## ACTION MEMORANDUM FOR BUILDING 283 SQUIER HALL

# FORT MONMOUTH, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY

BRAC 05 Facility Contract W912DY-09-D-0062 Task Order: 0012, Project No. 369857

Submitted To:

U.S. Army Engineering and Support Center Huntsville, Alabama



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Revision No. 0 August 2017

### ACTION MEMORANDUM

## SQUIER HALL FORT MONMOUTH, NEW JERSEY

#### **APPROVAL**

This Action Memorandum presents the selected removal action for contaminated soil at Building 283, Squier Hall located at Fort Monmouth in Oceanport, Monmouth County, New Jersey. The U.S. Army is the lead agency under the Defense Environmental Restoration Program at Fort Monmouth and developed this Action Memorandum consistent with the Comprehensive Environmental Response, Compensation, and Liability Act as amended and the National Oil and Hazardous Substances Pollution Contingency Plan. This memorandum will be incorporated into the Administrative Record file for Fort Monmouth, which is available for public review at the Eastern Branch of the Monmouth County Library, 1001 Route 35, Shrewsbury, New Jersey 07702. This document, presenting the results of a selected removal action with a present worth cost estimate of \$59,000, is approved by the undersigned.

1 Au, 2017 Date

Thomas E. Lederle

Chief, BRAC Division

Department of the Army Assistant Chief of Staff Installation Management

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#### 1.0 STATEMENT OF BASIS AND PURPOSE

This Action Memorandum presents the selected time critical removal action (TCRA) that removed soil contaminated with polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs) adjacent to Building 283 (also known as Squier Hall, a building within the former Squier Laboratory Complex). The purpose of this Action Memorandum is to document the U.S. Army's decision to undertake the TCRA described herein for the soils outside Building 283 at Fort Monmouth, Oceanport, New Jersey.

This document has been developed in accordance with the Defense Environmental Restoration Program (DERP), 10 United States Code (U.S.C.) Section 2701, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); 42 U.S.C. 9601; and with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300 (USEPA 1991).

#### 2.0 SITE CONDITIONS AND BACKGROUND

The location of Building 283 is shown in **Figure 1**. A description of Building 283 is provided in Section 2.1. Previous investigation activities are summarized in Section 2.2, and the results are summarized in Section 2.3.

#### 2.1 Site Setting and History

The Main Post (MP) of FTMM was established in 1917 as Camp Little Silver. The name of the Camp was changed after three months to Camp Alfred Vail. The initial mission of the Camp was to train Signal Corps operators for service in World War I. After the war, Camp Alfred Vail was designated as the site of the Signal Corps School. In 1925, the facility became a permanent post, and its name was changed to Fort Monmouth (FTMM). The primary mission of FTMM was to provide command, administrative, and logistical support for Headquarters, U.S. Fort Monmouth Communications and Electronics Command (CECOM) (Shaw, 2012). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC). FTMM was the center for the development of Fort Monmouth's Command and Control Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) systems, formerly the primary tenants of the Fort. FTMM has a long history of research and development (R&D) activity, mostly related to communications and electronic equipment. For the completion of these research activities, FTMM operated a variety of laboratories.

In 1934, FTMM laboratory operations were consolidated in a new facility, Squier Laboratory, and this facility continued to be the principal laboratory on post until 1954 when the new R&D facility, Myer Center (Building 2700), was opened. The Squier Laboratory Complex supported the Signal Corps Laboratories' research into batteries and electronics coatings. Environmental concerns were identified for some of the laboratory operations based on the size and intensity of historical operations and the timeframe during which the services took place (U.S. Army BRAC, 2007). Environmental concerns associated with Squier Laboratory operations include the use of chemicals, solvents, radioisotopes, and metals when waste handling procedures may not have been sufficiently protective to preclude a release to the environment. On September 15, 2011, FTMM was closed under the 2005 Base Realignment and Closure (BRAC) process.

Parcel 49 encompasses the buildings associated with the Former Squier Laboratory Complex which is currently unoccupied.

#### 2.2 Summary of Investigation Activities

The potential for discharges related to previous operations within Parcel 49, including Building 283, was initially assessed in the BRAC Environmental Condition of Property (ECP) Report (U.S. Army BRAC, 2007), and further evaluated in the Site Investigation (SI) Report (U.S. Army BRAC, 2008). The SI included Geoprobe® collection of surface and subsurface soil samples from five soil borings (**Figure 2**) that were analyzed for Target Compound List (TCL) analytes (including volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], and PCBs; without pesticides) plus tentatively identified compounds (+ TICs), Target Analyte List (TAL) metals, and cyanide.

Additional investigation work was performed in March 2016 under the revised ECP Work Plan (WP; Parsons, 2015) with which the New Jersey Department of Environmental Protection (NJDEP, 2015) concurred. This work included collection of soil samples from an additional six soil borings, as shown on **Figure 2,** and analysis for SVOCs and PCBs. Soil samples were collected as described in the revised ECP WP. Based on the results, PCB and PAH contamination was delineated horizontally and vertically in the soil adjacent to Building 283. PAHs were generally collocated with PCBs in the soil outside of Building 283.

Removal activities were conducted at Building 283 in July 2016 and May 2017 to remove soils that posed a potential threat to human health based on Site Investigation results and to repair property damaged by previous site investigation activities. These activities are the subject of this Action Memorandum. Post-excavation confirmation samples BKG283-001 through BKG283-004 were collected after the removal activities to document existing site conditions (**Figure 2**).

Soil and groundwater contamination associated with a release from a gasoline underground storage tank (UST) at Building 283 has been addressed in accordance with the requirements of the New Jersey Administrative Code (NJAC) 7:26E *Technical Requirements for Site Remediation* under separate cover, and therefore is not discussed further herein.

#### 2.3 Investigation Results

PCB and SVOC analytical results in soil samples collected during the 2007 and 2016 investigation activities near Building 283 are presented in **Table 1**. PCBs and PAHs were determined to be contaminants of concern (COCs) in soil at Parcel 49 (U.S. Army BRAC, 2008) and further delineation in shallow soil was performed (**Table 1**). PAHs were found to be generally co-located with PCBs. NJDEP (2012) concurred that additional investigation of metals and VOCs was not necessary. Aroclor 1260 was detected in soil in the 2007 data in three surface soil samples (P49-SB3, P49-SS7, and P49-SS8) at concentrations exceeding the November 2015 (i.e., current at the time of evaluation) United States Environmental Protection Agency (USEPA) Regional Screening Level (RSL) of 0.24 mg/kg (USEPA, 2015).

Based on recent re-sampling of these locations in 2016, only sample PAR-49-SB-04 (located in the southwest corner of the Building 283 courtyard) exceeded the RSL for Aroclor 1260. SVOCs detected above the RSLs in either the 2007 or 2016 sampling include dibenzofuran and eight PAHs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene, and naphthalene). Four soil sample locations from the 2008

SI (P49-SB4-A, P49-SS7-A, P49-SS8-A, and P49-SS9-A) were re-sampled to evaluate the potential historical discharges from laboratory operations outside of doorways.

PCB and PAH analytical results of confirmation soil samples collected during the 2017 investigation near Building 283, which were collected after removal of affected soils, are presented in **Table 2**. Soil results from below three of the four excavation areas were non-detect for all PCBs and PAHs. The results from sample BKG-002 detected multiple PAHs; however, only one analyte (benzo[a]pyrene at 0.14 mg/kg) slightly exceeded the current USEPA RSL (0.11 mg/kg) (USEPA, 2017).

