FINAL

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES) MS4 PERMIT

FORT BELVOIR PCB TMDL ACTION PLAN

AT

U.S. ARMY GARRISON FORT BELVOIR, VIRGINIA

Prepared For:

Department of the Army
U.S. Army Garrison, Fort Belvoir
Directorate of Public Works
Environmental and Natural Resources Division

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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
BLDG	building
BMP	Best Management Practice
CWA	Clean Water Act
CSO	combined sewer overflow
DCR	Department of Conservation and Recreation
DDOE	District of Columbia Department of the Environment
DPDO	Defense Property Disposal Office
DPW-ENRD	Directorate of Public Works, Environmental and Natural Resources Division
FBNA	Fort Belvoir North Area
ft	feet
g	grams
GIS	Geographic Information System
L	liter
LA	load allocations
MDE	Maryland Department of the Environment
MOS	margin of safety
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
ORI	outfall reconnaissance inventory
PCB	polychlorinated biphenyl
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAP	Sampling and Analysis Plan
SPPP	Stormwater Pollution Prevention Plan
SW	stormwater
SWMU	Solid Waste Management Unit
TMDL	total maximum daily load
TSCA	Toxic Substances Control Act

VDEQ	Virginia Department of Environmental Quality
VELAP	Virginia Environmental Laboratory Accreditation Program
VPDES	Virginia Pollutant Discharge Elimination System
VSMP	Virginia Stormwater Management Program
U.S. EPA	United States Environmental Protection Agency
WLA	waste load allocation

1. INTRODUCTION AND BACKGROUND

The U.S. Army Garrison Fort Belvoir is located in southeastern Fairfax County, Virginia, approximately 15 miles southwest of Washington, DC, and 80 miles north of Richmond, Virginia. Fort Belvoir's military history dates to the early 1900s, when the facility was known as Camp Belvoir and used as an Army rifle range and training camp. The post was re-named Fort Humphreys in 1922, and became Fort Belvoir in 1935. Since 1935, Fort Belvoir has supported major U.S. military operations throughout the world.

Fort Belvoir consists of more than 8,200-acres on Main Post and an 800-acre detachment parcel, Fort Belvoir North Area (FBNA), which is located on the west side of Interstate 95 as in Figure 1. The Main Post is situated between Interstate 95 and Pohick Bay and Gunston Cove on the Potomac River. US Route 1 divides the Main Post into two distinct geographical areas, referred to as North Post and South Post.

In recent years, Fort Belvoir has functioned primarily as an administrative and logistics support center for the Army and as a host for over 100 tenant organizations from various government branches (including all branches of the armed services). It currently employs more than 24,000 civilian and military personnel, and provides support services for over 200,000 military personnel, dependents, and retirees in the region. Development along US Route 1 consists of mixed use commercial businesses and scattered residences. The surrounding area is developed with residential and commercial/retail businesses.

Tidewater is contracted to Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) under the Contract Number W91QV1-12-F-0234. Tidewater prepared this document in order to support DPW-ENRD's on-going environmental stewardship satisfying the Potomac River Watershed polychlorinated biphenyl (PCB) total maximum daily load (TMDL) requirements in accordance with General Permit VAR04 (4VAC50-60-1240) Section 1B from Virginia Department of Environmental Quality (VDEQ) Department of Conservation and Recreation (DCR).

In accordance with Contract Number W91QV1-12-F-0234 the following four tasks were completed:

- A PCB historic use inventory identified sites where PCBs are currently stored or have been historically stored, transferred, transported or spilled in a manner that would expose them to precipitation.
- A PCB historical use analysis evaluated lines of evidence to determine which sites, if any, identified in the inventory required sampling. For those site requiring sampling, recommended sampling locations were determined.
- Best Management Practices (BMPs) at each site were evaluated and existing BMPs from the Municipal Separate Storm Sewer System (MS4) program plan were evaluated to determine if they sufficiently address the PCB concerns. Where applicable, recommendations were made for which general and site specific BMPs that could be implemented.
- A sampling plan (this action plan) was developed that summarized the findings of the above tasks and documented detailed plans for future PCB sampling required in accordance with MS4 General Permit Conditions.

Based on the evaluation, this action plan was prepared to summarize the PCB TMDL actions proposed for completion by December 2012 in the 2011-2012 Annual Report.

2. PCB CHARACTERISTICS AND FATE AND TRANSPORT

PCB is a commonly used abbreviation of the formal name of a group of synthetic organic chemicals called polychlorinated biphenyls. PCB mixtures are made up of 209 possible congeners that describe a specific molecular configuration of up to 10 chlorine atoms substituted on two benzene rings (ATSDR 2001). PCB congeners with the same number of chlorine atoms are grouped into subcategories referred to as PCB homologs (U.S. EPA, 2012a). Mixtures of PCB congeners were manufactured and sold in the U.S. staring in 1929 under a variety of trade names, the most common being the Aroclor series (U.S. EPA, 2012b).

Between 1929 and 1979, PCBs were used for a variety of purposes but were found primarily in closed systems and heat transfer fluids such as those found in transformers, capacitors and fluorescent light ballasts. PCBs were also incorporated in some plasticizers as well as hydraulic fluids and lubricants. (Oregon DEQ, 2012).

Since PCBs do not naturally occur in the environment, PCBs detected in air, water and soil are a result of activities relating to the manufacture, use, and disposal of PCBs. In the past, PCBs have entered the environment during accidental spills and leaks during PCB transporting or from leaks and fires in products containing PCBs. Today, PCBs still enter the environment from a variety of sources including hazardous waste sites, improper industrial or commercial waste disposal, and uncontained leaks from old electrical transformers. (ATSDR, 2001)

PCBs have a relatively low vapor pressure that reduces their potential to volatilize. They are also non-polar and therefore are only slightly soluble. This non-polarity and low solubility makes PCBs bind strongly to soils and sediment. PCBs enter surface waters carried by contaminated soil particles via surface water runoff (Oregon DEQ, 2012). Reducing the potential for sediment transport at PCB sites reduces the potential for PCB contributions to surface water.

Without remediation, PCBs can remain in the environment for a very long time because they are very stable and do not readily breakdown. PCBs can also bioaccumulate in fish (ATSDR, 2001). Concerns over bioaccumulation of PCBs in fish led to the development of PCB total maximum daily loads (TMDLs) for PCB impaired water bodies.

3. POTOMAC WATERSHED PCB TMDL APPLICABILITY TO FORT BELVOIR MS4 PERMIT

The TMDL of PCBs for tidal portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia, were developed by the Interstate Commission on the Potomac River Basin as a joint effort for the regulatory agencies the District of Columbia Department of the Environment (DDOE), the Maryland Department of the Environment (MDE), and the VDEQ (Interstate Commission on the Potomac River Basin, 2007). The purpose of the TMDL development is to address waterbodies impaired by PCBs in accordance with Clean Water Act (CWA) Section 303(d) and U.S. EPA regulations at 40 CFR §130.7(c)(1) to prevent PCB concentrations in fish from exceeding jurisdictional thresholds for human consumption.

Baseline and TMDL PCB concentrations were determined for 28 impaired waterbodies within the Potomac and Anacostia Rivers watershed. The TMDLs are the sum of waste load allocations (WLA), load allocations (LA), and a margin of safety (MOS). WLAs cover permitted point sources that potentially contribute PCB loads including wastewater treatment plants, regulated stormwater (MS4 permits), and combined sewer overflows. LAs include possible PCB loads from tributaries, non-point source runoff, atmospheric deposition to tidal water surface, and identified contaminated sites. MOS refers to uncertainty in relationship between pollutant loads and quality of receiving water.

The Fort Belvoir MS4 permit falls under the WLA portion of the TMDL. While individual wastewater treatment plants are assigned a specific maximum load and target reduction and combined sewer overflow (CSOs) are assigned a percent reduction, possible contributions from regulated stormwater are addressed by Best Management Practices (BMPs). The 2007 Potomac Watershed PCB TMDL study states that "Upon approval of the TMDL 'National Pollutant Discharge Elimination System (NPDES)-regulated municipal stormwater and small construction storm water discharges effluent limits should be expressed as BMPs or other similar requirements, rather than as numeric effluent limits' (U.S. EPA 2002)." (Interstate Commission on the Potomac River Basin, 2007). The 2007 PCB TMDL study also states, "The U.S. EPA recognizes that available data and information are usually not detailed enough to determine WLAs for NPDES regulated stormwater discharges on an outfall-specific basis (U.S. EPA, 2002). Therefore, in the tidal Potomac watershed, loads from the regulated NPDES stormwater outfalls will be expressed as a single stormwater WLA for each impaired waterbody." (Interstate Commission on the Potomac River Basin, 2007).

Any future estimates of PCB contributions from Fort Belvoir MS4 permit discharges will be compared to the potentially impacted water body WLA to determine if further action is required. The impaired waterbodies under the Fort Belvoir MS4 permit coverage include Accotink Creek, Dogue Creek, Pohick Creek, and Gunston Cove. The permitted stormwater WLA for each of these impaired water bodies is presented in Table 1. The waterbodies are presented in Figure 2.

Table 1. Permitted Stormwater WLA for Impaired Waterbodies Impacted by Fort Belvoir MS4 Permit

Impaired Waterbodies	Units	Wasteload Allocation for Regulated Stormwater
Accotink Creek	g PCBs/year	0.0992
Dogue Creek	g PCBs/year	20.2
Gunston Cove	g PCBs/year	0.517
Pohick Creek	g PCBs/year	7.58

Source: Interstate Commission on the Potomac River Basin, 2007.

4. FORT BELVOIR PCB TMDL ACTION PLAN FOR SMALL MS4 PERMIT

4.1. PCB TMDL ACTION PLAN

Information provided in this Action Plan supports compliance with permit conditions regarding the PCBs TMDL as described in the 2011-2012 Fort Belvoir MS4 Annual Report (Fort Belvoir, 2012a). Fort Belvoir identified action items and documented action summaries are presented in Table 2.

Table 2. Actions Completed and Documented

MS4 Permit Citation	Action Items	Documentations
Section 1.B.2	Document historical use of PCBs at Fort Belvoir to determine extent of drainage of PCB storage areas to impaired waters (Accotink Creek, Dogue Creek, Pohick Creek, and Gunston Cove).	PCB Historic Use Inventory Summary (Section 4.2)
Section 1.B.6.a-b	Characterize runoff (Conduct fall/spring sampling) of areas where PCBs are currently stored, have been transferred, transported, or historically disposed of in a manner that would expose it to precipitation	Summary of Resource Conservation and Recovery Act (RCRA) Closure review, Site Analysis, and Sampling and Analysis Plan (SAP) (Sections 4.3-4.4 and Section 5)
Section 1.B.6.c	Determine if BMPs currently being used are sufficient to address PCB issues. If not, develop and implement a schedule to minimize discharge of PCBs.	BMP Analysis Summary (Section 4.5)
Section 1.B.5	Perform an outfall reconnaissance inventory (ORI)	ORI completed in November, 2012 (Appendix B.1)

4.2 PCB HISTORIC USE INVENTORY ANALYSIS

The historic use inventory resulted in the identification of 11 sites where PCBs are currently or have been historically stored, transferred, transported, or spilled in a manner that would have exposed them to precipitation.

The 11 sites are listed in Table 3 below along with the site descriptions, site solid waste management unit (SWMU) IDs if applicable, if the site is past or present, and a brief description of known PCB activity at the site. The relative locations of all 11 sites at Fort Belvoir are illustrated in Figure 2.

Table 3. List of PCB Historic Use Sites

Site Descriptions	SWMU IDs	Historic Use	PCB Activity
Former Coal Storage Area	A23	Past	Transformer storage - One time PCB Spill
Former Defense Property Disposal Office (DPDO) Storage Area	A24	Past	Transformer storage - One time PCB Spill
Former BLDG632 Hazardous Waste Storage Area	B03	Past	Storage included PCB contaminated materials
Former BLDG633 Hazardous Waste Storage Area	B04	Past	Storage included PCB contaminated materials
Former Building 1430 Transformer Storage Area	B09	Past	Transformer storage - Some transformers contained PCBs, staining from leaks observed
Building 190 Former Indoor Storage Room	B10	Past	Storage included PCB containing equipment
Former Asphalt Storage Pad near Building 2596	L03	Past	Transformer storage - PCB content unknown, staining from leaks observed
Hangar 3126 Former outdoor concrete pad transformer area	L04	Past	Transformer location - Some transformers contained PCBs, staining from leaks observed
Former Concrete Pad Transformer Storage Area	L47	Past	Transformer storage - Some transformers contained PCBs, staining from leaks observed
Building 1490 Hazardous Material Storage Area	N13	Past	Storage included PCB contaminated materials
Building 1495 Outdoor Transformer Storage Area	NA	Present	Transformer storage - Some transformers contained PCBs, leaks and staining observed

NA: Not available as it is unassigned.

Of the 11 historic sites, PCBs were actively used in transformers at one site, Hanger 3126 (L04). At the remaining 10 sites, PCBs were not in active use, but were stored usually in the form of transformers that contained PCBs. PCBs were officially reported as spilled in a manner that would expose PCBs to precipitation at two (2) sites, the Former Coal Storage Area (A23), and the Former Defense Property Disposal Office (DPDO) Storage Area (A24). During past site visits, transformer leaks or evidence of past leaks in the form of stains were observed at four (4) locations: Building 1430 (B09) (CH2M Hill, 1992), Building 2596 (L03) (Kearney, 1988), Hanger 3126 (L04) (CH2M Hill, 1992), and Former concrete pad (L47) (Kearney, 1988). The citations reference the most recent site visit during which evidence of leaks was observed. No evidence of past leaks was observed at these sites during a November 2012 site visit made by representatives from Fort Belvoir and Tidewater. On November 5, 2013, representatives from Fort Belvoir and Tidewater completed the site visit ORI visiting of 10 of the 11 PCB sites. Details from the ORI are documented in Appendix B.1. A recent transformer leak was observed between June and October 2012 at Building 1495 with staining visible and containment measures in place as of November 2012.

The following figures present the site maps and the summary of historic sampling data are presented in Appendix A. Detailed approaches for the PCB historical use inventory are presented in Appendix B.1 and the detailed PCB historical use analysis and sampling point determination is presented in Appendix B.2.

- A23: Figure 3 and Appendix A, Table A-1
- A24: Figure 4 and Appendix A, Table A-2
- B03: Figure 5 and Appendix A, Table A-3
- B04: Figure 5 and Appendix A, Table A-4
- L47: Figure 5 and Appendix A, Table A-5
- B09: Figure 6 and Appendix A, Table A-6
- B10: Figure 7 and Appendix A, Table A-7
- L03: Figure 8 and Appendix A, Table A-8
- L04: Figure 9 and Appendix A, Table A-9
- Building 1495: Figure 10 and Appendix A, Table A-10
- N13: Figure 11.

4.3 SUMMARY OF RCRA CLOSURE REVIEW AND SITE ANALYSIS

A review of the RCRA Closeout Reports found documentation for site closeout of 4 sites, Building 632 (B03), Building 633 (B04), Building 190 (B10), and Building 1490 (N13). Closure date and justification are provided in Table 4.

Building 632 (B03), Building 633 (B04), Building 190 (B10), and Building 1490 (N13) will be excluded from further action because of the above closure justifications that confirm that the sites do not pose a risk of contributing PCBs to impaired waterbodies through stormwater discharge. A detailed site map for B03 and B04 is provided in Figure 5. Site maps for B10 and N13 are shown in Figures 7 and 11, respectively. Appendix A contains Tables A-3, A-4, and A-7 summarizing historic sampling data from sites B03, B04 and B10 respectively. Appendix C contains copies of the closure confirmation letters. The remaining sites are addressed individually.

