 feet onsite. Fourteen vertical wells remain onsite to monitor product and water levels. These wells will not be disturbed until the monitoring is complete. Soil disturbance that results from human activities below 4 feet are prohibited

within the Fuel Farm FIVE system boundary to avoid potential exposure of receptors to contaminated soil.

2.3.2 Area 354

A FIVE system was installed around Building 354 and the surrounding area to remediate subsurface petroleum contamination. Vertical and horizontal wells, piping, etc., were installed at various depths throughout Area 354 (Map 1). All aboveground equipment and piping have been removed, but most subsurface equipment was left in place after system shutdown. Six vertical wells were also left in place for future monitoring onsite. Petroleum-contaminated soil and ground water below 4 feet may be left onsite. Therefore, soil disturbance that results from human activities below 4 feet are prohibited to avoid exposure of receptors to potentially contaminated media. In addition, the 6 wells remaining onsite are not to be disturbed until monitoring is completed.

2.3.3 Pipeline Segment "V"

One soil sample from pipeline segment "V," located near the cargo pier, reported 8,900 ppm total petroleum hydrocarbons (TPH), quantified as diesel fuel from greater than 4 feet bgs. Due to the depth of the sample, this contaminated soil was left in place. Therefore, soil disturbance below 4 feet that results from human activities in this area are prohibited. This will reduce the possibility of human or wildlife exposure to the contaminated soil. The area of this contamination is included within the Fuel Farm perimeter (Map 1, Table 2-2)

2.3.4 Galley / Building 3502

Subsurface petroleum-contamination behind the Galley (Site 76) has been remediated with the exception of approximately 20 cy of soil between Buildings 3524 and 3502 (Map 1). The 20 cy of soil exceeds the cleanup level of 1,000 ppm TPH-gasoline or 2,000 ppm TPH-diesel. Due to the depth and location, the contaminated soil will not represent a risk to human health or wildlife receptors. However, activities that disturb soil below 4 feet could

expose receptors to the contaminated soil. Therefore, human activities that could disturb soil below 4 feet around the contamination are prohibited.

2.3.5 Outfall 6

This storm drain discharges from Building 354 to Outfall 6 in the southwest corner of the Inner Harbor. Petroleum product and contaminated water were found within the storm drain. The water was pumped from the line, and the outfall was cleaned out and sealed at the manhole closest to the harbor. Two areas with petroleum-contaminated soil were identified near the manhole closest to the harbor at approximately 5 feet bgs. Approximately 40 cy of petroleum-contaminated soil was excavated from one of the locations. However, 30 cy of soil greater than 1,000 ppm gasoline or 2,000 ppm diesel remains at depth onsite (Map 1). Due to the depth and distance from the Inner Harbor, (50 feet), this soil represents a negligible risk to human health and the environment. However, soil disturbance that results from human activities below 4 feet could potentially expose receptors to contaminated soil. Therefore, activities that could disturb soil below 4 feet and within a 10-foot radius of the contamination are prohibited by the land use restriction.

SECTION 3 SUMMARY

The land use restrictions for the landfill sites and areas with potential subsurface PCB, pesticide, and petroleum contamination were established to minimize potential exposure to human and wildlife receptors. Land use restrictions prohibit all soil disturbance that could compromise soil covers that results from human activities at the landfills and new asbestos disposal area. Human activities that could expose contamination buried 4 feet or more below ground surface at the other sites are also prohibited. Although the contaminants are expected to degrade through time, the amount and rate of degradation are unknown. Therefore, these land use restrictions will remain in place in perpetuity to protect human and wildlife receptors.

Activities on Midway that violate these land use restrictions will be reported to the Navy by the USFWS in a timely manner, and a determination of the extent of responsibility will be made by the Navy and USFWS.

SECTION 4
REFERENCES

U.S. Environmental Protection Agency (EPA). 1995. Memorandum from Mark Ripperda, EPA, Region 9, to Jeff Yamamoto, BRAC Environmental Coordinator, PACDIV, concerning Cleanup and Disposal of Soils Contaminated with DDT, DDD, and DDE. November 13, 1995

_____. 1996a. Letter in response to the Memorandum of Understanding concerning Midway Islands from Julie Anderson, Director of Federal Facilities Cleanup Office. March 21, 1996.

_____. 1996b. Letter on the Remediation of Leaking Underground Storage Tanks (LUSTs) on NAF Midway, from Patricia Eklund, Chief of Office of Underground Storage Tanks. May 14, 1996.

_____. 1996c. Letter of Approval :PCB Remediation at Midway Naval Air Facility from David P. Howekamp, Director of Air and Toxics Division. August 8, 1996.

Department of the Navy and Department of the Interior. 1996. Memorandum of Understanding between the Department of the Navy and Department of the Interior concerning transfer of the Midway Islands. February 29, 1996.

Ogden Environmental and Energy Services (Ogden). 1997. Closeout Base Realignment and Closure (BRAC) Cleanup Report. August 1997.



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REPORT

In accordance with the Memorandum of Understanding (MOU) between the Department of the Navy and the Department of the Interior on the transfer of Midway Island, the Land Use Restrictions Report is provided for your information and retention. This document satisfies the conditions identified in Paragraph IV.A.6 of the MOU. The report describes the land use restrictions for Sand and Eastern Islands to avoid exposing humans and wildlife to potentially contaminated media and materials under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Should you have any questions, please contact Mr. Jeff Yamamoto of our Environmental Restoration Division at (808) 474-5968.

Sincerely,

Melvin Z. Waki

MELVIN Z. WAKI, P.E.

Head

Environmental Engineering Department

Encl:

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