#### 3.0 THREATS TO PUBLIC HEALTH, WELFARE, AND THE ENVIRONMENT

Site concentrations before and after soil removal were compared to USEPA RSLs to evaluate the potential effects of contaminants in soil on human health and the environment. The results of these comparisons were used to evaluate the need for soil removal and to identify the general effectiveness of the removal action performed in 2017.

#### 3.1 RISK ASSESSMENT EVALUATION

- 3.1.1 A screening evaluation was performed to evaluate the need for soil removal to reduce the threat to human health. Table 3 presents the maximum detected concentrations of PCBs and PAHs. These maximum concentrations significantly exceed the USEPA Residential RSLs, indicating a potential threat to human health.
- 3.1.2 Following soil removal, another screening evaluation was performed to evaluate risks from exposure to remaining/in-place soil (i.e., following soil removal) by residents exposed to mixed surface and subsurface soil (0 to 15 feet bgs). Receptors may be exposed to COPCs in soil via incidental ingestion, dermal contact, and inhalation.
- 3.1.3 PCBs, specifically Aroclor 1260, and PAHs were considered the main chemicals of potential concern (COPCs) evaluated in the screening evaluation for the soils around Building 283 as the concentrations exceeded USEPA RSLs (**Table 3**).
- 3.1.4 Aroclor 1260 was not detected in the confirmation soil samples. PAHs were detected in only one sample, BKG-002, collected at 3 feet bgs outside of a doorway in the northern portion of the Building 283 courtyard (**Figure 2**). Only benzo(a)pyrene (0.14 mg/kg) exceeded the USEPA RSL for resident soil (0.11 mg.kg). However, unacceptable risk to future residents is not expected as:
  - 1) The exceedance is minor (i.e., the observed concentration still correlates to a  $1 \times 10^{-6}$  carcinogenic risk, even though the observed concentration slightly exceeds the RSL); and
  - 2) Residents are generally expected to be exposed to only the 0 to 2 feet bgs soil interval, while the exceedance was observed at 3 ft bgs (i.e., deeper than routine residential exposure). Residential exposure to subsurface soil (>2 ft bgs) is only expected when excavation activities bring deep soil to the surface and redistribute it at the site. Based on the location of this sample, it is unlikely that excavation activities would occur.
  - 3) Use of the maximum detected concentration as the exposure point concentration assumes that the maximum detected concentration is representative of what human receptors are exposed to on average, which overestimates even worst case exposures. Because only one sample contained detected

concentrations of benzo(a)pyrene, a 95% upper confidence level (UCL) could not be calculated. Use of a median value, including all the non-detected results, as recommended by USEPA in the ProUCL guidance document, would result in a value that is less than the RSL.

3.1.5 In summary, there were exceedances of the RSLs prior to soil removal that indicated a potential threat to human health. Following soil removal, the remaining concentrations were reduced to levels that no longer pose a threat.

Table 3. Maximum COC Concentrations in Building 283 Soil Prior to and After Excavation

Contaminant	Pre-Soil Removal Maximum Concentration (mg/kg)	Post-Soil Removal Maximum Concentration (mg/kg)	USEPA RSL <sup>1</sup> (mg/kg)		
benzo(a)anthracene	80.0	0.11	1.1		
benzo(a)pyrene	54.0	0.14	0.11		
benzo(b)fluoranthene	75.0	0.23	1.1		
benzo(k)fluoranthene	29.0	0.053	11		
chrysene	79.0	0.12	110		
dibenz(a,h)anthracene	2.6	ND	0.11		
dibenzofuran	12	NA	7.3		
indeno(1,2,3-cd)pyrene	18	0.1	1.1		
naphthalene	11	ND	3.8		
Aroclor 1260	8.85	ND	0.24		

<sup>1.</sup> USEPA RSLs for Residential Soil, based on target risk of 1E-06 and target hazard quotient of 0.1. Effective June 2017 (USEPA, 2017).

3.1.6 The Baseline Ecological Evaluation (BEE; Shaw, 2012) concluded that constituents at the Main Post of FTMM (including the area around Building 283) were unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments were not warranted or recommended. Potentially complete terrestrial and aquatic pathways for ecological receptors are incomplete at Building 283 due to lack of viable habitat.

#### 4.0 REGULATORY FRAMEWORK AND ENDANGERMENT DETERMINATION

This section summarizes the regulatory framework for the TCRA at Building 283 and presents the objectives of the removal action.

#### **4.1 Regulatory Framework**

CERCLA provides the President authority to respond to releases of hazardous substances, including removal actions (42 U.S.C. Section 9604(a)). Executive Order 12580 Section 2(d) delegates the President's authority under various CERCLA sections, including Section 9604(a), to the Secretary of the U.S. Department of Defense (DoD). Section 300.415 of the NCP further specifies the structure and requirements for removal actions. As the lead agency, the U.S. Army has chosen the proposed action in this TCRA for Building 283 in accordance with CERCLA and the NCP. The New Jersey DEP acts as the state support agency.

NA – not analyzed

ND - not detected

#### 4.1.1 Justification of the Time Critical Removal Action

A removal action is warranted pursuant to the NCP when the lead agency makes the determination considering several factors that there is a threat to public health or welfare or the environment (40 CFR 300.415(b)(1)). Of the listed factors in the NCP, the following two factors in Section 300.415(b)(2) of the NCP (40 CFR 300.415) were directly applicable to the site and were used in determining the appropriateness of an TCRA in reference to the contaminant concentrations in soil near Building 283:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants. (40 CFR 300.415(b)(2)(i)).

Aroclor 1260 was present in soil outside of Building 283 at concentrations that posed a threat to human health (**Table 1**). The NCP also states:

If the lead agency determines that a removal action is appropriate, actions shall, as appropriate, begin as soon as possible to abate, prevent, minimize, stabilize, mitigate, or eliminate the threat to public health or welfare of the United States or the environment. (40 CFR 300.415(b)(3))

The U.S. Army determined that a TCRA was appropriate for Building 283 to remove the source of Aroclor 1260 contamination in soil. PAHs which were collocated with Aroclor 1260 were also removed during the Aroclor 1260 removal action.

#### 4.1.2 Applicable or Relevant and Appropriate Requirements

In accordance with the NCP (40 CFR 300.415(i)), onsite removal actions conducted under CERCLA are required to meet applicable or relevant and appropriate requirements (ARARs) "to the extent practicable." The New Jersey Residential Direct Contact Soil Remediation Standards (NJ RDCSRS) are applicable to the removal actions here. The applicable NJ RDCSRS for each COPC is:

Contaminant	NJ RDCSRS (mg/kg)
Benzo(a)anthracene	0.6
Benzo(a)pyrene	0.2
Benzo(b)fluoranthene	0.6
Benzo(k)fluoranthene	6.0
Chrysene	62
Dibenz(a,h)anthracene	0.2
Indeno(1,2,3-cd)pyrene	0.6
Naphthalene	6
Aroclor 1260	0.2

The U.S. Army also complied with applicable requirements for offsite actions (i.e., Resource Conservation and Recovery Act [RCRA] hazardous waste transportation and offsite treatment requirements prior to land disposal as required by the RCRA land disposal restrictions). The TCRA described in this Action Memorandum complied with ARARs.