Table 4. Site Closure Dates and Justifications

Site name	SWMU ID	Closure Date	Closure Justification
Former Building 632 Hazardous Waste Storage Area	B03	9/03/1997	• Site closed in accordance with VDEQ approved closure plan. • Contents of buildings were properly disposed • Buildings demolished and materials properly disposed • Concrete slab floorings and 2ft of underlying material excavated and properly disposed • 8 soil samples collected at each site, all non-detect for PCBs. • Excavation backfilled (Fort Belvoir, 1996a and 1996b)
Former Building 633 Hazardous Waste Storage Area	B04	9/03/1997	
Building 190 Former Indoor Storage Room	B10	5/21/1999	• No documented spills or releases related to the storage of PCBs • Major renovations of the building including the storage area were completed in 2002-2003. (Fort Belvoir, 2012b)
Building 1490 Hazardous Material Storage Area	N13	07/06/2012	• No documented spills or releases into the environment. (Fort Belvoir, 2012b) • Indoor storage area limiting potential for exposure to precipitation

4.3.1 Former Coal Storage Area (A23)

A23 was the site of a one-time PCB spill that was reported to U.S.EPA in March 1979 as presented in Figure 3. According to records, 197 liters of PCB coolant leaked from two vandalized electrical transformers onto a concrete pad where transformers were previously stored, and subsequently flowed onto adjacent soil (Fort Belvoir, 1997). Extensive remediation of the site took place during 1982-1983 in which 2,700 ft^2 of concrete slabs were removed in 4 by 6 ft sections. The concrete slabs as well as contaminated sediments excavated from the adjacent drainage ditch were transported off site for disposal at a facility approved to receive PCB waste. Soil samples were collected from the areas where the concrete was removed and if the PCB concentration was less than 50ppm, the area was filled with at least 2 feet of clean fill and re-vegetated (Fort Belvoir, 1981). While not explicitly stated in the 1981 letter (Appendix C) explaining the planned cleanup activities (Fort Belvoir 1981), it is assumed that if the PCB concentration was greater than 50ppm additional excavation was completed prior to backfilling as the 1983 letter (Appendix C) states, "The covering of the cleanup sites with 2 feet of clean earth progressed as each section of the spill site was cleaned to levels below 50ppm of PCBs (Fort Belvoir, 1983)". The cleanup plan proposed in 1981 received a letter of concurrence from U.S.EPA (U.S.EPA, 1981). The 1981 letter from U.S. EPA indicating agency concurrence with the proposed cleanup plan is also provided in Appendix C. Historical sample data is summarized in Table A-1, Appendix A. The remediation efforts resulted in the site having been cleaned up to a level in accordance with 1977 Clean Water Act (CWA) and 1979 Toxic Substances Act (TSCA) (Fort Belvoir, 1983).

Although Site A23 is the site of a PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be deeper than 2 ft below ground surface (bgs) preventing exposure to precipitation. It is unlikely that any residual PCBs present at the site would discharge to impaired water bodies. In support of this conclusion, sampling completed in 2012 in conjunction with an industrial discharge permit application showed non-detect for PCB constituents at Outfall 007 (as presented in Table A-1, Appendix A). Outfall 007 receives inflow from the two drains located at site A23. Additionally, PCBs are carried primarily by sediment and the partially wooded nature of the site would reduce potential for such sediment travel. Stormwater at A23 flows to unnamed tributary (intermittent at the area closest to the site) to Gunston Cove (Gunston Cove is presented in Figure 2).

Conclusion: No Further Action.

4.3.2 Former DPDO Storage Area (A24)

A24 was the site of a one-time PCB spill that was reported to U.S. EPA in March 1979. According to records, 163 liters of PCB coolant spilled from improperly stored electrical transformers contaminating the surrounding soils (Fort Belvoir, 1997). The spill location is shown in Figure 4. Extensive remediation of the site took place during 1982-1983 that included delineation of PCB contaminated areas within the DPDO yard, onsite containment, and excavation of contaminated soil. Based on contamination delineation, soil was excavated to four feet in the areas of highest contamination. The entire area of the PCB spill was covered with 2 ft of clean earth fill and vegetated. No excavation of stream sediment was required as all PCB concentration detections from stream sediments were below 50 ppm (Fort Belvoir, 1981). The 1981 letter from the U.S. EPA (Appendix C) approving the proposed cleanup plans for A23 old coal yard also includes clean plan for the A24 DPDO yard. Historical soil sample data is summarized in Table A-2, Appendix A. The remediation efforts resulted in the site being cleaned up to a level in accordance with the CWA and TSCA regulations (Fort Belvoir, 1983).

Although site A24 is the site of a PCB release, it has undergone extensive remediation. Based on excavation and backfill information, any residual PCB contamination would be below 2 ft bgs preventing exposure to precipitation. It is unlikely that any residual PCBs present at the site would discharge to impaired water bodies. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for such sediments to travel. Stormwater at A24 flows to an unnamed tributary (intermittent at the area closest to the site) to Accotink Bay. (Accotink Bay is presented in Figure 2).

Conclusion: No Further Action.

4.3.3 Former Building 1430 Transformer Storage Area (B09)

B09 was a former transformer storage area located at Building 1430 as shown in Figure 6. Transformers were stored both indoors and outdoors at this site. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe samples were collected in 1997 in accordance with the SWMU corrective action closure plan. The data summary is in Table A-6, Appendix A. All results were non-detect for PCBs, leading to the conclusion that the site had not been impacted and should be recommended for closure (Fort Belvoir DPW ENRD, 2012). Figure 6 shows the location of B09.

While transformers containing PCBs were stored at B09, secondary contaminant was present. Prior to 1991, secondary containment consisted of two metals pans where the transformers were stored. In 1991, the metals pans were replaced with the installation of secondary contaminant consisting of a concrete berm and sealed floor. Even though leaks were observed at the site, there is no indication that the environment was negatively impacted by PCBs due to the secondary containment. The area is fully paved and while there are no direct drainage swales, the closest stream that is approximately 40 ft to the north-northwest, is an unnamed tributary that flows to Accotink Creek. The absence of PCBs at the site and lack of direct drainage leads to the conclusion that it is unlikely B09 would discharge PCBs to impaired water bodies.

Conclusion: No Further Action.

4.3.4 Former Asphalt Storage Pad near Building 2596 (L03)

L03 was not considered as an official PCB storage area. In 1988, transformers were reported as being located at the site and the presence of fluid staining the asphalt was noted (Kearney, 1988). However, no known sampling occurred at the site and there is no documentation of PCB contamination at the site as presented in Figure 8.

The area that was once the asphalt pad has been demolished and redeveloped as part of a parking lot for Humphreys Engineering Center. This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, and to Dogue Creek. It is unlikely the area described by L03 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

Environmental soil sampling as part of the Phase I investigation work was started at L03 in winter 2012. PCB results from this sampling will be provided as part of the annual reporting process once results are available. A final determination of whether stormwater characterization sampling is required for L03 will be made based on the sampling results. If stormwater characterization sampling is required, a sampling plan to complete the required characterization will be included as part of the annual reporting process..

Conclusion: Recommended No Further Action pending PCB sampling results from Phase I investigation and final site determination to be included in 2012-2013 Annual Report.

4.3.5 Hangar 3126 Former Outdoor Concrete Pad Transformer Storage Area (L04)

L04 was an outdoor concrete pad that housed active transformers as shown in Figure 9. Leaking fluid was visible in 1988 (Kearney, 1988) which would have been exposed to precipitation and potentially impact an open waterbody. Soil samples collected in 1997 confirmed the absence of PCBs in soils at the site above laboratory detection limits (Fort Belvoir, 1998). The summary of the soil sample data collected is presented in Table A-9, Appendix A.

There is no longer any evidence of the transformer area and the site has been redeveloped as a picnic and barbeque area and is now covered with gravel. Any residual PCBs at the site were below the laboratory detection limits and the area would now be covered by gravel and no longer exposed to precipitation. Additionally, a grassy area between L04 and the nearest drainage swale would restrict sediment movement reducing the potential for PCB discharge. The site has been recommended for RCRA closure. Stormwater in the area of L04 would flow to drainage swales to an unnamed tributary to the Accotink Creek

Conclusion: No Further Action.

4.3.6 Former Concrete Pad Transformer Storage Area (L47)

Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area as shown in Figure 5. The pad was approximately 40 ft by 8 ft and transformers were noted as being stored on wooden pallets over bare ground to the south of the pad (CH2M Hill, 1992). The pad was located outside and transformers were exposed to precipitation. However, there were no reportable releases. Even though stains on the pad were reported it is unknown whether the staining liquid contained PCBs since the transformers at the site were being held for PCB testing.

The pad has been removed and the site is now wooded with tall grass, medium brush, and young and mature trees. The location of the former concrete pad is shown in Figure 5. This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove. Since PCBs are carried primarily by sediment, the thickly wooded nature of the site would reduce the probability for potentially contaminated sediments to travel. It is unlikely L47 would discharge PCBs to impaired water bodies and therefore the site is recommended for No Further Action.

Environmental soil sampling as part of the RCRA Facility Investigation (RFI) Phase I investigation work started at L47 in winter 2012. PCB results from this sampling will be provided as part of the annual

reporting process once results are available. The sampling results will be used to make a final determination of whether stormwater characterization sampling is required for L47. If PCB sampling is required, a sampling plan to complete the required characterization will be included as part of the annual reporting process.

Conclusion: Recommended No Further Action pending PCB sampling results from Phase I RFI and final site determination to be included in 2012-2013 Annual Report.

4.3.7 Building 1495 Outdoor Transformer Storage Area

The PCB site at Building 1495 consists of the northeast corner of the adjacent parking lot as presented in Figure 10. PCB containing transformers were stored in the area and were exposed to precipitation. In 2012, ENRD received reports of fluid leaking from the transformers. The transformers were relocated inside Hazardous Waste Disposal Building (Building 1495) and later removed properly. Upon the relocation of the transformers to the building, aroclor 1260 was detected in two soil samples as presented in Table A-10, Appendix A. Stains are visible on the asphalt at the site and absorbent and containment materials placed around the affected areas were observed during the site visit in November 2012.

The site has not been remediated. While the asphalt is surrounded by grass, there are a drainage channels to the North, South and East of the site. The northern channel is concrete lined which would facilitate sediment transport. This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek. Since PCBs are currently present at the site and there are nearby drainage features stormwater characterization is recommended.

Conclusion: Stormwater Runoff Characterization and Sampling Required.

4.4 SUMMARY OF SITE RECOMMENDATIONS

Based on the review of PCB historic use inventory records and the RCRA closure documents, the recommendations identified are summarized in Table 5.

Table 5. Summary of Site Analysis Recommendations

SWMU IDs	Site Name	Recommendations
A23	Former Coal Storage Area	No Further Action
A24	Former DPDO Storage Area	No Further Action
B03	Former BLDG632 Hazardous Waste Storage Area	No Further Action – Site Closed
B04	Former BLDG633 Hazardous Waste Storage Area	No Further Action – Site Closed
B09	Former Building 1430 Transformer Storage Area	No Further Action
B10	Building 190 Former Indoor Storage Room	No Further Action – Site Closed
L03	Former Asphalt Storage Pad near Building 2596	Recommended No Further Action pending PCB sampling results from Phase I investigation and final site determination to be included in 2012-2013 Annual Report
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	No Further Action
L47	Former Concrete Pad Transformer Storage Area	Recommended No Further Action pending PCB sampling results from Phase I investigation and final site determination to be included in 2012-2013 Annual Report
N13	Building 1490 Hazardous Material Storage Area	No Further Action – Site Closed
NA	Building 1495 Outdoor Transformer Storage Area	Stormwater Runoff Characterization Required

NA: Not available.

4.5 BEST MANAGEMENT PRACTICES (BMPS) ANALYSIS AND IMPLEMENTATION PLAN

The term BMP is commonly used with reference to stormwater when discussing practices that can be implemented to alter quality and/or quantity of stormwater by preventing, controlling, or treating stormwater discharges. The BMP analysis documented below evaluates practices that have been implemented at Fort Belvoir to prevent exposure of PCBs to precipitation and provides recommendations for additional BMPs if they are warranted.

4.5.1 BMP Evaluation

BMPs are most commonly organized into two major groups: 1) structural and 2) non-structural practices as exemplified in Table 6. Structural BMPs can be man-made engineering controls or sometimes naturally occurring features such as a wetland. Non-structural BMPs are generally actions that are taken to influence discharge quality or quantity.

Table 6. Examples of BMPs

Structural BMPs	Non-Structural BMPs
• Infiltration systems • Detention systems • Retention systems • Constructed wetlands • Filtration systems • Vegetated systems • Minimizing directly-connected impervious surface • Miscellaneous and vendor-supplied systems, existing oil/water separators, and hydrodynamic devices	• Facilitating good housekeeping practices such as proper disposal of automotive wastes, household hazardous waste and pet waste, minimizing the use of lawn chemicals, and managing lawn debris • Good maintenance practices such as catch basin cleaning, sweeping, and road and ditch maintenance • Detecting and eliminating illicit discharges • Running educational and outreach programs • Storm drain stenciling • Low impact development and land use planning

MS4 permits require development and implementation of BMPs that address 6 different categories of practices that influence stormwater management. The Fort Belvoir MS4 program plan outlines BMPs for each of the below categories.

- Public Education and Outreach (1.1 – 1.4)
- Public Involvement/Participation (2.1 – 2.3)
- Illicit Discharge Detection and Elimination (3.1 – 3.10)
- Construction Site Stormwater Runoff Control (4.1 – 4.6)
- Post-Construction Stormwater Management in New Development (5.1 – 5.6)
- Pollution Prevention/Good Housekeeping for Municipal Operations (6.1 – 6.8)

Table 7 below lists the existing Fort Belvoir MS4 Program Plan BMPs and evaluates if they address PCB concerns providing recommendations for addressing PCBs where applicable.

Table 7. Fort Belvoir's BMPs Evaluation

Fort Belvoir Existing MS4 Program BMPs		Evaluations and Recommendations
1.1	Support Accotink Bay Wildlife Refuge Environmental Education Center	**Evaluation:** Supporting the environmental education center provides an opportunity to increase awareness of PCBs and the PCB TDML at Fort Belvoir. **Recommendation:** Develop an information sheet to make available that includes: basic facts about PCBs and the PCB TMDL, summary of where PCB were historically found at Fort Belvoir, what has been done to eliminate PCB contamination, and what an individual should do if they see an old transformer.