#### **4.2 Endangerment Determination**

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may have resulted in unacceptable exposures to contaminants and presented a threat to human health.

#### 4.3 Removal Action Objectives

The removal action objective (RAO) for Building 283 was to remove PCB and PAH concentrations in soil that posed a threat to human health.

#### 5.0 DESCRIPTION OF PROPOSED ACTION

Two alternatives for Building 283 were evaluated using the effectiveness, implementability, and cost selection criteria established by the NCP. The relative performances of the alternatives were subsequently evaluated in a comparative analysis.

The alternatives considered for Building 283 were:

- Alternative 1 No Action
- Alternative 2 Soil Removal and Offsite Disposal.

Both alternatives were evaluated against CERCLA remedial criteria of effectiveness, implementability, and cost. Only Alternative 2 satisfied the threshold criteria of protecting human health and the environment and complied with ARARs and was effective and implementable; therefore, it was then assessed for cost. Based on the comparative analysis in terms of effectiveness, implementability, and cost, the U.S. Army's recommended alternative was **Alternative 2 – Soil Removal and Offsite Disposal.** Protectiveness is achieved by the removal of contamination in subsurface soil.

The selected removal action for the TCRA at Building 283 consisted of removing the contamination (Aroclor 1260 and PAHs) in subsurface soil. Removal action activities included site preparation, removal of contaminated soil, offsite transportation and disposal, and site restoration.

Site preparation included staking the excavation locations and identifying locations of utilities. Contaminated soil was removed and placed in rolloff boxes. Clean backfill was compacted in lifts and graded to maintain positive drainage. The excavation area was restored with grass seed and straw over the areas impacted during the removal action. Characterization, transportation, and offsite disposal of solid or hazardous waste complied with all appropriate Federal and state laws.

The general criteria for evaluating removal actions include effectiveness, implementability, and cost. The ability of the proposed action to meet these criteria is described below.

NJDEP has concurred with the Army's determination that no post-removal CERCLA action is necessary. Since hazardous substances will not remain at the site above an unrestricted use/unlimited exposure scenario, statutory 5-Year Reviews will not be necessary.

#### **5.1 EFFECTIVENESS**

The removal action for Building 283 has been effective at providing short- and long-term protection. This action is permanent because the source of the soil contamination has been removed. This alternative complies with ARARs as discussed in Section 4.1.2. The site chemical concentrations did not present a significant risk to site workers during the removal action. Physical risks were addressed by implementing approved health and safety practices during the removal action.

#### **5.2 IMPLEMENTABILITY**

The removal action has been demonstrated to be both technically and administratively implementable. The soil excavation employed construction practices that are routinely implemented. All services and materials required were readily available. This alternative has already been accepted by the NJDEP because the soil removal and offsite disposal achieved the RAO.

#### **5.3 COST**

The cost of the TCRA at Building 283 was \$59,000. A breakdown of the costs is provided in **Table 4**. The costs include development of project-specific work plans, site preparation, soil excavation, transportation and disposal, site restoration, and reporting.

Table 4. Estimated Costs for Building 283 Alternative 2: Soil Removal and Offsite Disposal

Phase Name	Year 1
Work Plan	\$2,500
Excavate and Remove Soil; Backfill	\$32,500
Transportation and Disposal	\$7,750
Waste Characterization	\$1,500
Professional Labor	\$14,750
Present Worth Total Cost:	\$59,000

# 6.0 EXPECTED CHANGE IN THE SITUATION HAD THE ACTION BEEN DELAYED OR NOT TAKEN

Delaying the implementation of the proposed removal action or taking no action would have resulted in potential threats to public health and the environment as well as delays in the transfer of Building 283 from the U.S. Army to the Fort Monmouth Economic Revitalization Authority (FMERA).

#### 7.0 PUBLIC INVOLVEMENT AND PARTICIPATION

This Action Memorandum will be made available for a 30-day public review and comment period from August 1 to August 30, 2017.

The TCRA will be posted on the Fort Monmouth IRP website (<a href="http://www.pica.army.mil/ftmonmouth/">http://www.pica.army.mil/ftmonmouth/</a>) and placed in the Fort Monmouth Environmental Restoration Public Information Repository (the Administrative Record) at the following location:

Monmouth County Library, Eastern Branch

1001 Route 35, Shrewsbury, NJ

Phone: (732) 683-8980

Hours: Mon-Thurs, 9am-9pm; Fri-Sat, 9am-5pm; and Sun, 1pm-5pm

Appendix A includes the public press release regarding the TCRA and the public notice requesting comments.

#### 8.0 RECOMMENDATIONS

This Action Memorandum documents the action taken by the U.S. Army for the removal of contaminated soil outside Building 283 at Fort Monmouth, New Jersey. The removal action was developed in accordance with CERCLA as amended and in a manner consistent with the NCP. This Action Memorandum provides information related to the selection of the remedy and identifies actions taken to address the potential risks to human health and the environment.

The soil removal and backfill alternative selected as the final remedy consisted of the removal of the source of contamination in soil outside Building 283. This remedy best met the RAO and NCP criteria because it:

- Was technically feasible based on commonly used construction techniques and demonstrated proven approaches
- Was administratively feasible and eliminated requirements to conduct CERCLA 5-Year Reviews
- Provided a high degree of long-term public health and environmental protection through the removal of the source of the contaminated soil
- Complied with chemical- and action-specific ARARs
- Imposed no restrictions on future use of the site
- Facilitated transfer of the property to the FMERA
- Served as a final action at the site.

The removal action meets the evaluation criteria of effectiveness, implementability, and cost.

#### 9.0 REFERENCES

- New Jersey Department of Environmental Protection (NJDEP), 2012. Letter to Army; Re: *March* 2012 *Army Response to NJDEP Correspondence Letter Dated October* 28, 2008, Fort Monmouth, NJ. July 10.
- NJDEP, 2015. Letter to Army; Re: Revision 1 Final Environmental Condition of Property Supplemental Phase II Site Investigation Work Plan Addendum for Parcels 28, 38, 39, 49, 57, 61, and 69 dated November 2015. December 30.
- Parsons, 2015. Final Environmental Condition of Property Supplemental Phase II Site Investigation Work Plan for Parcels 28, 38, 39, 49, 57, 61, and 69. Submitted to U.S. Army Engineering and Support Center, Huntsville, AL. Revision No. 1. August.
- Shaw, 2012. Final Fort Monmouth Main Post and Charles Wood Area Baseline Ecological Evaluation Report, U.S. Army Garrison Fort Monmouth, Fort Monmouth, New Jersey. Prepared for the Army Corps of Engineers, Baltimore District. Rev. 1.
- United States (US) Army Base Realignment and Closure (BRAC), 2007. *Environmental Condition of Property Report Fort Monmouth, Monmouth County, New Jersey.* Final. January 29.

- US Army BRAC, 2008. *Site Investigation Report, Fort Monmouth*. Final. July 21. USEPA, 2015. Regional Screening Levels Summary Table (based on target risk of 1E-06 and target hazard quotient of 0.1). November.
- US Environmental Protection Agency (USEPA), 2015. Regional Screening Levels Summary Table (based on target risk of 1E-06 and target hazard quotient of 0.1). November.
- USEPA, 2017. Regional Screening Levels Summary Table (based on target risk of 1E-06 and target hazard quotient of 0.1). June. Available at: <a href="https://semspub.epa.gov/work/03/2245071.pdf">https://semspub.epa.gov/work/03/2245071.pdf</a>.