Fort Belvoir Existing MS4 Program BMPs		Evaluations and Recommendations
1.2	Present Storm Water and Watershed Information on the Belvoir Website	**Evaluation:** Presenting stormwater and watershed information on the Belvoir website provides an opportunity to increase awareness of PCBs and the PCB TDML at Fort Belvoir. **Recommendation:** Develop an information sheet to make available that includes: basic facts about PCBs and the PCB TMDL, summary of where PCB were historically found at Fort Belvoir, what has been done to eliminate PCB contamination and what an individual should do if they see an old transformer.
1.3	Support the Fort Belvoir Storm Drain Stenciling Initiative	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
1.4	Maintain General Watershed Information on the Fort Belvoir Website	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
2.1	Support Volunteer Stream "Clean-Up"	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
2.2	Support Family Housing Occupant Orientation	**Evaluation:** Supporting the family housing occupant orientation provides an opportunity to increase awareness of PCBs and the PCB TDML at Fort Belvoir. **Recommendation:** Develop an information sheet to make available that includes: basic facts about PCBs and the PCB TMDL, summary of where PCB were historically found at Fort Belvoir, what has been done to eliminate PCB contamination, and what an individual should do if they see an old transformer.
2.3	Implement Fort Belvoir Pollution Control Hotline	**Evaluation:** The standard pollution reporting procedures already in place would apply to reporting future potential PCB contamination. **Recommendation:** None.
3.1	Develop, Implement, Update and Support of Geographic Information System (GIS) Data Layers	**Evaluation:** Developing, implementing, updating and supporting GIS data layers provide the opportunity to develop a PCB specific GIS data layer. **Recommendation:** Develop a GIS data layer that includes the locations of past and present PCB sites.
3.2	Develop Methods to Detect Illicit Discharges	**Evaluation:** The standard methods already in place to detect illicit discharges apply to detecting potential PCB contamination. **Recommendation:** None
3.3	Inform Staff of Hazards from Illicit Discharges	**Evaluation:** Informing staff of hazards from illicit discharges provides an opportunity to increase awareness of PCBs and the PCB TDML at Fort Belvoir. **Recommendation:** Develop an information sheet to make available that includes: basic facts about PCBs and the PCB TMDL, summary of where PCB were historically found at Fort Belvoir, what has been done to eliminate PCB contamination, and what an individual should do if they see an old transformer.
3.4	Maintain Compliance with the Existing VPDES Permit	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
3.5	Evaluate Storm Drain Outfalls	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
3.6	Perform Illicit Discharge Detection and Mitigation Procedures	**Evaluation:** The standard illicit discharge detection and mitigation procedures already in place apply to detecting potential PCB contamination. **Recommendation:** None.
3.7	Develop a Plan for Operations that May Affect Storm Water	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
3.8	Perform Routine Operation Assessments and Develop BMPs	**Evaluation:** BMP maintenance that addresses general stormwater concerns would also likely reduce possible PCB contributions. **Recommendation:** Perform routine maintenance, as required, for PCB site specific BMPs.

Fort Belvoir Existing MS4 Program BMPs		Evaluations and Recommendations
3.9	Evaluate Potential Combined Sewer Overflow Connections	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
3.10	Evaluate Storm Water Sampling	**Evaluation:** Storm water sampling provides the opportunity to characterize potential PCB stormwater contributions. **Recommendation:** Develop PCB sampling plan to comply with PCB TMDL requirements.
4.1	Establish a Construction Project Review Procedure	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.2	Communicate the Requirements of the Storm Water Program	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.3	Develop a Tracking System	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.4	Obtain Registration under Virginia Stormwater Management Program (VSMP) for Construction Projects	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.5	Initiate Periodic Site Inspections	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
4.6	Evaluate Emerging Technologies	**Evaluation:** Evaluating emerging technologies that address general stormwater concerns would also likely benefit any future efforts to reduce possible PCB contributions **Recommendation:** None.
5.1	Establish a Construction Project Review Procedure	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
5.2	Develop a Tracking System	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
5.3	Initiate Periodic Site Inspections	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
5.4	Present Sustainable Development Considerations/New Technologies	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
5.5	Audits of Existing Conditions	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
5.6	Corrections to Existing Watersheds	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.1	Develop Installation Operations and Maintenance Training Materials	**Evaluation:** Developing installation operations and maintenance training materials provides an opportunity to increase awareness of PCBs and the PCB TDML at Fort Belvoir. **Recommendation:** Develop a section on PCBs for the installation operations and maintenance materials specifically highlighting transformer storage and reporting of possible PCB leaks. Also make available the information sheet recommended for BMPs 1.1, 1.2, 2.2, and 3.3.
6.2	Support Recycling and HAZMAT Programs	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.3	Support Street Sweeping Activities	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.4	Implement Periodic Inspections and Clean out of Catch Basins	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.

Fort Belvoir Existing MS4 Program BMPs		Evaluations and Recommendations
6.5	Ensuring Functionality of Existing Storm Water Management Structures	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.6	Maintain Spill Response Vehicle/Trailer	**Evaluation:** Standard spill response preparedness would help prevent future potential PCB contributions by ensuring that in the event of a potential future PCB spill, the spill would be cleaned up in a timely manner to reduce the chance of exposure to precipitation. **Recommendation:** None.
6.7	Support Stream Restoration	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.
6.8	Support "Self-help" Programs	**Evaluation:** This BMP does not apply to the PCB TMDL. **Recommendation:** None.

4.5.2 Site Specific BMP Analysis

The most common BMPs at past and present PCBs sites at Fort Belvoir include site remediation, natural vegetation, secondary containment, porous pavement, retention ponds, and spill berms. This section analyzes the site specific BMPs previously used or currently in use at each site. BMPs are distinguished as structural or non-structural. Following each analysis, a conclusion is provided establishing if the existing BMPs are sufficient to address PCB concerns or not. If not, recommendations are made for site specific BMPs.

- **Former Coal Storage Area (A23)**:
  - **Structural BMPs**: A low concrete berm separates the recycling area from the wooded stream to the East that would prevent stormwater from flowing to the adjacent natural channel. Some unplanned tall grasses vegetation has developed near the storm drain at the center of the recycling area that could be helping to improve quality of stormwater.
  - **Non-structural BMPs**: The area underwent extensive remediation. Materials at the area are sorted and stored accordingly suggesting good housekeeping practices.
  - **Conclusion**: Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.

- **Former DPDO Storage Area (A24)**:
  - **Structural BMPs**: The remediation plan from 1981 called for the installation of a sediment trap that would prevent sediment flows from entering the stormwater system. The trap would have been a temporary structure removed after remediation was complete. The area is naturally vegetated with thick brush and mature trees.
  - **Non-structural BMP**: The area underwent extensive remediation.
  - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.

- **Former Building 632 Hazardous Waste Storage Area (B03)**:
  - **Structural BMP:** The area is naturally vegetated with tall grasses, medium brush, and mature trees.
  - **Non-structural BMP**: Not applicable.
  - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.

- **Former Building 633 Hazardous Waste Storage Area B04**:
    - **Structural BMP:** – The area is naturally vegetated with thick brush and mature trees.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.
- **Former Building 1430 Transformer Storage Area (B09)**:
    - **Structural BMPs:** Secondary containment was present at the site in the form of metals pans and then a concrete berm.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.
- **Building 190 Former Indoor Storage Room (B10)**:
    - BMPs are not applicable to this site as the storage area of this site was inside and would not have come into contact with precipitation.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. No site specific BMPs recommended.
- **Former Asphalt Storage Pad near Building 2596 (L03)**:
    - **Structural BMP:** The area is covered with gravel which allows for improved infiltration.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.
- **Hangar 3126 Former Outdoor Concrete Pad Transformer Storage Area (L04)**:
    - **Structural BMP:** The area is close proximity of a retention pond which discharges to natural wetlands.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.
- **Former Concrete Pad Transformer Storage Area (L47)**:
    - **Structural BMP**: The area is naturally vegetated with tall grass, medium brush, and young and mature trees.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. Existing BMPs are sufficient, no site specific BMPs recommended.
- **Building 1495**
    - **Structural BMP:** Secondary containment, in the form of plastic sheeting and a spill berm made of continuous roll gravel bags, has been implemented to prevent possible PCB contamination from leaving the site.
    - **Non-structural BMP**: Not applicable.
    - **Conclusion:** Site analysis recommended stormwater runoff characterization sampling. Existing BMPs are not sufficient to address PCB concerns. The specific sampling plan proposed at the site is discussed in Section 5. Until characterization or site remediation is complete, a good housekeeping BMP should be implemented that prescribes periodic inspections to ensure the spill berms are in good condition and replaced if necessary. Once stormwater characterization or site remediation is complete at the Building 1495

site, the site specific BMPs should be re-evaluated and updated in the following Annual Report.

- **Building 1490 Hazardous Material Storage Area (N13)**:
  - BMPs are not applicable to this site as the storage area of this site was inside and would not have come into contact with precipitation.
  - **Conclusion:** Site analysis recommended no further action resulting from an absence of PCB concerns. No site specific BMPs recommended.

4.5.3 BMP Recommendations Summary and Implementation Plan

General and site specific BMPs recommended for implementation and the schedule for implementation and reporting are provided in Table 8.

Table 8. Recommended BMP Implementation and Reporting Schedule

Type and New BMP ID	BMP Description	Implementation and Reporting Schedule
Site Specific: BLDG1495.1	Periodic site visits to confirm containment materials are intact and replace compromised materials as needed.	Site visits to start March 2013. Findings from periodic site visits and required follow up activities will be summarized in Annual Reports.
General: PCB.1	Develop an information sheet that includes: basic facts about PCBs and the PCB TMDL, summary of where PCB were historically found at Fort Belvoir, what has been done to eliminate PCB contamination and what an individual should do if they see an old transformer. Make information sheet available through Accotink Bay Wildlife Refuge Environmental Education Center, Belvoir website, family housing occupant orientation, annual training on the Stormwater Pollution Prevention Plan (SPPP), and installation operations and maintenance training materials.	Information sheet development will begin during the 2013-2014 reporting cycle. Implementation to start making the information sheet available at the specified venues will extend through October 2014. Status of development and implementation will be summarized in Annual Reports.
General: PCB.2	Develop a GIS data layer that includes the locations of past and present PCB sites.	Development will begin during the 2012-2013 reporting cycle. Status of development will be summarized in Annual Reports.
General: PCB.3	Perform routine maintenance, as required, for PCB site specific BMPs.	To be implemented as required by site specific BMPs for PCBs. Routine maintenance performed will be summarized in Annual Reports
General: PCB.4	Develop PCB sampling plan to comply with PCB TMDL requirements.	Completed and provided as part of this Action Plan. Results from sampling will be reported in Annual Report as described by the plan.
General: PCB.5	Develop a section on PCBs for the installation operations and maintenance materials specifically highlighting transformer storage and reporting of possible PCB leaks.	Section to be developed during the 2013-2014 reporting cycle. Implementation by including PCB section in training materials will begin with the October 2014 SPPP annual training. Status of development and implementation will be summarized in Annual Reports.

Section 1.B.3 of the MS4 general BMP states, "The operator shall integrate an awareness campaign into its existing public education and outreach program that promotes methods to eliminate and reduce discharges of the pollutant identified in the WLA. This may include additional employee training regarding the sources and methods to eliminate and minimize the discharge of the pollutant identified in the WLA. (Virginia Soil and Water Quality Conservation Board, 2008)". The Fort Belvoir MS4 2011-2012 Annual Report noted that "Fort Belvoir's power utility was privatized in July 2007 and Dominion Virginia Power maintains the system. At this time, there are no transformers containing PCBs. Therefore since the PCB source has been eliminated, there is not a need for an awareness campaign to eliminate and

reduce discharges" (Fort Belvoir, 2012). BMPs PCB.1 and PCB.5 will be implemented to enhance existing compliance with Section 1.B.3.

Status on implementation of the recommended general and site specific BMPs will be included in the PCB TMDL section of future Annual Reports.

5. SAMPLING AND ANALYSIS PLAN

To comply with Section 1.B.6 of the MS4 permit, the following plan documents the sampling necessary for the Building 1495 PCB site. Results from the planned sampling will be included in the 2013-2014 Annual Report. Based on the results, the 2012-2013 Annual Report will also provide details of follow up actions planned for the Building 1495 PCB site.

5.1 BUILDING 1495

Stormwater runoff at the Building 1495 PCB site will be sampled twice in one calendar year. Sampling will take place once from October to March and once from April to September.

The collection method will be an instantaneous grab sample, and the sample will be collected within 30 minutes of a rainfall event producing 0.1 inches of rainfall and that occurs at least 72 hours from the previous rainfall event producing 0.1 inch. The 72 hour requirement may be waived in accordance with Section 1.B.6.b if appropriate.

For each sample, a volume of 2 liters of unfiltered runoff will be collected into two 1-liter or one 2.5 liter amber glass jars that are certified PCB free and provided by the laboratory completing the analysis. The samples will be recorded on a laboratory provided Chain-of-Custody form, placed in a hard-sided shipping cooler, properly preserved on ice, protected from breakage or loss, and shipped to the laboratory completing the analysis immediately following the sampling event. The laboratory will analyze the samples within the method hold time of one year as summarized in Table 9. The samples will be analyzed by EPA Method 1668A for PCB congeners. The samples will be analyzed by a VELAP certified laboratory included in the VDEQ list of laboratories performing low level PCB congener analysis (Method 1668) (VDEQ, 2012).

Table 9. Sample Containers, Preservation, and Holding Times for PCB Samples

Method Number and Analysis	PCBs by EPA Method 1668A
Preservatives	Chill to ≤6°C within 15 minutes, but not frozen
Analytical Holding Time	365 days
Sample Volume/ Sample Container	2 x 1 liter or 1 x 2.5 liter Amber Glass Jar

During each sampling event, grab samples will be collected from the two primary sampling locations (MS4-PCB-1495-SW1 and MS4-PCB-1495-SW2) shown in Figure 10. MS4-PCB-1495-SW3 is the backup location of MS4-PCB-1495-SW2. MS4-PCB-1495-SW2 is located within the fenced area of Building 1495 and if that location cannot be accessed, the MS4-PCB-1495-SW3 sample will be collected from the backup location that is located outside of the fenced area.

Once site characterization is complete, the Annual Report will include an annual characterization that estimates the volume of stormwater discharged and the quantity of PCBs in a unit consistent with the WLA in accordance with Section 1.B.7.

6. CONCLUSIONS AND GENERAL PERMIT REISSUANCE

The Building 1495 PCB site is the only site requiring stormwater runoff characterization. The remaining 10 historic PCB locations are recommended for No Further Action based on historical records of remediation, past sampling results, and current site conditions limiting the potential for these sites to discharge PCBs to impaired water bodies.

A sampling plan for site stormwater runoff characterization at the Building 1495 PCB site is provided, and BMPs are developed to minimize potential PCB discharge at the Building 1495 PCB site. Additionally, general BMPs to specifically address PCBs are also developed.

Future Annual Reports will provide BMP status updates as well as new sampling data and site determinations as they are available.

This Action Plan will be updated, as needed, to reflect new or revised TMDL requirements that occur as a result of the reissuance of the general permit. If required, an updated Action Plan will be submitted along with the next Annual Report submitted following the reissuance of the general permit.

Implementing this action plan supports Fort Belvoir compliance with the PCB TMDL requirements applicable to MS4 Permit #VAR040093.