Figure 1 Main Post Layout

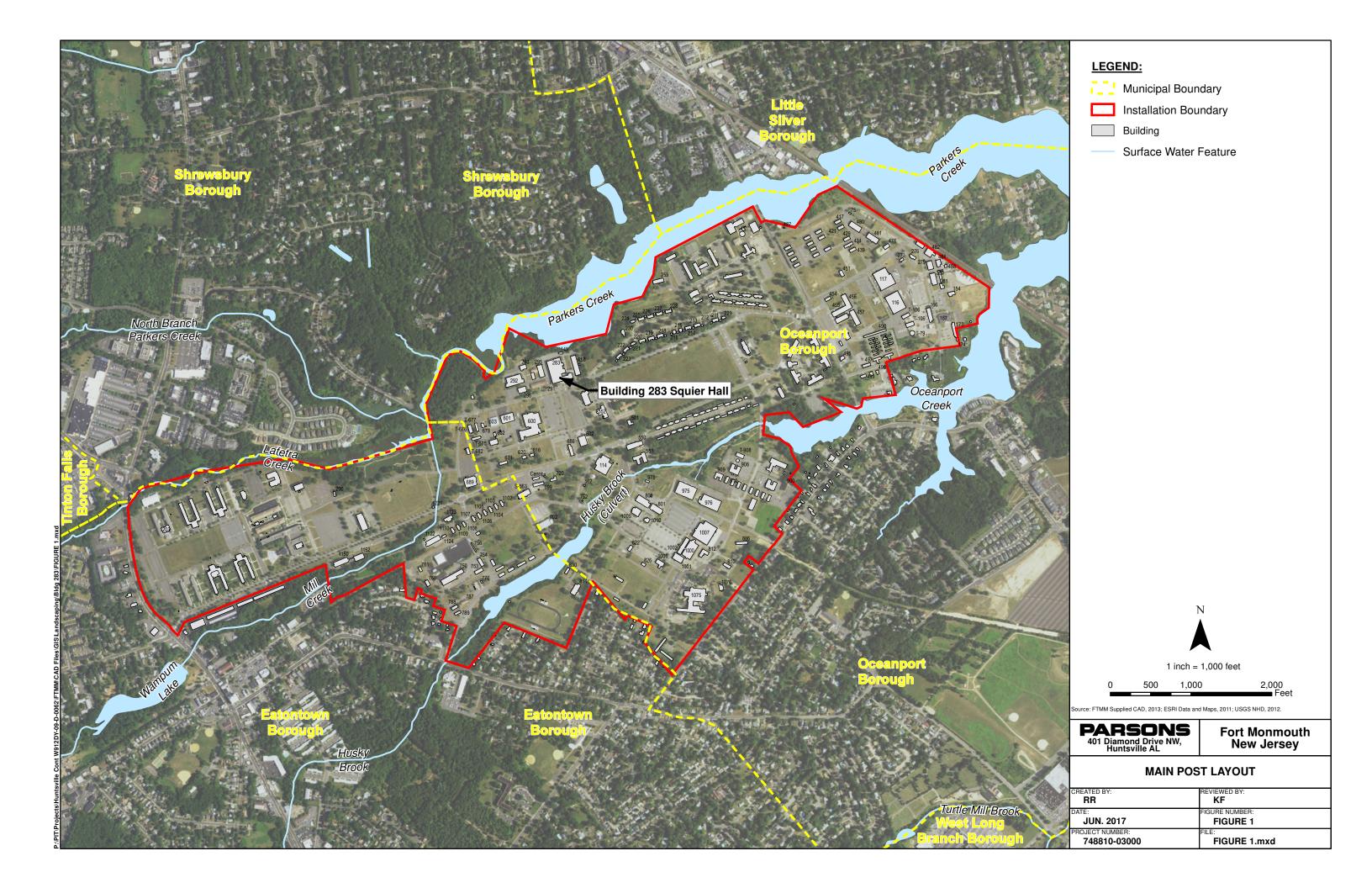


Figure 2 Building 283 Squier Hall Soil Results

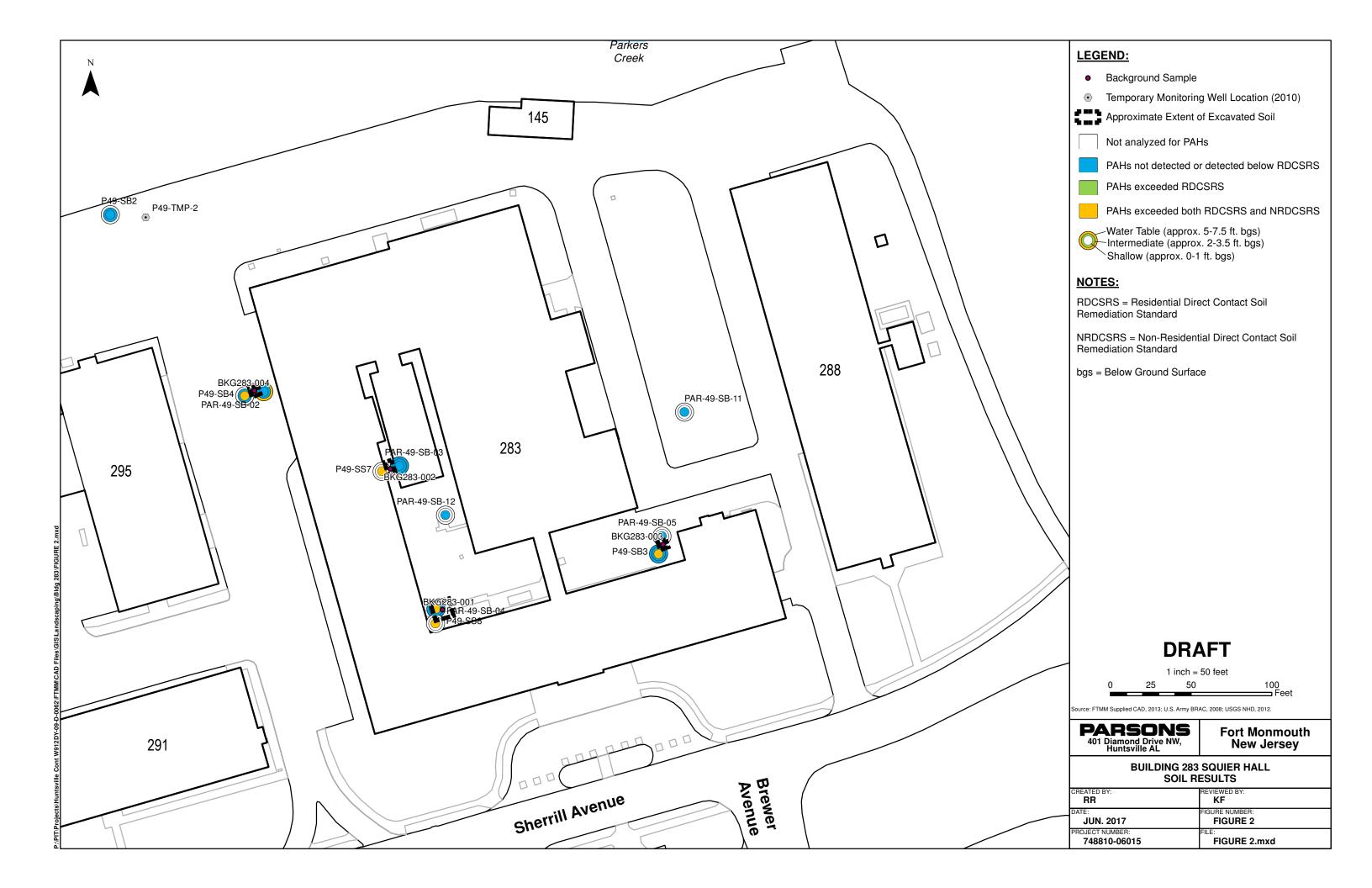


Table 1 2007 and 2016 Detected Soil Analytes at Building 283 and Comparison to USEPA Regional Screening Levels