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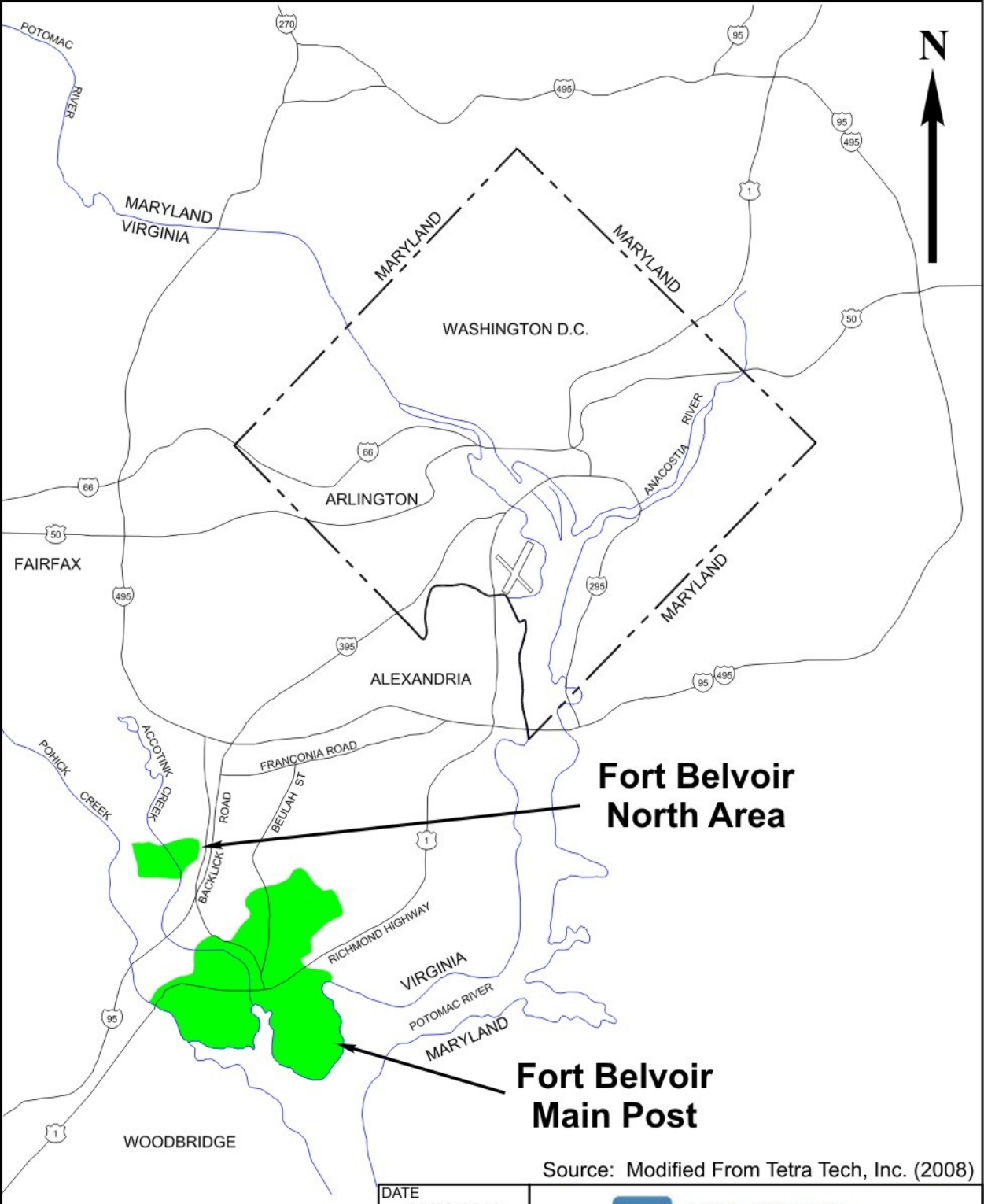
Figures



Source: Modified From Tetra Tech, Inc. (2008)

DATE 05/02/2010	TIDEWATER
DRAWN DAS	**Figure 1. Site Vicinity Map Fort Belvoir, Virginia**
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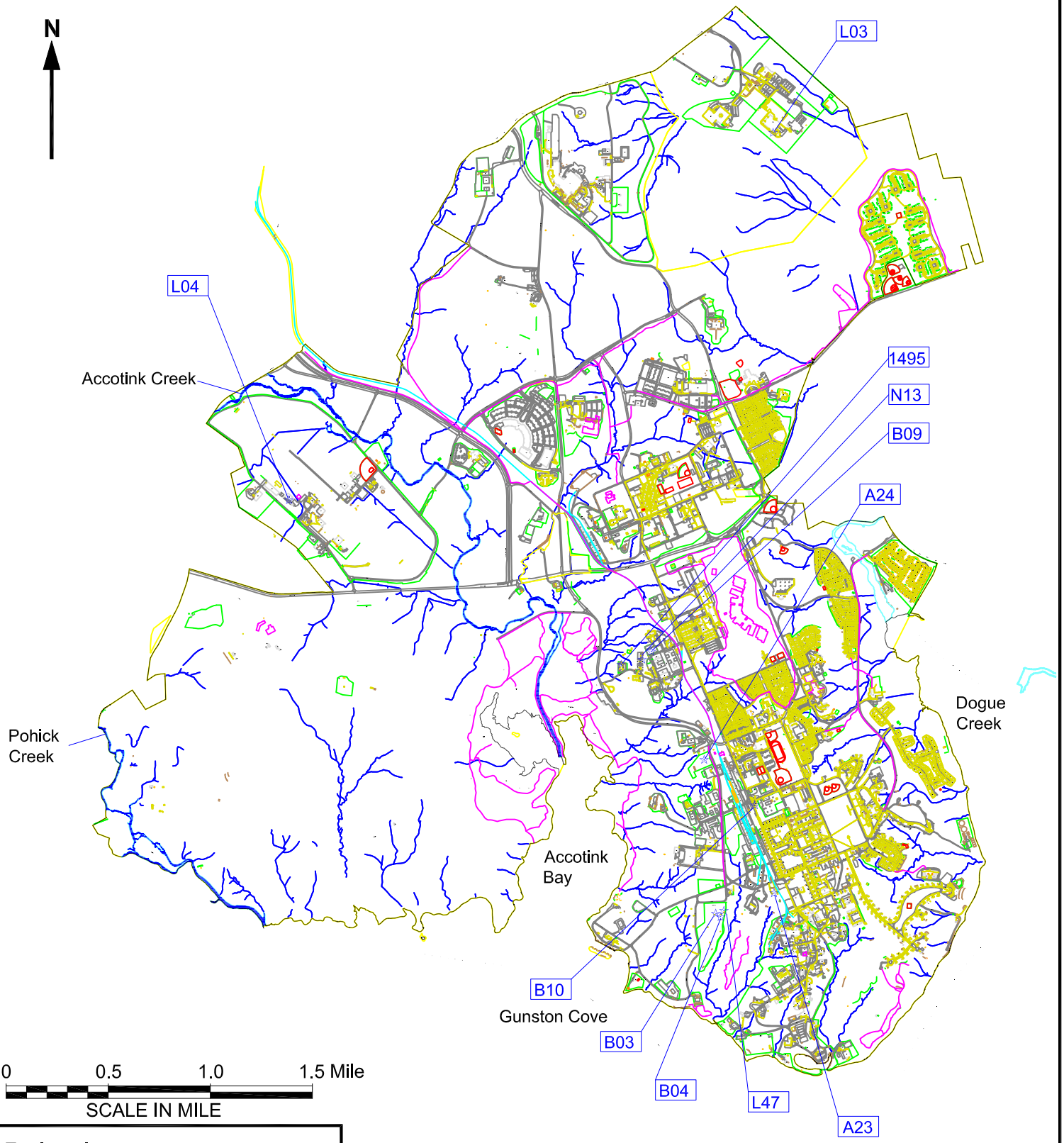
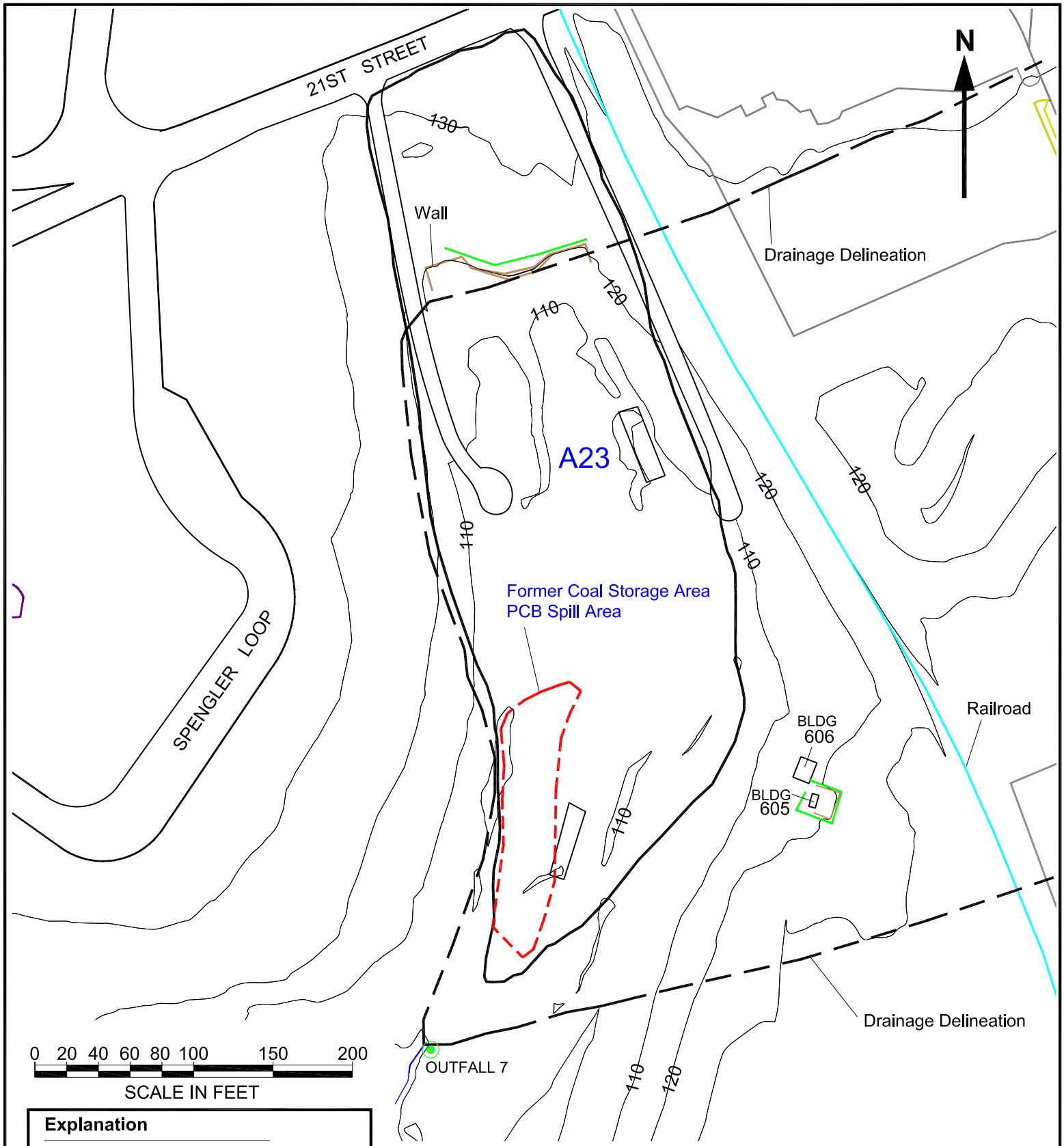
DRAWING F06E14F1.CDR	REV 1.0
PROJECT C5141-100	SCALE NONE SHEET 1/1



Explanation

☆ **Site Locations**

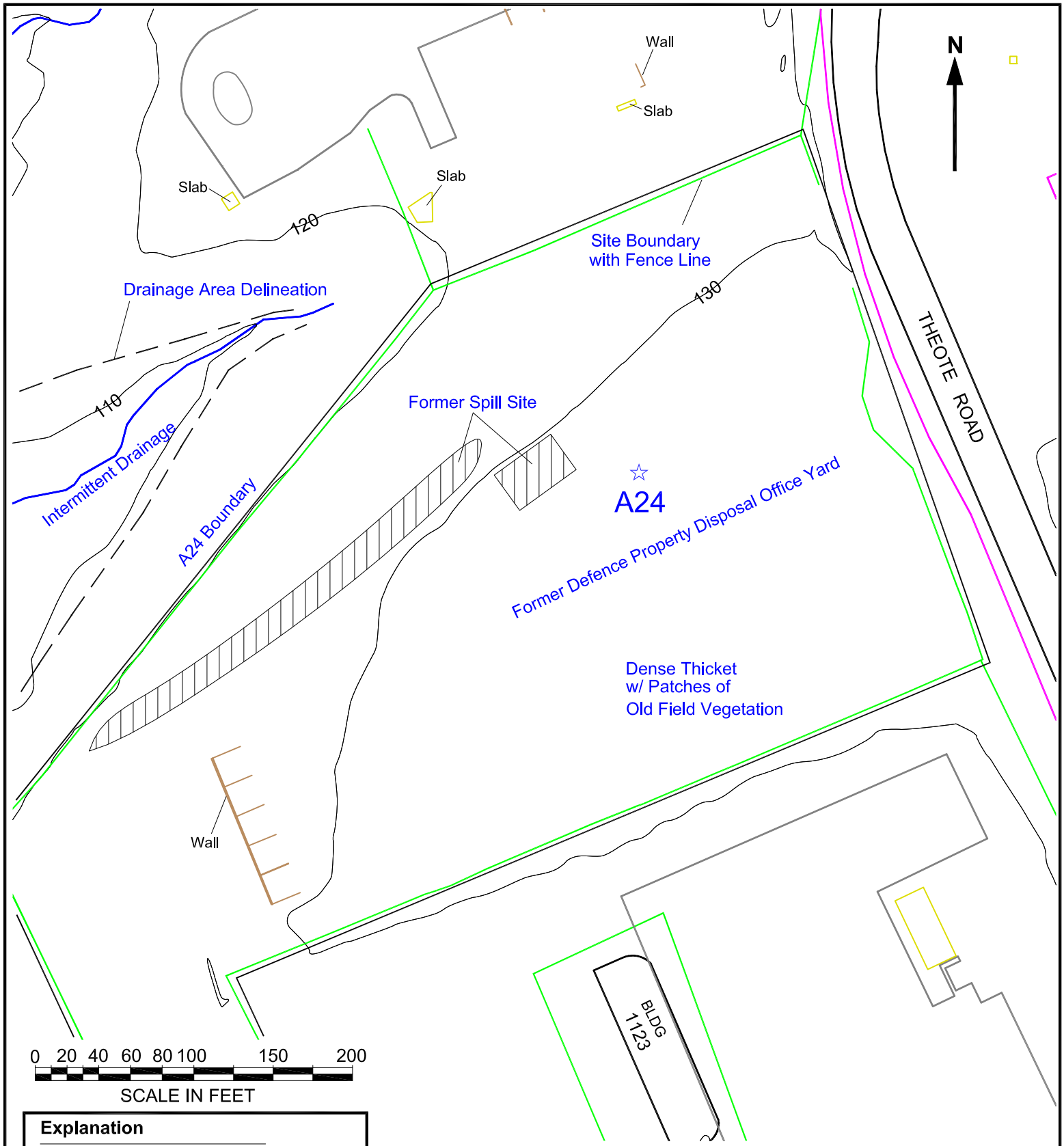
DATE 1/18/2013	TIDEWATER INC		
DRAWN HS	**Figure 2.** **MS4 PCB Action Plan Fort Belvoir Site Map**		
APPROVED WSY	DRAWING : Fig2_MSA_PCB Site Map.dwg		REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET	1/1



Explanation

- Boundary of A23
- Drainage Area Delineation
- Outfall
- 110 Contour Elevation in ft
- 701 Building and Number
- Road
- Wall
- Fence
- Railroad