TABLE 1
2007 AND 2016 DETECTED SOIL ANALYTES AT
BUILDING 283 AND COMPARISON TO USEPA
REGIONAL SCREENING LEVELS
BUILDING 283
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSLs for Residential		P49-SB2			P49-SB3			P49-SB4		P49	-SS7	P49-	-SS8
Sample ID	Soil	P49-SB2-A	P49-SB2-B	P49-SB2-C	P49-SB3-A	P49-SB3-B	P49-SB3-C	P49-SB4-A	P49-SB4-B	P49-SB4-C	P49-SS7-A	P49-SS7-B	P49-SS8-A	P49-SS8-B
Sample Depth Interval (ft bgs)	(November	0.5-1	1.5-2	9-9.5	0-0.5	1.5-2	3.5-4	0.5-1	1.5-2	8-8.5	0-0.5	1.5-2	0-0.5	1.5-2
Sample Date	2015) (HQ = 0.1)	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/7/2007	12/6/2007	12/6/2007	12/6/2007	12/6/2007
Semivolatile Organic Compounds (r	ng/kg)			8		<u> </u>	<u> </u>	8		8				
1-Methylnaphthalene	18	NA	NA	NA	NA									
2-Methylnaphthalene	24	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	0.098 J	NA	< 1.3	4.4	NA	0.13 J	NA
4-Methylphenol	630	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	< 1.1	NA	< 1.3	0.32 J	NA	< 1.2	NA
Acenaphthene	360	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	< 1.1	NA	< 1.3	20 JD	NA	0.66 J	NA
Acenaphthylene	NLE	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	0.92 J	NA	< 1.3	0.45 J	NA	0.048 J	NA
Anthracene	1800	< 1.1	NA	< 1.3	0.1 J	NA	0.034 J	0.37 J	NA	< 1.3	46 JD	NA	1.8	NA
Benzo(a)anthracene	0.16	< 1.1	NA	< 1.3	0.55 J	NA	0.11 J	2.5	NA	< 1.3	80 D	NA	3.6	NA
Benzo(a)pyrene	0.016	< 1.1	NA	< 1.3	0.44 J	NA	< 1.2	2.2	NA	< 1.3	54 JD	NA	2.6	NA
Benzo(b)fluoranthene	0.16	< 1.1	NA	< 1.3	0.67 J	NA	0.12 J	2.8	NA	< 1.3	75 D	NA	3.9	NA
Benzo(ghi)perylene	NLE	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	0.9 J	NA	< 1.3	16 JD	NA	0.84 J	NA
Benzo(k)fluoranthene	1.6	< 1.1	NA	< 1.3	0.26 J	NA	0.047 J	0.89 J	NA	< 1.3	29 JD	NA	1.5	NA
Bis(2-Ethylhexyl)phthalate	39	< 1.1	NA	< 1.3	0.45 J	NA	0.13 J	< 1.1	NA	< 1.3	< 1.1	NA	0.69 J	NA
Butyl benzyl phthalate	290	< 1.1	NA	< 1.3	1.8	NA	0.25 J	< 1.1	NA	< 1.3	0.67 J	NA	0.52 J	NA
Chrysene	16	< 1.1	NA	< 1.3	0.61 J	NA	0.13 J	3.5	NA	< 1.3	<b>79</b> D	NA	3.7	NA
Dibenz(a,h)anthracene	0.016	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	< 1.1	NA	< 1.3	2.6	NA	0.34 J	NA
Dibenzofuran	7.3	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	< 1.1	NA	< 1.3	12	NA	0.39 J	NA
Di-n-butylphthalate	630	0.42 JB	NA	1.1 JB	0.81 JB	NA	8.5 B	1.8 B	NA	0.94 JB	< 1.1	NA	0.63 JB	NA
Fluoranthene	240	< 1.1	NA	< 1.3	1 J	NA	0.22 J	1.5	NA	< 1.3	190 D	NA	9	NA
Fluorene	240	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	0.13 J	NA	< 1.3	17 JD	NA	0.64 J	NA
Indeno(1,2,3-cd)pyrene	0.16	< 1.1	NA	< 1.3	0.16 J	NA	< 1.2	0.68 J	NA	< 1.3	18 JD	NA	0.93 J	NA
Naphthalene	3.8	< 1.1	NA	< 1.3	< 1.2	NA	< 1.2	0.1 J	NA	< 1.3	11	NA	0.28 J	NA
Phenanthrene	NLE	< 1.1	NA	< 1.3	0.5 J	NA	0.21 J	0.23 J	NA	< 1.3	170 D	NA	7.1	NA
Pyrene	130	< 1.1	NA	< 1.3	1 J	NA	0.21 J	4.8	NA	< 1.3	160 D	NA	7.3	NA
Pesticides & PCBs (mg/kg)														
Aroclor-1260	0.24	< 0.0042	NA	< 0.0041	0.34	NA	0.1	< 0.0039	NA	< 0.004	0.47	NA	8.85	NA
Aroclor-1268	NLE	NA	NA	NA	NA									

TABLE 1
2007 AND 2016 DETECTED SOIL ANALYTES AT
BUILDING 283 AND COMPARISON TO USEPA
REGIONAL SCREENING LEVELS
BUILDING 283
FORT MONMOUTH, NEW JERSEY