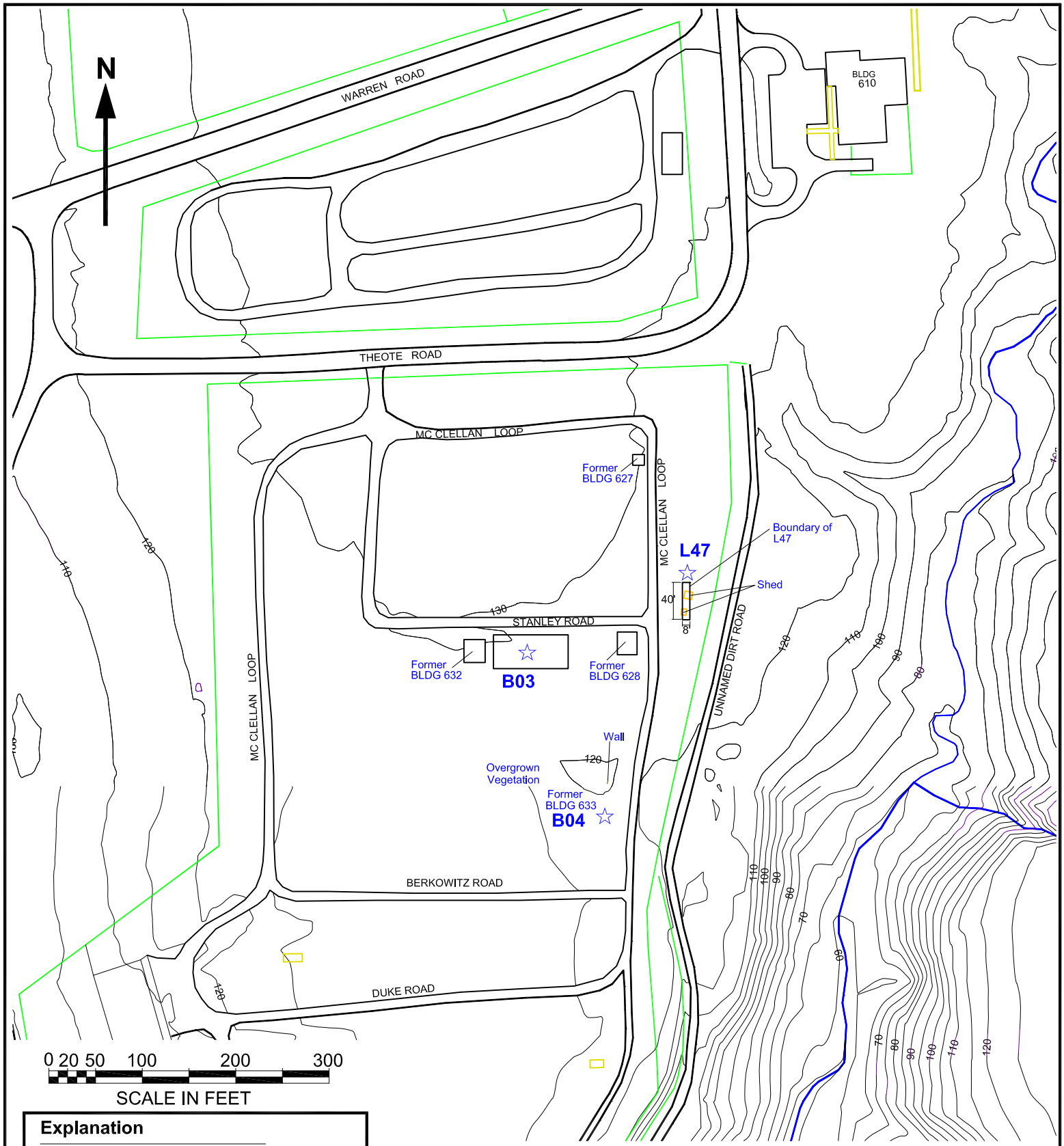
DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Figure 3.** **A23 Former Coal Storage Area Fort Belvoir, VA**
APPROVED WSY	
DRAWING: Fig3_A23_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



Explanation

- Site Location
- Boundary of A24
- Drainage Area Delineation
- 120 Contour Elevation in ft
- 1123 Building and Number
- Road
- Sidewalk
- Fence
- Stream

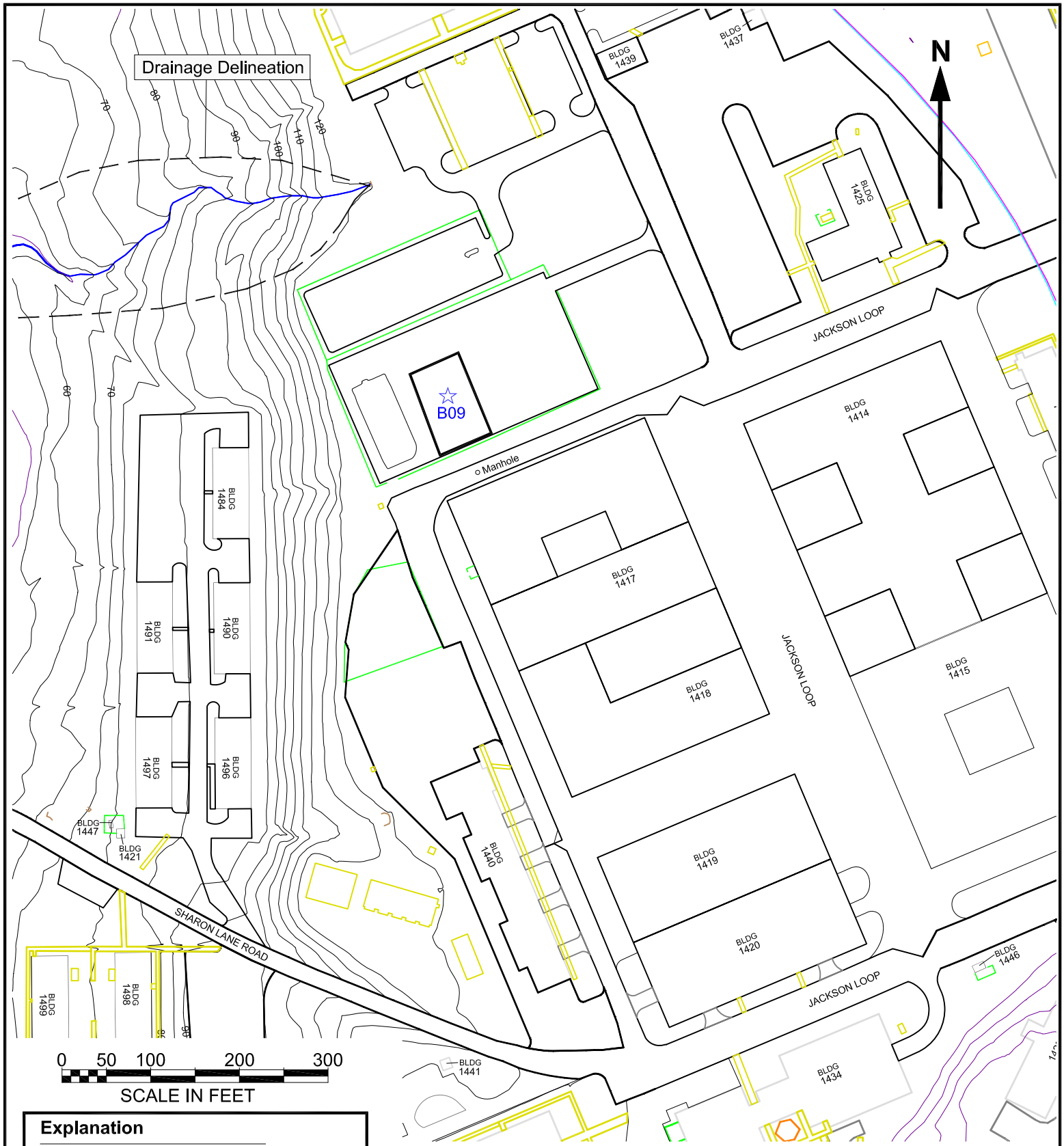
DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Figure 4.** **Site Detailed Location Map A24 (Former DPDO Storage Area) Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig4_A24_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



Explanation

- Site Location
- Boundaries of B03, B04, L47
- Drainage Area Delineation
- 90 Contour Elevation in ft
- 632 Building and Number
- Road
- Slab
- Fence
- Stream

DATE 1/17/2013	TIDEWATER INC
DRAWN HS	**Figure 5.** Site Detailed Location Map for B03/B04/L47 Fort Belvoir, VA
APPROVED WSY	DRAWING: Fig5_B03_B04_L47_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



Explanation

- Site Location
- Drainage Area Delineation
- Manhole
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Figure 6.** **Site Detailed Location Map B09 (Former Bldg. 1430) Fort Belvoir, VA**
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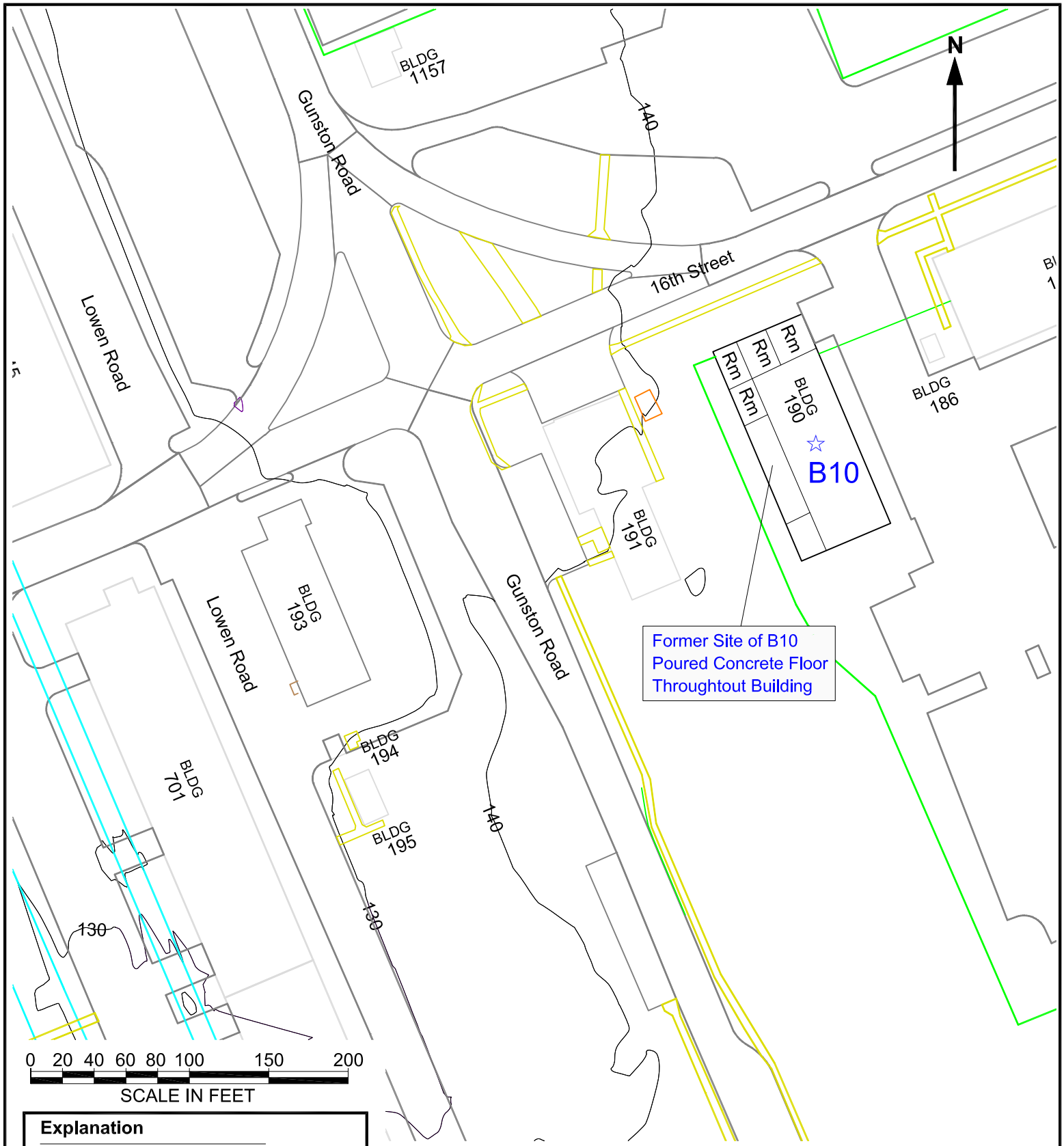
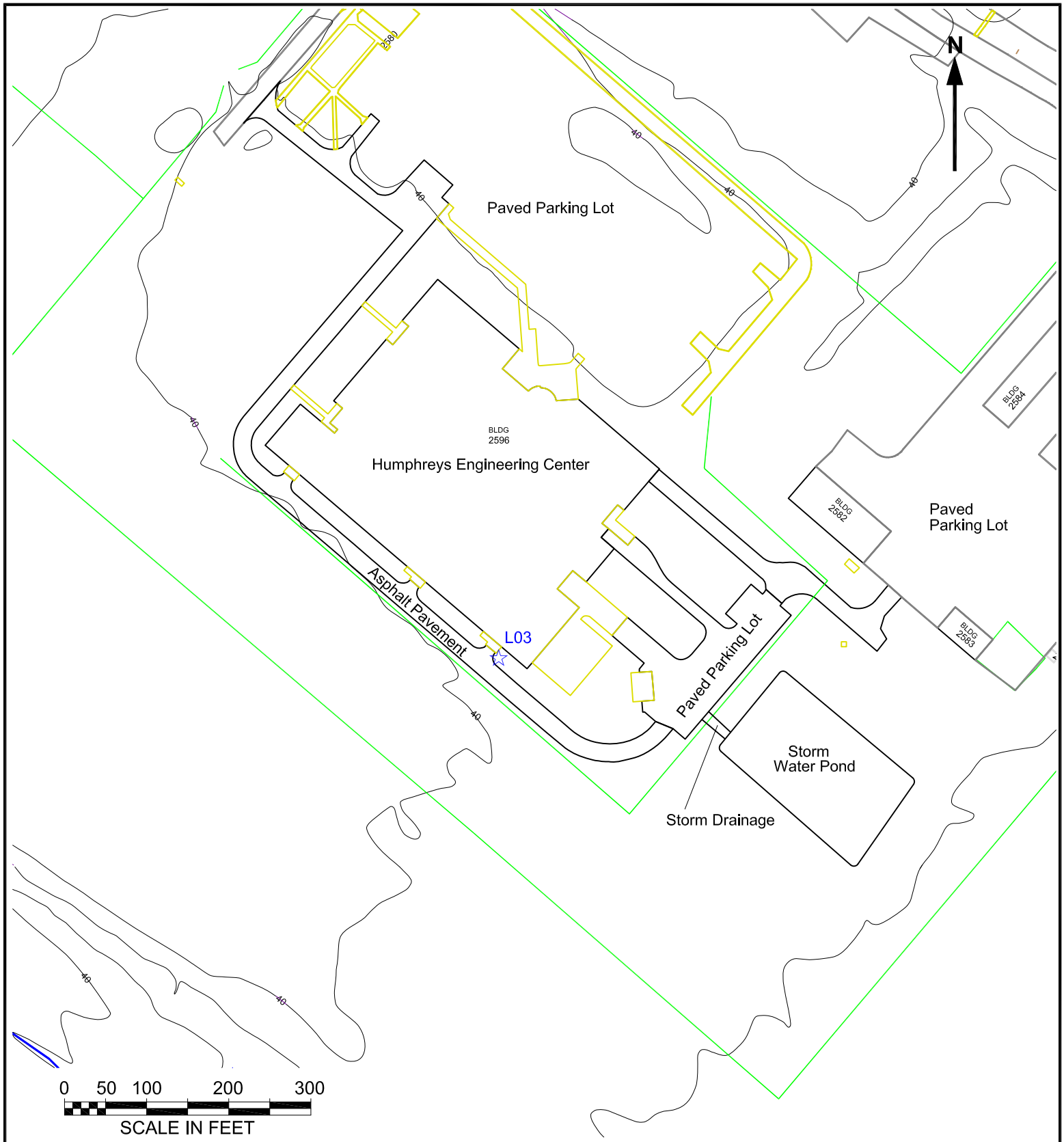
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



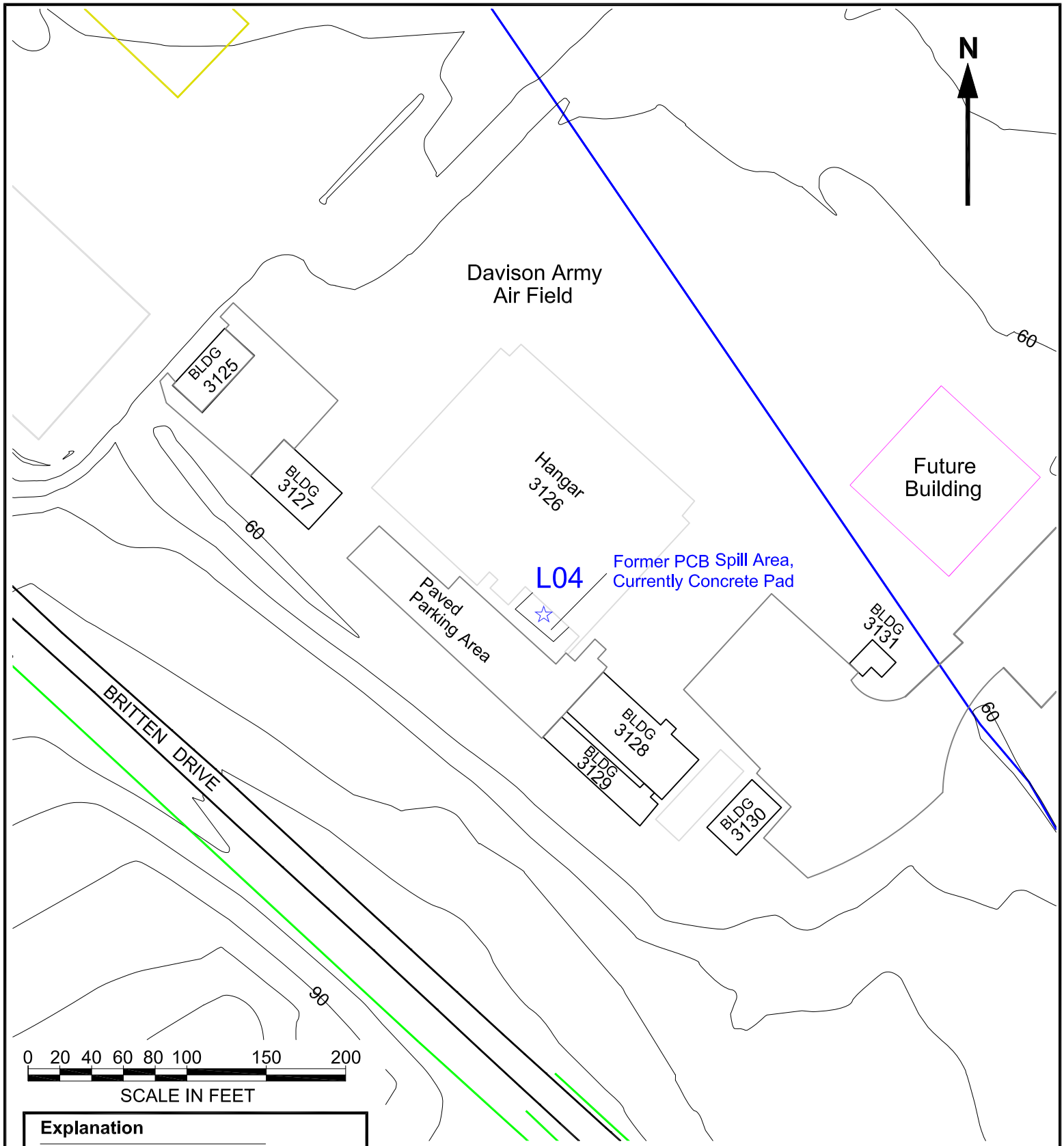
DATE 1/18/2013	TIDEWATER INC
DRAWN HS	**Figure 7.** **Site Detailed Location Map B10 (Former Bldg. 190) Fort Belvoir, VA**
APPROVED WSY	DRAWING: Fig7_B10_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1



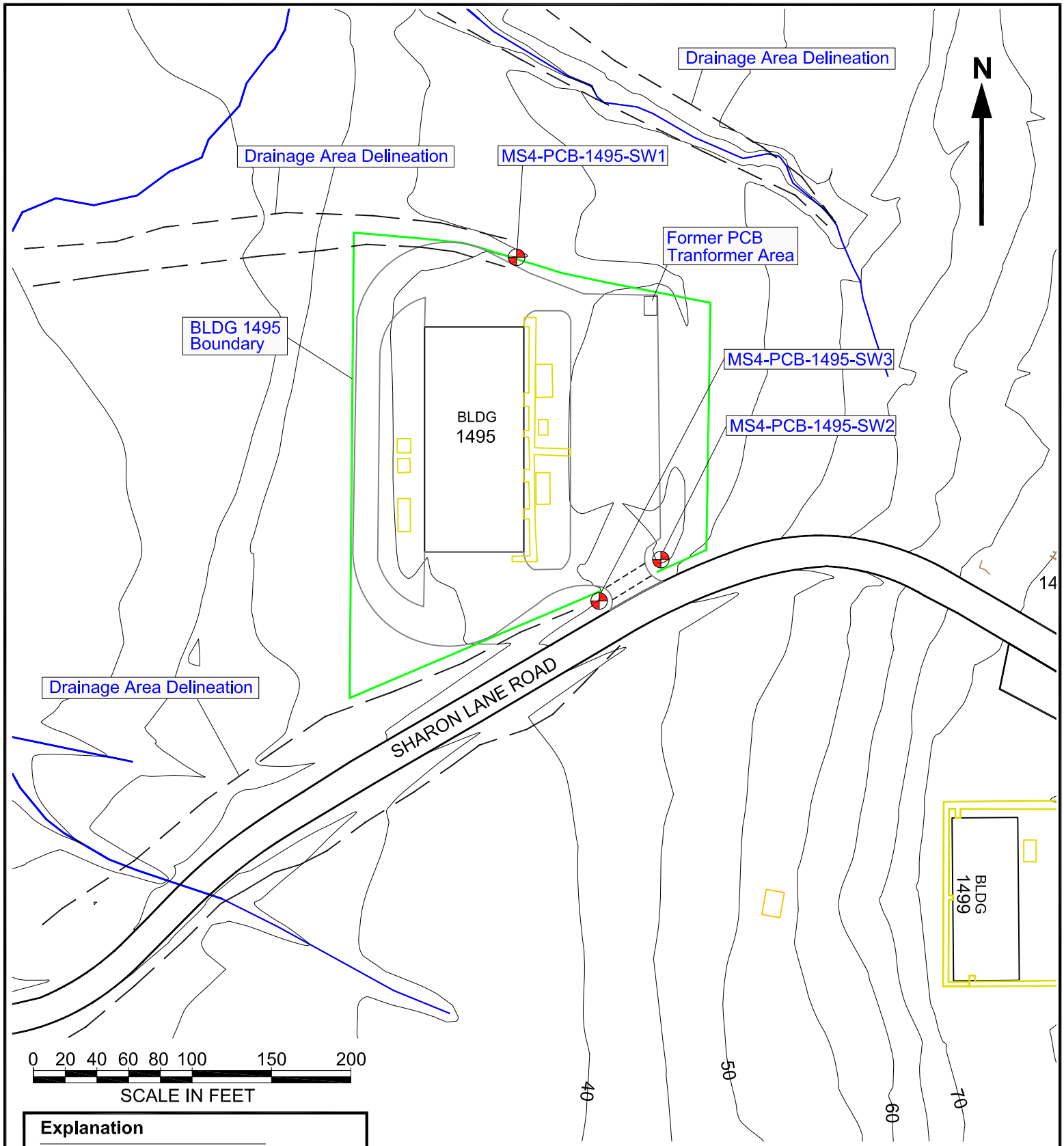
Explanation

- ☆ Site Location
- Drainage Area Delineation
- 40 Contour Elevation in ft
- 2596 Building and Number
- Road
- Sidewalk
- Fence

DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Figure 8.** **Site Detailed Location Map L03 (Paved Asphalt Parking Lot at Bldg. 2596) Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig8_L03_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



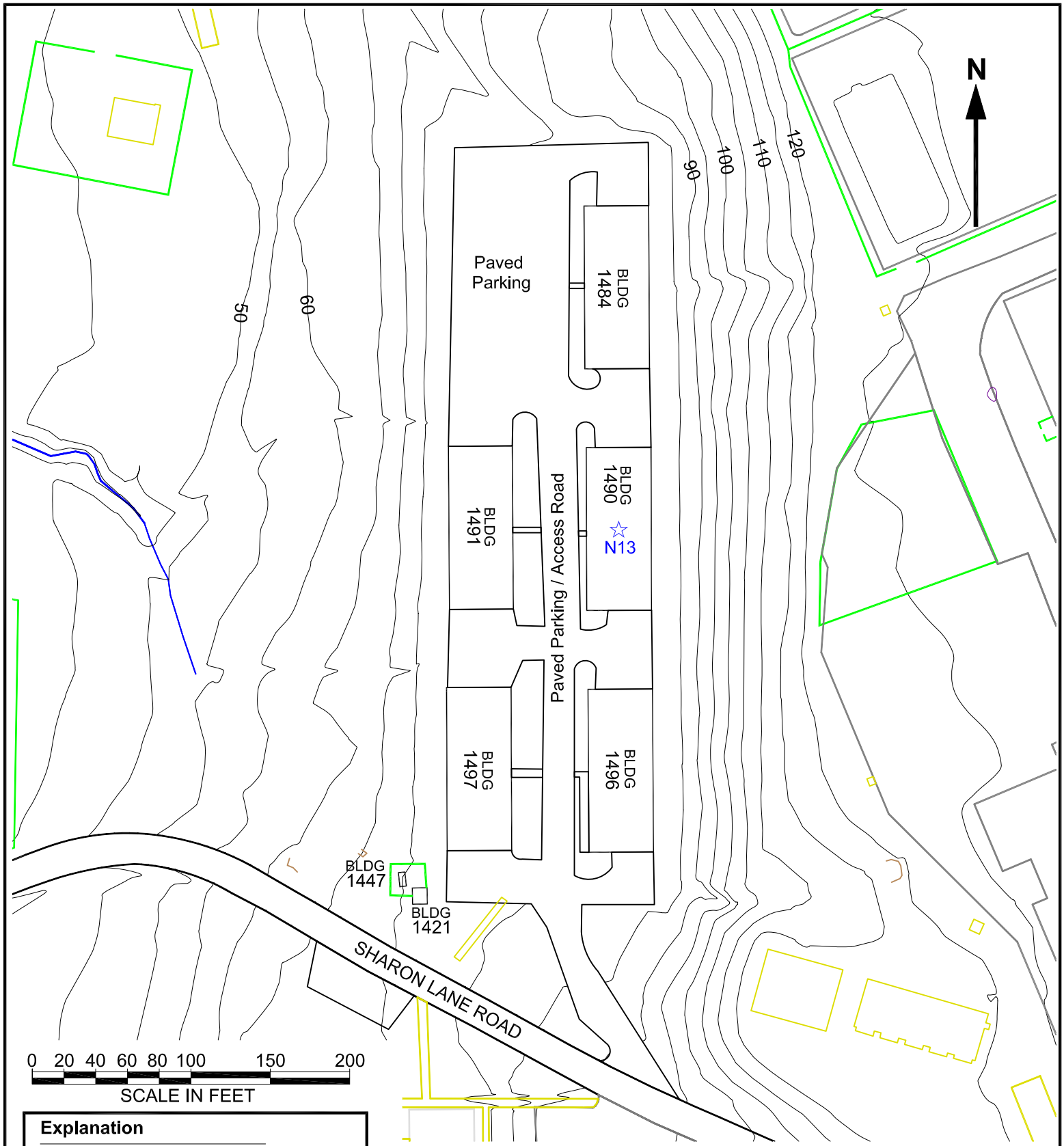
DATE 1/18/2013	TIDEWATER INC	
DRAWN HS	**Figure 9.** **Site Detailed Location Map L04 (Hangar 3126 at Davison Army Air Field) Fort Belvoir, VA**	
APPROVED WSY	DRAWING: Fig9_L04_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



Explanation

- Culvert
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 701 Building and Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/16/2013	TIDEWATER INC	
DRAWN HS	**Figure 10.** Sampling Location at Bldg 1495 (Hazardous Waste Storage Building) Fort Belvoir, VA	
APPROVED WSY	DRAWING: Fig10_1495_Map.dwg	REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC	SHEET 1/1



Explanation

- Site Location
- Drainage Area Delineation
- Proposed Sample Location
- 50 Contour Elevation in ft
- 1492 Building Number
- Road
- Sidewalk
- Fence
- Stream

DATE 1/25/2013	TIDEWATER INC
DRAWN HS	**Figure 11.** Site Location Map N13 (Hazardous Waste Storage Building) Fort Belvoir, VA
APPROVED WSY	DRAWING: Fig11_N13_Map.dwg REV 1.0
PROJECT: 4008-002	SCALE GRAPHIC SHEET 1/1