	USEPA RSLs									
Loc ID	for		SB02	SB03						
	Residential									
Sample ID	Soil	PAR-49-SS-SB-02-1-1.5	PAR-49-SS-SB-02-16-16.5	PAR-49-SS-SB-02-3.3-3.8	PAR-49-SS-SB-03-0.5-1	PAR-49-SS-SB-03-12.5-13	PAR-49-SS-SB-03-2.5-3			
Sample Depth Interval (ft bgs)	(November	1-1.5	16-16.5	3.3-3.8	0.5-1	12.5-13	2.5-3			
Sample Date	2015) (HQ = 0.1)	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016			
Semivolatile Organic Compounds (mg/kg)										
1-Methylnaphthalene	18	< 0.0072	0.04	< 0.0082	0.0054 J	< 0.009	< 0.0085			
2-Methylnaphthalene	24	< 0.0072	0.059	< 0.0082	0.0066 J	< 0.009	< 0.0085			
4-Methylphenol	630	NA	NA	NA	NA	NA	NA			
Acenaphthene	360	< 0.0072	0.005 J	< 0.0082	0.01	< 0.009	< 0.0085			
Acenaphthylene	NLE	< 0.0072	0.18	< 0.0082	0.0038 J	< 0.009	< 0.0085			
Anthracene	1800	< 0.0072	0.14	< 0.0082	0.033	< 0.009	< 0.0085			
Benzo(a)anthracene	0.16	0.0052 J	0.3	0.0026 J	0.18	< 0.009	< 0.0085			
Benzo(a)pyrene	0.016	0.0042 J	0.3	< 0.0082	0.2	< 0.009	< 0.0085			
Benzo(b)fluoranthene	0.16	0.0055 J	0.32	< 0.0082	0.25	< 0.009	< 0.0085			
Benzo(ghi)perylene	NLE	0.0045 J	0.26	< 0.0082	0.14	< 0.009	< 0.0085			
Benzo(k)fluoranthene	1.6	0.0023 J	0.11	< 0.0082	0.091	< 0.009	< 0.0085			
Bis(2-Ethylhexyl)phthalate	39	NA	NA	NA	NA	NA	NA			
Butyl benzyl phthalate	290	NA	NA	NA	NA	NA	NA			
Chrysene	16	0.0043 J	0.43	< 0.0082	0.18	< 0.009	< 0.0085			
Dibenz(a,h)anthracene	0.016	< 0.0072	0.053	< 0.0082	0.028	< 0.009	< 0.0085			
Dibenzofuran	7.3	NA	NA	NA	NA	NA	NA			
Di-n-butylphthalate	630	NA	NA	NA	NA	NA	NA			
Fluoranthene	240	0.0052 J	0.27	< 0.0082	0.33	< 0.009	< 0.0085			
Fluorene	240	< 0.0072	0.024	< 0.0082	0.0067 J	< 0.009	< 0.0085			
Indeno(1,2,3-cd)pyrene	0.16	0.0041 J	0.18	< 0.0082	0.14	< 0.009	< 0.0085			
Naphthalene	3.8	< 0.0072	0.051	< 0.0082	0.0072 J	< 0.009	< 0.0085			
Phenanthrene	NLE	< 0.0072	0.085	< 0.0082	0.11	< 0.009	< 0.0085			
Pyrene	130	0.0069 J	0.6	< 0.0082	0.29	< 0.009	< 0.0085			
Pesticides & PCBs (mg/kg)										
Aroclor-1260	0.24	NA	NA	NA	< 0.041	NA	NA			
Aroclor-1268	NLE	NA	NA	NA	< 0.041	NA	NA			

TABLE 1
2007 AND 2016 DETECTED SOIL ANALYTES AT
BUILDING 283 AND COMPARISON TO USEPA
REGIONAL SCREENING LEVELS
BUILDING 283
FORT MONMOUTH, NEW JERSEY

	USEPA RSLs						
Loc ID	for			SB	04		
	Residential						
Sample ID	Soil	PAR-49-SS-SB-04-0.5-1	PAR-49-SS-SB-04-1.5-2	PAR-49-SS-SB-04-2.75-3.25	PAR-49-SS-SB-04-2-2.5	PAR-49-SS-SB-04-9.5-10	PAR-49-SS-SB-104-0.5-1
Sample Depth Interval (ft bgs)	(November	0.5-1	1.5-2	2.75-3.25	2-2.5	9.5-10	0.5-1
Sample Date	2015) (HQ = 0.1)	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016
Semivolatile Organic Compounds	s (mg/kg)				-		
1-Methylnaphthalene	18	0.22 J	NA	< 0.0077	NA	< 0.0088	0.89 J
2-Methylnaphthalene	24	0.32 J	NA	< 0.0077	NA	< 0.0088	0.92 J
4-Methylphenol	630	NA	NA	NA	NA	NA	NA
Acenaphthene	360	0.7 J	NA	< 0.0077	NA	< 0.0088	4.3 J
Acenaphthylene	NLE	0.026 J	NA	< 0.0077	NA	< 0.0088	0.2 J
Anthracene	1800	1.7 J	NA	< 0.0077	NA	< 0.0088	11 J
Benzo(a)anthracene	0.16	2.5 J	NA	0.0026 J	NA	0.003 J	15 J
Benzo(a)pyrene	0.016	2.3 J	NA	< 0.0077	NA	< 0.0088	13 J
Benzo(b)fluoranthene	0.16	2.8 J	NA	< 0.0077	NA	< 0.0088	16 J
Benzo(ghi)perylene	NLE	1.7 J	NA	< 0.0077	NA	< 0.0088	8.2 J
Benzo(k)fluoranthene	1.6	0.99 J	NA	< 0.0077	NA	< 0.0088	6.2 J
Bis(2-Ethylhexyl)phthalate	39	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	290	NA	NA	NA	NA	NA	NA
Chrysene	16	2.4 J	NA	< 0.0077	NA	< 0.0088	14 J
Dibenz(a,h)anthracene	0.016	0.37 J	NA	< 0.0077	NA	< 0.0088	1.8 J
Dibenzofuran	7.3	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	630	NA	NA	NA	NA	NA	NA
Fluoranthene	240	5.7 J	NA	0.0028 J	NA	< 0.0088	37 J
Fluorene	240	0.86 J	NA	< 0.0077	NA	< 0.0088	4.4 J
Indeno(1,2,3-cd)pyrene	0.16	1.7 J	NA	< 0.0077	NA	< 0.0088	8.4 J
Naphthalene	3.8	0.36 J	NA	< 0.0077	NA	< 0.0088	0.94 J
Phenanthrene	NLE	5.5 J	NA	< 0.0077	NA	< 0.0088	36 J
Pyrene	130	5 J	NA	< 0.0077	NA	< 0.0088	30 J
Pesticides & PCBs (mg/kg)							
Aroclor-1260	0.24	0.69 J	0.3	NA	0.15	NA	1.6 J
Aroclor-1268	NLE	0.73 J	< 0.039	NA	< 0.039	NA	< 0.19 UJ

# TABLE 1 2007 AND 2016 DETECTED SOIL ANALYTES AT BUILDING 283 AND COMPARISON TO USEPA REGIONAL SCREENING LEVELS BUILDING 283 FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSLs for Residential	SB05	SB11	SB12
Sample ID	Soil	PAR-49-SS-SB-05-0.5-1	PAR-49-SS-SB-11-0-0.5	PAR-49-SS-SB-12-0.5-1
Sample Depth Interval (ft bgs)	(November	0.5-1	0-0.5	0.5-1
Sample Date	2015) (HQ = 0.1)	3/30/2016	3/30/2016	3/30/2016
Semivolatile Organic Compounds (m	g/kg)			
1-Methylnaphthalene	18	< 0.0081	< 0.0085	< 0.0077
2-Methylnaphthalene	24	< 0.0081	< 0.0085	< 0.0077
4-Methylphenol	630	NA	NA	NA
Acenaphthene	360	< 0.0081	< 0.0085	< 0.0077
Acenaphthylene	NLE	< 0.0081	< 0.0085	0.0075 J
Anthracene	1800	< 0.0081	< 0.0085	0.0074 J
Benzo(a)anthracene	0.16	0.0028 J	< 0.0085	0.037
Benzo(a)pyrene	0.016	< 0.0081	< 0.0085	0.04
Benzo(b)fluoranthene	0.16	< 0.0081	< 0.0085	0.048
Benzo(ghi)perylene	NLE	< 0.0081	< 0.0085	0.033
Benzo(k)fluoranthene	1.6	< 0.0081	< 0.0085	0.02
Bis(2-Ethylhexyl)phthalate	39	NA	NA	NA
Butyl benzyl phthalate	290	NA	NA	NA
Chrysene	16	< 0.0081	< 0.0085	0.04
Dibenz(a,h)anthracene	0.016	< 0.0081	< 0.0085	0.0073 J
Dibenzofuran	7.3	NA	NA	NA
Di-n-butylphthalate	630	NA	NA	NA
Fluoranthene	240	< 0.0081	< 0.0085	0.06
Fluorene	240	< 0.0081	< 0.0085	< 0.0077
Indeno(1,2,3-cd)pyrene	0.16	< 0.0081	< 0.0085	0.03
Naphthalene	3.8	< 0.0081	< 0.0085	0.0029 J
Phenanthrene	NLE	< 0.0081	< 0.0085	0.031
Pyrene	130	< 0.0081	< 0.0085	0.061
Pesticides & PCBs (mg/kg)				
Aroclor-1260	0.24	< 0.04	< 0.042	NA
Aroclor-1268	NLE	< 0.04	< 0.042	NA