APPENDIX A

Historic Data Summary Tables and Associated Figures

Tabe A-1. A23 Historical PCB Data

Sample ID	Sample Date	Matrix	Analysis Mehthod	PCB (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Background Sediment 4-PCB Spill Site 2	unknonwn	Soil	NA	1.1	NA	NA	NA	NA	NA	NA	NA
1	5/22/1979	NA	NA	42.6	NA	NA	NA	NA	NA	NA	NA
2	5/22/1979	NA	NA	777	NA	NA	NA	NA	NA	NA	NA
3	5/22/1979	NA	NA	28.1	NA	NA	NA	NA	NA	NA	NA
4	5/22/1979	NA	NA	36.3	NA	NA	NA	NA	NA	NA	NA
5	5/22/1979	NA	NA	1,179	NA	NA	NA	NA	NA	NA	NA
6	5/22/1979	NA	NA	21.1	NA	NA	NA	NA	NA	NA	NA
7	5/22/1979	NA	NA	297	NA	NA	NA	NA	NA	NA	NA
8	5/22/1979	NA	NA	19.3	NA	NA	NA	NA	NA	NA	NA
9	5/22/1979	NA	NA	442	NA	NA	NA	NA	NA	NA	NA
10	5/22/1979	NA	NA	87	NA	NA	NA	NA	NA	NA	NA
11	5/22/1979	NA	NA	619	NA	NA	NA	NA	NA	NA	NA
12	5/22/1979	NA	NA	1.4	NA	NA	NA	NA	NA	NA	NA
1	July-79	NA	NA	<1	NA	NA	NA	NA	NA	NA	NA
2	July-79	NA	NA	255	NA	NA	NA	NA	NA	NA	NA
3	July-79	NA	NA	226	NA	NA	NA	NA	NA	NA	NA
4	July-79	NA	NA	834	NA	NA	NA	NA	NA	NA	NA
5	July-79	NA	NA	414	NA	NA	NA	NA	NA	NA	NA
Site 1	8/23/1979	NA	NA	3,393	NA	NA	NA	NA	NA	NA	NA
Sediment A Surface	8/23/1979	Soil	NA	170	NA	NA	NA	NA	NA	NA	NA
Sediment A 1 1/2 inch	8/23/1979	Soil	NA	176	NA	NA	NA	NA	NA	NA	NA
Sediment A 3 1/2 inch	8/23/1979	Soil	NA	369	NA	NA	NA	NA	NA	NA	NA
Sediment A 4 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B Surface	8/23/1979	Soil	NA	219	NA	NA	NA	NA	NA	NA	NA
Sediment B 1 inch	8/23/1979	Soil	NA	152	NA	NA	NA	NA	NA	NA	NA
Sediment B 2 inch	8/23/1979	Soil	NA	98	NA	NA	NA	NA	NA	NA	NA
Sediment B 3 inch	8/23/1979	Soil	NA	134	NA	NA	NA	NA	NA	NA	NA
Sediment B 4 inch	8/23/1979	Soil	NA	34	NA	NA	NA	NA	NA	NA	NA
Background 1	8/23/1979	NA	NA	105	NA	NA	NA	NA	NA	NA	NA
Background 2	8/23/1979	NA	NA	2,724	NA	NA	NA	NA	NA	NA	NA
Background 3	8/23/1979	NA	NA	57.6	NA	NA	NA	NA	NA	NA	NA
Background Sediment 1-	1/10/1980	Soil	NA	0.55	NA	NA	NA	NA	NA	NA	NA
Background Sediment 5	1/10/1980	Soil	NA	0.56	NA	NA	NA	NA	NA	NA	NA
Background Soil 1	1/10/1980	Soil	NA	<0.4	NA	NA	NA	NA	NA	NA	NA
Surface soil drainage are	1/10/1980	Soil	NA	99 to 495	NA	NA	NA	NA	NA	NA	NA
Sediment drainage chan	1/10/1980	Soil	NA	(range)	NA	NA	NA	NA	NA	NA	NA
SP-4508	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	ND
SP-4509	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	0.47
SP-4510	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	11
SP-4511	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	27.1
SP-4512	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	547.6
1-SP-4513	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1,090
2-SP-4514	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.3
3-SP-4515	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3
4-SP-4516	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.4
5-SP-4517	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
6-SP-4518	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1.2
7-SP-4519	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.7
8-SP-4520	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	181
9-SP-4521	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,990
10-SP-4522	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	12,698
11-SP-4523	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	255
12-SP-4524	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	21.30
13-SP-4525	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	4.6
14-SP-4526	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	3,218
15-SP-4527	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,855
16-SP-4528	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	2,209
17-SP-4529	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	1,051
18-SP-4530	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	875
19-SP-4531	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	178
20-SP-4532	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	5,984
21-SP-4533	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	24.90
22-SP-4534	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	27
23-SP-4535	1/28/1981	Concrete	NA	NA	NA	NA	NA	NA	NA	NA	22.5
SP-4753	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	663
SP-4754	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	209
SP-4755	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	136
SP-4756	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	28
SP-4757	1/28/1981	Sediment	NA	NA	NA	NA	NA	NA	NA	NA	18.5
Old Coal Yard 1	11/1/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	8 (mg/L)
Old Coal Yard A	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	210 (mg/L)
Old Coal Yard B	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	29 (mg/L)
Old Coal Yard C	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	9 (mg/L)
Old Coal Yard D	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	27 (mg/L)
Old Coal Yard E	11/4/1982	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	51 (mg/L)
Site A Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	37 (mg/L)
Site B Old Coal Yard: Drainage Ditch	6/7/1983	Soil	NA	NA	NA	NA	NA	<1 (mg/L)	NA	<1 (mg/L)	2 (mg/L)
Outfall 7	12/22/2011	Stormwater	NA	NA	ND	ND	ND	ND	ND	ND	ND

NA: Not available.

ND: Not Detected

*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973)

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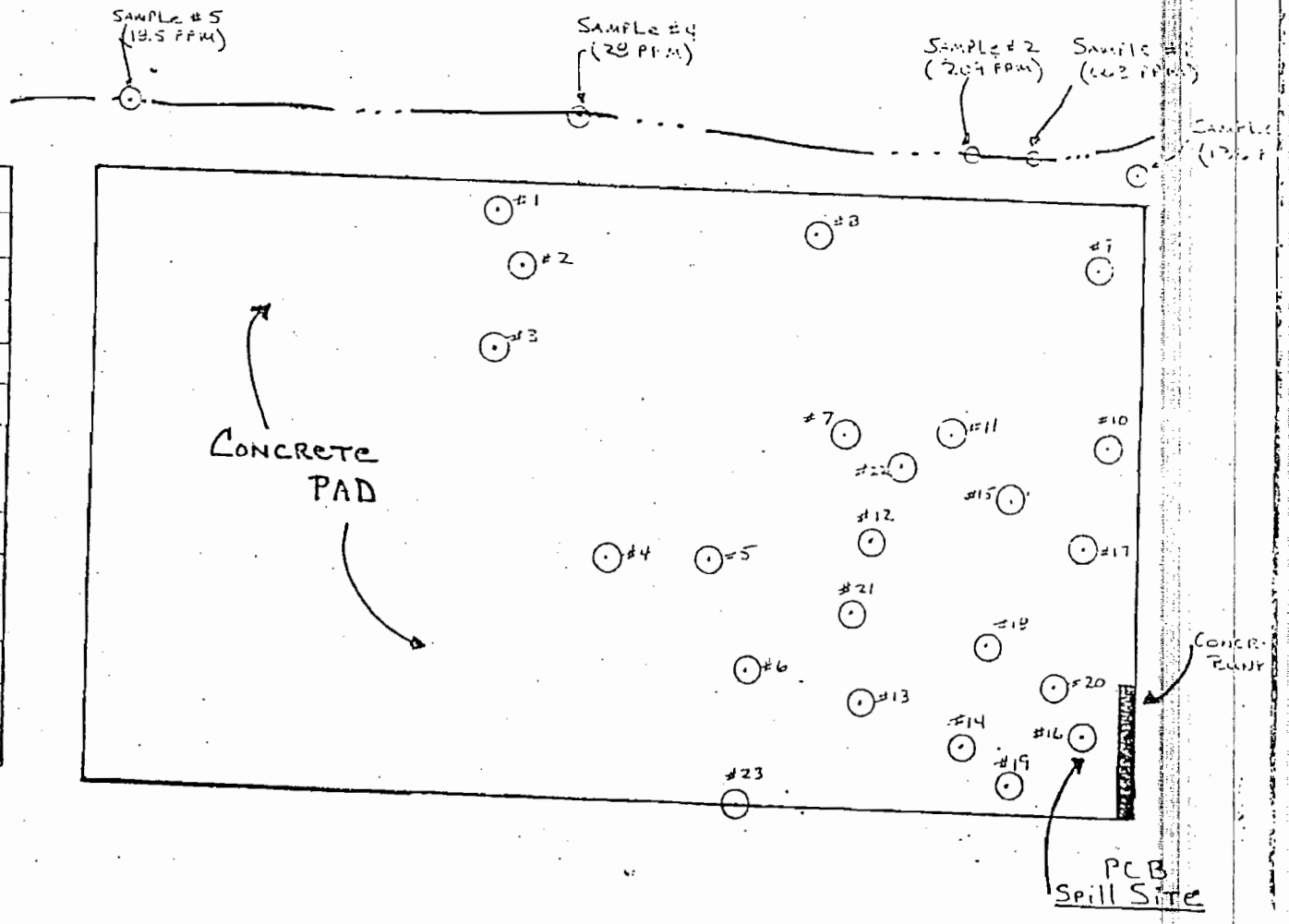
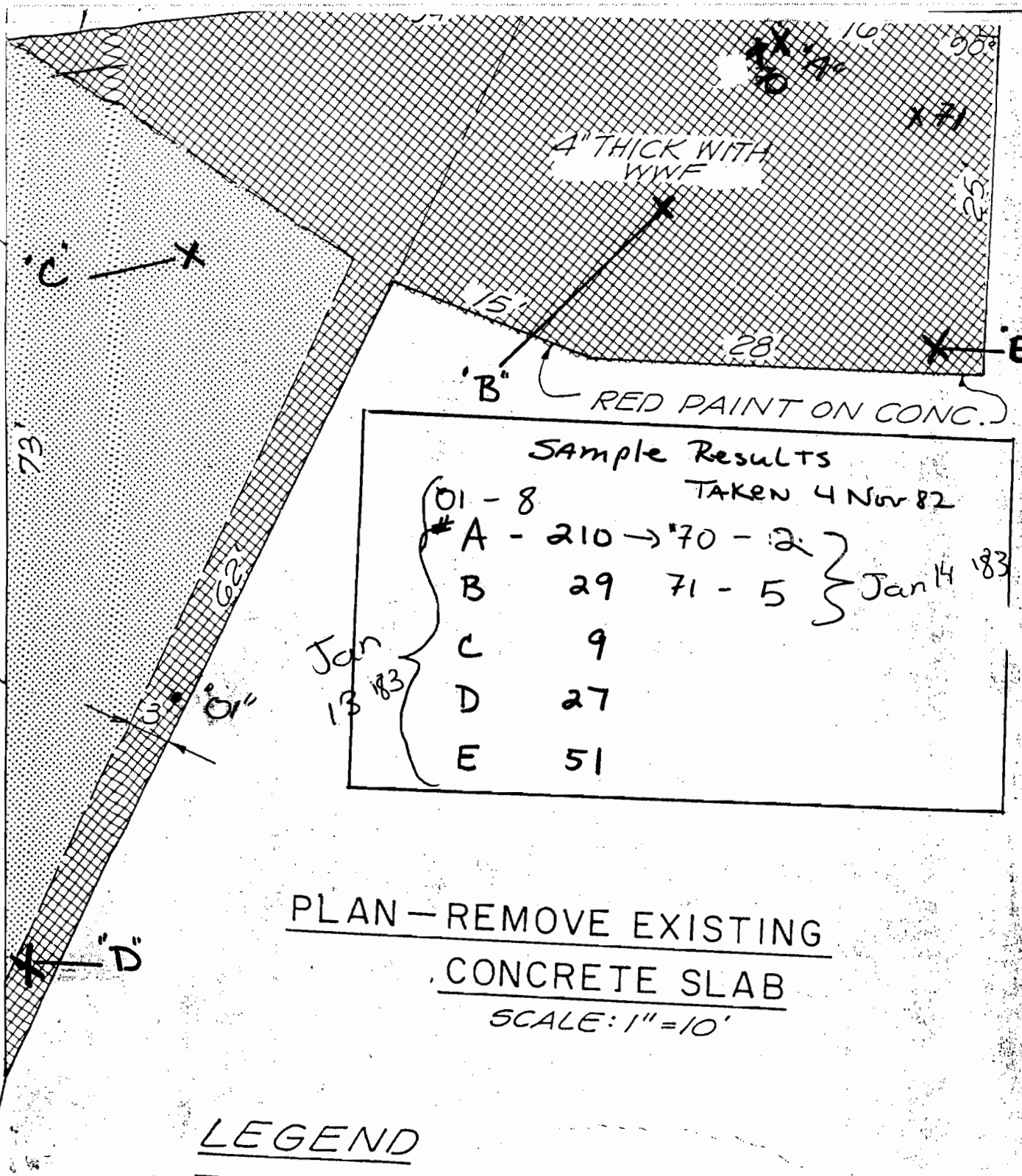
FIGURE 1: PCB CONTAMINATION LEVELS

OLD COAL YARD - FORT BELVOIR, VA

Sample	Result	Sample	Result
1	1090 PPM	15	2855
2	24	16	2209
3	3	17	1051
4	1	18	875
5	1	19	178
6	1	20	5934
7	5	21	25
8	181	22	27
9	2990	23	22
10	12698		
11	255		
12	21		
13	5		
14	3218		





Sample Results

01 - 8		TAKEN 4 Nov 82	
A	210 → 70	2	Jan 14 '83
B	29	71 - 5	Jan 14 '83
C	9		Jan 13 '83
D	27		Jan 13 '83
E	51		Jan 13 '83

PLAN — REMOVE EXISTING CONCRETE SLAB

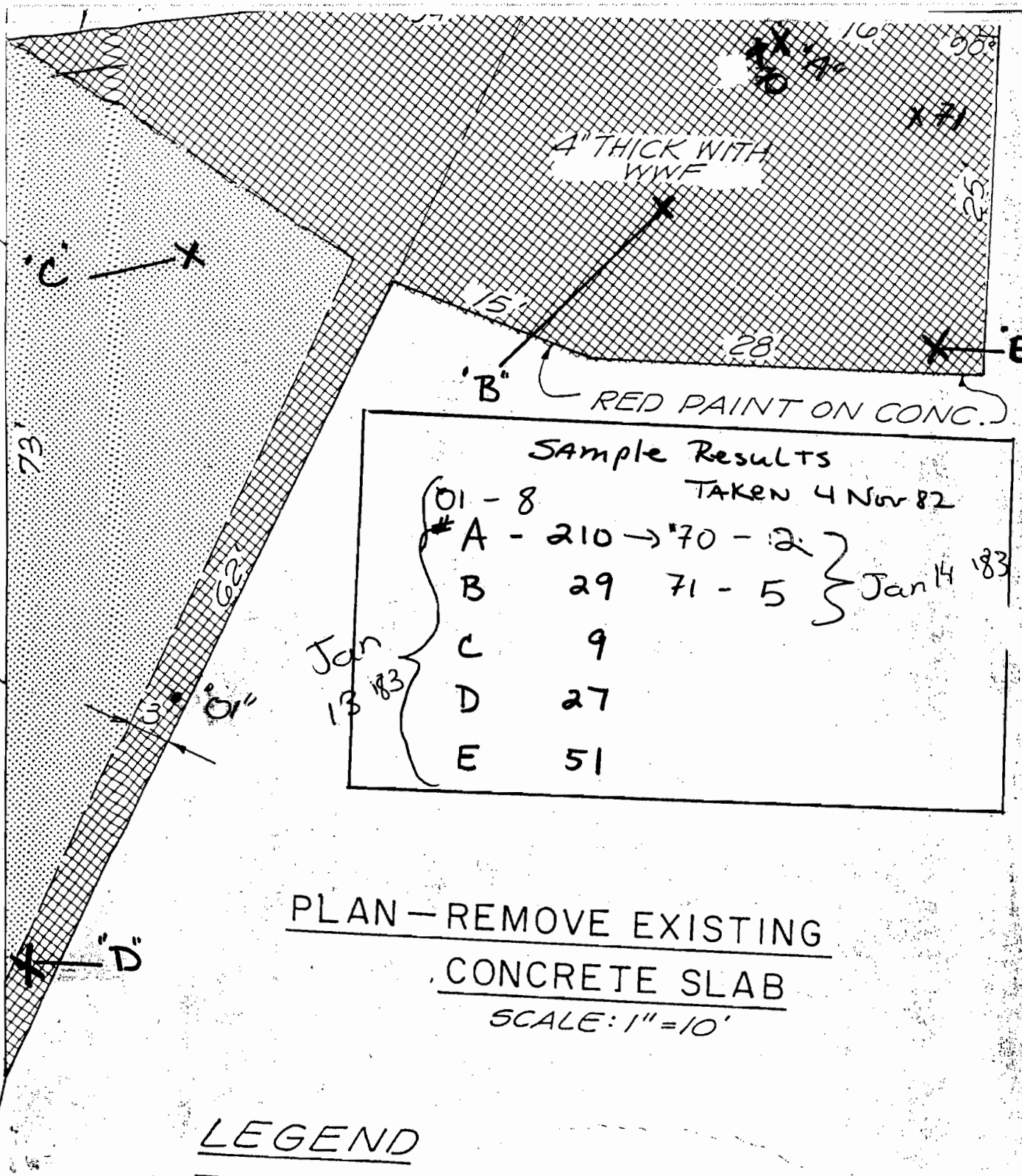
SCALE: 1" = 10'

LEGEND

AREA OF CONCRETE TO BE REMOVED PCB CONTENT LESS THAN 500 PPM

AREA OF CONCRETE TO BE REMOVE. PCB CONTENT GREATER THAN 500 P.