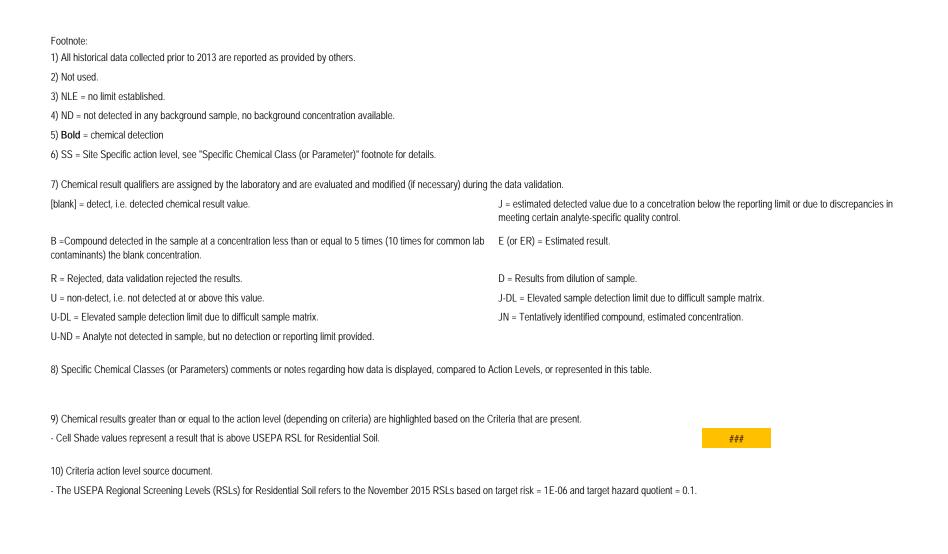


Table 2
2017 Background Soil Sample Results and Comparison to USEPA Regional Screening Levels

# TABLE 2 2017 BACKGROUND SOIL SAMPLE RESULTS AND COMPARISON TO USEPA REGIONAL SCREENING LEVELS BUILDING 283 FORT MONMOUTH, NEW JERSEY

PCB-8002													-		1
Cability					CLIENT ID:	BKG-283-	.002	BKG-28	3-001	BKG-283.	-003	BKG-283	-004	BKG-283-0	004-FD
COLLECTION DATE   SAMPLE UNITS   SOI					=										
USEFA RSLa   Foresidential   Soil															
USEPA RSLs   Free Residential   Soil   Result   RL   Res								-							
USEPA RSLs for Residential   Soil   Result   RL   Result							1				,				
						5 5	,	<u> </u>	3	<u> </u>	,	<u> </u>	3	J	3
PCB-9082				USEPA RSLs											
PCB-9802															
PCB-8002				Soil 1											
PCB-8002 1336-8-3 Arcolor (Total) 0.23 ND 0.31 ND 0.031 N	TestCode	CAS#	Analyte	mg/Kg		Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
PCB-8082 12674-11-2 Aroclor-1016			PCBs										·		
PCB-8082 11741-16-5 Aroclor-1232 0.17 ND 0.03 ND 0.031 ND	PCB-8082														
PCB-8082 11141-16-5 Aroclor-1232 0.17 ND 0.03 ND 0.031 ND 0.032 ND 0.031 ND 0.031 PCB-8082 12672-29-6 Aroclor-1242 0.23 ND 0.03 ND 0.03 ND 0.031 ND 0.032 ND 0.031 ND 0.031 PCB-8082 12672-29-6 Aroclor-1248 0.23 ND 0.03 ND 0.03 ND 0.031 ND	PCB-8082		Aroclor-1016				0.03		0.031		0.032		0.031		
PCB-8082 53469-21-9 Arcolor-1242 0.23 ND 0.031 ND 0.031 ND 0.032 ND 0.031 N															
PCB-8082 12672-29-6 Arcolor-1248 0.23 ND 0.031 N	PCB-8082	11141-16-5	Aroclor-1232	-					0.031		0.032	ND	0.031		
PCB-8082 11097-69-1 Ancdor-1254 0.12 ND 0.03 ND 0.031 ND 0.032 ND 0.031 ND															
PCB-8082 11096-82-5 Aroclor-1260															
PCB-8082 37324-23-5 Arcolor-1262 NA ND 0.03 ND 0.031 ND 0.032 ND 0.031 ND 0.032 ND 0.031 ND 0.032 ND 0.031 ND 0.032 ND 0.032 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.041 ND 0				-											
PCB-8082 1110-14-4 Aroclo-1268 NA ND 0.03 ND 0.031 ND 0.032 ND 0.031 ND 0.032 ND 0.031 ND 0.032 ND 0.031 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.041 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 ND 0.042 ND 0.0															
SemiVolatiles   SemiVolatile															
BNPAH-8270 91-57-6 2-Methylnaphthalene 24 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 283-96-8 Acenaphthylene NA ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 120-12-7 Anthracene 1800 0.049 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 120-12-7 Anthracene 1800 0.049 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 50-32-8 Benzo[a]anthracene 1.1 0.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 50-32-8 Benzo[a]pyrene 0.11 0.14 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 191-24-2 Benzo[g]h,i]perylene NA 0.12 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 191-24-2 Benzo[g,h,i]perylene NA 0.12 0.04 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 240 0.12 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 207-08-9 Benzo[k]fluoranthene 240 0.17 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 867-3-7 Fluorene 240 ND 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[12,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[12,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[12,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[12,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-09-0 Pyrene 180 0.15 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 190-00-0 Pyrene 180 0.15 ND 0.041 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-827	PCB-8082	11100-14-4		NA		ND	0.03	ND	0.031	ND	0.032	ND	0.031	ND	0.031
BNPAH-8270 83-32-9 Acenaphthene 360 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 120-12-7 Anthracene 1800 0.049 ND 0.040 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 120-12-7 Anthracene 1800 0.049 ND 0.049 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 56-55-3 Benzo[a]anthracene 1.1 0.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 205-99-2 Benzo[b]fluoranthene 1.1 0.2 0.11 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 191-24-2 Benzo[g,h,i]perylene NA 0.12 0.04 ND 0.04 ND 0.04 ND 0.01 ND 0.01 ND 0.01 BNPAH-8270 205-99-8 Benzo[k,i]toranthene 1.1 0.2 0.1 ND 0.01 ND 0.01 ND 0.01 ND 0.01 ND 0.01 BNPAH-8270 207-08-9 Benzo[k,i]toranthene 1.1 0.04 ND 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.01 ND 0.01 BNPAH-8270 218-01-9 Chrysene 110 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 218-01-9 Chrysene 110 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 205-370-3 Dibenzo[a,h]anthracene 0.11 ND 0.01 ND 0.01 ND 0.01 ND 0.01 BNPAH-8270 205-44-0 Fluoranthene 240 ND 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.04 BNPAH-8270 205-44-0 Fluoranthene 240 ND 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.4 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.4 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.4 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.4 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.4 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-09-5 NAphthalene 3.8 NAPHHalene 3.	DNDALL 0070	04.57.0					0.04		0.040		0.040	NID.	0.044	NID.	0.040
BNPAH-8270 208-96-8 Acenaphthylene NA BBNPAH-8270 208-96-8 Acenaphthylene NA BBNPAH-8270 120-12-7 Anthracene 1800 1800 0.049 0.044 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 56-55-3 Benzo[a]anthracene 1.1 0.11 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 56-55-3 Benzo[a]pyrene 0.11 0.11 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 205-99-2 Benzo[p]illuoranthene 1.1 0.23 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 191-24-2 Benzo[p,illperylene NA 0.12 0.04 ND 0.01 ND 0.011 ND 0.011 ND 0.011 ND 0.011 ND 0.014 BNPAH-8270 207-08-9 Benzo[k]illuoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 218-01-9 Chrysene 110 0.053 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 53-70-3 Dibenzo[a,h]anthracene 0.11 ND 0.01 ND 0.01 ND 0.011 ND 0.011 ND 0.011 ND 0.014 ND 0.042 BNPAH-8270 206-44-0 Fluoranthene 240 ND 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.042 BNPAH-8270 206-44-0 Fluoranthene 240 ND 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.049 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.1 0.04 ND 0.049 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 0.0 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-00-0 Pyrene 180 0.15 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.041 ND 0.042 BNPAH-8270 193-00-0 Pyrene 180 0.0 ND 0															
BNPAH-8270 120-12-7 Anthracené															
BNPAH-8270   56-55-3   Benzo[a]anthracene   1.1   0.04   ND   0.042   ND   0.042   ND   0.041   ND   0.042   ND   0.041   ND   0.042   ND   0.042   ND   0.041   ND   0.042															
BNPAH-8270   50-32-8   Benzo[ajpyrene   0.11   0.14   0.04   ND   0.042   ND   0.042   ND   0.041   ND   0.042   BNPAH-8270   205-99-2   Benzo[bjffuoranthene   1.1   0.23   0.04   ND   0.042   ND   0.042   ND   0.041   ND   0.042   ND   0.044   ND   0.042   ND   0.044   ND   0.042   ND   0.042   ND   0.044   ND															
BNPAH-8270   205-99-2   Benzo[b]fluoranthene   1.1						-									
BNPAH-8270   191-24-2   Benzo[g,h,i]perylene   NA     0.12   0.04   ND   0.01   ND   0.042   ND   0.044   ND   0.04				-											
BNPAH-8270 207-08-9 Benzo[k]fluoranthene 11 0.053 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 218-01-9 Chrysene 110 0.12 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 53-70-3 Dibenzo[a,h]anthracene 0.11 ND 0.04 ND 0.04 ND 0.01 ND 0.011 ND 0.01 ND 0.01 ND 0.01 ND 0.01 ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 206-44-0 Fluoranthene 240 ND 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 BNPAH-8270 193-39-5 Indeno[1,2,3-cd]pyrene 1.1 ND 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 91-20-3 Naphthalene 3.8 ND 0.099 ND 0.01 ND 0.011 ND 0.011 ND 0.01 ND 0.01 BNPAH-8270 85-01-8 Phenanthrene NA ND 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 129-00-0 Pyrene 180 0.15 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 129-00-0 Pyrene 180 0.15 0.04 ND 0.042 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 EPHC9C40 C9-C40 NA ND 0.71 ND 75 ND 76 ND 74 ND 75 ND 75 ND 76 ND 74 ND 75															
BNPAH-8270 218-01-9 Chrysene 110 0.12 0.04 ND 0.042 ND 0.042 ND 0.041 ND 0.042 BNPAH-8270 53-70-3 Dibenzo[a,h]anthracene 0.11 ND 0.01 ND 0.01 ND 0.011 ND 0.011 ND 0.01 ND 0.042 ND 0.044 ND 0.042 ND 0.044 ND 0.04		-													
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8015-EPHCAT2	DIN / 11-02/0	120 00-0		100		0.10	0.04	IND	0.042	ND	0.042	IND	0.041	IND	0.042
Wet Chemistry	8015-EPHCAT2	EPHC9C40		NA		ND	71	ND	75	ND	76	ND	74	ND	75
	5575 211157(12			10,		1,0	, ,	1,0	10	,,,,,	, ,	.,,	, , ,	.,5	10
	%SOLIDS	PERSOL		NA		84(Percent)		80(Percent)		79(Percent)		81(Percent)	l	80(Percent)	

Result exceeds USEPA RSL

Positive result detected below all criteria

N/A No criterion derived for this contaminant.

<sup>1 -</sup> The USEPA Regional Screening Levels (RSLs) for Residential Soil refers to the June 2017 RSLs based on target risk = 1E-06 and target hazard quotient = 0.1. Available at: https://semspub.epa.gov/work/03/2245071.pdf.

#### APPENDIX A

# **PUBLIC NOTICE**



U.S. Army Corps of Engineers, NY District, ACTION MEMORANDUM FOR BUILDING 283 SQUIER HALL

The U.S. Army Corps of Engineers New York District and the U.S. Army Engineering and Support Center, Huntsville (USAESCH), has prepared an *Action Memorandum* for Building 283 (Squier Hall) at Fort Monmouth (FTMM) in Oceanport, Monmouth County, New Jersey. The U.S. Army is the lead agency for FTMM in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Executive Order 12580. New Jersey Department of Environmental Protection (NJDEP) is the state support agency under the National Contingency Plan for FTMM.

The *Action Memorandum* describes the nature and extent of contamination in the soil adjacent to Building 283 (Squier Hall). The preferred alternative is excavation of polychlorinated biphenyl (PCB) contaminated soil in and around Building 283 where PCB concentrations exceeded 1 mg/kg and are collocated with polynuclear aromatic hydrocarbons (PAHs). The removal action has already occurred and the New Jersey Department of Environmental Protection has concurred with the Army's No Further Action determination for Building 283.

The *Action Memorandum*, the associated reports, and the full public record for the Sites, are available for review at the Monmouth County Library, Eastern Branch, 1001 Route 35, Shrewsbury NJ 07702. The *Action Memorandum* is also posted on the FTMM Environmental Restoration Program website (http://www.pica.army.mil/ftmonmouth/).

The New York District invites public comment on the *Action Memorandum*. Written comments will be accepted during a 30-day comment period starting August 3, 2017 and ending September 5, 2017. All comments must be postmarked by September 5 and mailed to the address below (or emailed by September 5 to william.r.colvin18.civ@mail.mil):

BRAC Environmental Coordinator OACSIM - U.S. Army Fort Monmouth Attn: Mr. William Colvin P.O. Box 148, Oceanport, NJ 08641 (732) 380-7064

The public is invited to provide comments on the Action Memorandum at that time.