① STAKE IDENTIFICATION



Sample Results

01 - 8		TAKEN 4 Nov 82	
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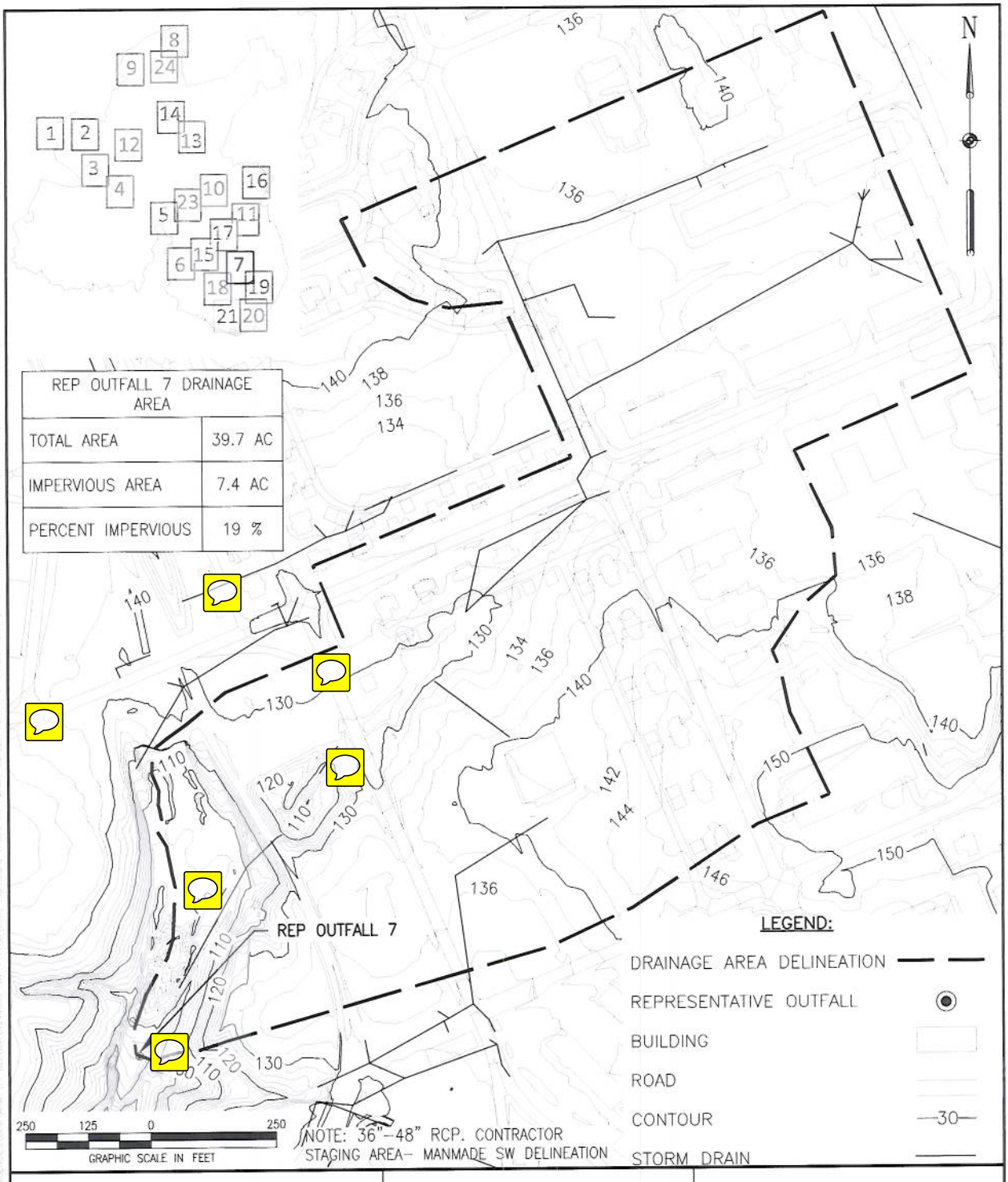
AREA OF CONCRETE TO BE REMOVED PCB CONTENT LESS THAN 500 PPM

AREA OF CONCRETE TO BE REMOVE. PCB CONTENT GREATER THAN 500 P.

① STAKE IDENTIFICATION



EA ENGINEERING, SCIENCE, AND TECHNOLOGY

FORT BELVOIR VPDES INDUSTRIAL STORMWATER PERMIT APPLICATION

Fort Belvoir, VA

REPRESENTATIVE OUTFALL 7 DRAINAGE AREA

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
BD	AA	AA	JLL	1:250	AUG 2012	6244003	–

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
Soil 1-PCB Spill Site 2	4/4/1979	NA	Soil	156	NA	NA	NA	NA
Soil 2-PCB Spill Site 2	4/4/1979	NA	Soil	495	NA	NA	NA	NA
Soil 3-PCB Spill Site 2	4/4/1979	NA	Soil	151	NA	NA	NA	NA
Soil 4-PCB Spill Site 2	4/4/1979	NA	Soil	99	NA	NA	NA	NA
Soil 5-PCB Spill Site 2	4/4/1979	NA	Soil	301	NA	NA	NA	NA
Soil 6-PCB Spill Site 2	4/4/1979	NA	Soil	118	NA	NA	NA	NA
Soil 7-PCB Spill Site 2	4/4/1979	NA	Soil	287	NA	NA	NA	NA
Soil 8-PCB Spill Site 2	4/4/1979	NA	Soil	165	NA	NA	NA	NA
Soil 9-PCB Spill Site 2	4/4/1979	NA	Soil	110	NA	NA	NA	NA
Soil 10-PCB Spill Site 2	4/4/1979	NA	Soil	142	NA	NA	NA	NA
Soil 11-PCB Spill Site 2	4/4/1979	NA	Soil	572	NA	NA	NA	NA
Soil 12-PCB Spill Site 2	4/4/1979	NA	Soil	219	NA	NA	NA	NA
Soil 13-PCB Spill Site 2	4/4/1979	NA	Soil	33	NA	NA	NA	NA
Soil 14-PCB Spill Site 2	4/4/1979	NA	Soil	1210	NA	NA	NA	NA
Soil 15-PCB Spill Site 2	4/4/1979	NA	Soil	2,605	NA	NA	NA	NA
Soil 16-PCB Spill Site 2	4/4/1979	NA	Soil	1,679	NA	NA	NA	NA
Soil 17-PCB Spill Site 2	4/4/1979	NA	Soil	244	NA	NA	NA	NA
Soil 18-PCB Spill Site 2	4/4/1979	NA	Soil	136	NA	NA	NA	NA
Soil 19-PCB Spill Site 2	4/4/1979	NA	Soil	356	NA	NA	NA	NA
Water Sample 2-2-2	4/4/1979	NA	Water	0.0023	NA	NA	NA	NA
Soil 2-3-3	4/4/1979	NA	Soil	<25	NA	NA	NA	NA
Soil 2-10-2	4/4/1979	NA	Soil	95	NA	NA	NA	NA
Soil 2-2-2	4/4/1979	NA	Soil	646	NA	NA	NA	NA
Soil 2-3-2	4/4/1979	NA	Soil	<5	NA	NA	NA	NA
Soil 2-4-2	4/4/1979	NA	Soil	1,000	NA	NA	NA	NA
Soil 2-5-2	4/4/1979	NA	Soil	96	NA	NA	NA	NA
Soil 2-7-2	4/4/1979	NA	Soil	1,483	NA	NA	NA	NA
Soil 2-8-2	4/4/1979	NA	Soil	1,550	NA	NA	NA	NA
Soil 2-6-2	4/4/1979	NA	Soil	18	NA	NA	NA	NA
Soil 2-1-3	4/4/1979	NA	Soil	174	NA	NA	NA	NA
Soil 2-1-2	4/4/1979	NA	Soil	3,295	NA	NA	NA	NA
Soil 2-12-2	4/4/1979	NA	Soil	<5	NA	NA	NA	NA
Soil 2-13-2	4/4/1979	NA	Soil	<5	NA	NA	NA	NA
Soil 2-14-2	4/4/1979	NA	Soil	<5	NA	NA	NA	NA
Sediment 1-PCB Spill Sit	4/4/1979	NA	Soil	7.2	NA	NA	NA	NA
Sediment 2-PCB Spill Sit	4/4/1979	NA	Soil	4.7	NA	NA	NA	NA
Sediment 3-PCB Spill Sit	4/4/1979	NA	Soil	38	NA	NA	NA	NA
Absorbent pre Site 2	5/22/1979	NA	NA	31,910	NA	NA	NA	NA
Absorbent 1 Site 2	5/22/1979	NA	NA	31,962	NA	NA	NA	NA
Absorbent 2 Site 2	5/22/1979	NA	NA	52,784	NA	NA	NA	NA
Absorbent 3 Site 2	5/22/1979	NA	NA	4,445	NA	NA	NA	NA
Hexane wash pre Site 2	5/22/1979	NA	NA	864	NA	NA	NA	NA
Hexane wash 1 Site 2	5/22/1979	NA	NA	2,205	NA	NA	NA	NA
Hexane wash 2 Site 2	5/22/1979	NA	NA	5,048	NA	NA	NA	NA
Hexane wash 3 Site 2	5/22/1979	NA	NA	41	NA	NA	NA	NA
Site 2	8/23/1979	NA	NA	25,570	NA	NA	NA	NA
Sediment 1	unknonwn	NA	Soil	27	NA	NA	NA	NA
Sediment 2	1/10/1980	NA	Soil	0.33	NA	NA	NA	NA
Sediment 3	1/10/1980	NA	Soil	0.28	NA	NA	NA	NA
Sediment 4	1/10/1980	NA	Soil	0.22	NA	NA	NA	NA
Sediment 6	unknonwn	NA	Soil	0.5	NA	NA	NA	NA
Soil 2	unknonwn	NA	Soil	<15	NA	NA	NA	NA
Soil 3	unknonwn	NA	Soil	<15	NA	NA	NA	NA
Soil 4	unknonwn	NA	Soil	<15	NA	NA	NA	NA
Soil 5	unknonwn	NA	Soil	20	NA	NA	NA	NA
Soil 6	unknonwn	NA	Soil	2,445	NA	NA	NA	NA
Soil 7	unknonwn	NA	Soil	28	NA	NA	NA	NA
Background Sediment 5	unknonwn	NA	Soil	0.56	NA	NA	NA	NA
Woodchips	unknonwn	NA	NA	4	NA	NA	NA	NA
Background Soil 1	unknonwn	NA	Soil	<0.4	NA	NA	NA	NA
Spill Site A	unknonwn	NA	NA	68,503	NA	NA	NA	NA
Spill Site B	unknonwn	NA	NA	10,714	NA	NA	NA	NA
Absorbent pre Site 1	4/23/1980	NA	NA	57,340	NA	NA	NA	NA
Absorbent 2 Site 1	4/23/1980	NA	NA	16,299	NA	NA	NA	NA
Absorbent 3 Site 1	4/23/1980	NA	NA	64,141	NA	NA	NA	NA
Hexane wash pre Site 1	4/23/1980	NA	NA	2,273	NA	NA	NA	NA
Hexane wash 2 Site 1	4/23/1980	NA	NA	3,145	NA	NA	NA	NA
Hexane wash 3 Site 1	4/23/1980	NA	NA	99	NA	NA	NA	NA
HexWashBin#1-5385	10/9/1981	NA	NA	NA	22.57	NA	NA	NA
HexWashBin#2-5386	10/9/1981	NA	NA	NA	268.09	NA	NA	NA
HexWashBin#3-5387	10/9/1981	NA	NA	NA	44.07	NA	NA	NA
HexWashBin#4-5388	10/9/1981	NA	NA	NA	30.59	NA	NA	NA
HexWashPad#1-5389	10/9/1981	NA	NA	NA	12	NA	NA	NA
HexWashPad#2-5390	10/9/1981	NA	NA	NA	15	NA	NA	NA

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
HexWashPad#3-5391	10/9/1981	NA	NA	NA	5.85	NA	NA	NA
HexWashPad#4-5392	10/9/1981	NA	NA	NA	6	NA	NA	NA
HexWashPad#5-5393	10/9/1981	NA	NA	NA	9.2	NA	NA	NA
HexWashPad#6-5394	10/9/1981	NA	NA	NA	5.5	NA	NA	NA
HexWashPad#7-5395	10/9/1981	NA	NA	NA	4.31	NA	NA	NA
HexWashPad#8-5396	10/9/1981	NA	NA	NA	4.19	NA	NA	NA
HexWashPad#9-5397	10/9/1981	NA	NA	NA	2.47	NA	NA	NA
HexWashPad#10-5398	10/9/1981	NA	NA	NA	40.5	NA	NA	NA
HexWashPad#11-5399	10/9/1981	NA	NA	NA	15.3	NA	NA	NA
HexWashPad#12-5400	10/9/1981	NA	NA	NA	1.74	NA	NA	NA
HexWashPad#13-5401	10/9/1981	NA	NA	NA	6.1	NA	NA	NA
HexWashPad#14-5402	10/9/1981	NA	NA	NA	8.25	NA	NA	NA
HexWashPad#15-5403	10/9/1981	NA	NA	NA	35.18	NA	NA	NA
Road1-5291	10/20/1981	NA	NA	NA	NA	NA	NA	1,287.9
M11-5335	10/20/1981	NA	NA	NA	NA	NA	NA	13.8
M12-5336	10/20/1981	NA	NA	NA	NA	1,244	NA	NA
M13-5337	10/20/1981	NA	NA	NA	NA	NA	NA	15.7
M22-5341	10/20/1981	NA	NA	NA	NA	NA	NA	6.3
M23-5342	10/20/1981	NA	NA	NA	NA	NA	NA	5.5
M31-5345	10/20/1981	NA	NA	NA	NA	NA	NA	28.0
M32-5346	10/20/1981		NA	NA	NA	NA	NA	16.6
M34-5348	10/20/1981	NA	NA	NA	NA	NA	NA	51.5
M35-5349	10/20/1981	NA	NA	NA	NA	NA	NA	36.6
M41-5350	10/20/1981	NA	NA	NA	NA	NA	NA	23.1
M42-5351	10/20/1981	NA	NA	NA	NA	NA	NA	63.4
O15-5319	10/20/1981	NA	NA	NA	NA	NA	NA	55
O21-5320	10/20/1981	NA	NA	NA	NA	NA	NA	28.8
O22-5321	10/20/1981	NA	NA	NA	NA	NA	NA	21.6
O24-5323	10/20/1981	NA	NA	NA	NA	NA	NA	15.3
O31-5325	10/20/1981	NA	NA	NA	NA	NA	NA	45.6
O32-5326	10/20/1981	NA	NA	NA	NA	NA	NA	136.7
O33-5327	10/20/1981	NA	NA	NA	NA	NA	NA	47.8
O35-5329	10/20/1981	NA	NA	NA	NA	NA	NA	106.6
P31-5381	10/20/1981	NA	NA	NA	NA	NA	NA	10.8
P33-5380	10/20/1981	NA	NA	NA	NA	NA	NA	5.4
P34-5382	10/20/1981	NA	NA	NA	NA	NA	NA	7
R11-5295	10/20/1981	NA	NA	NA	NA	NA	NA	168.6
R14-5298	10/20/1981	NA	NA	NA	NA	NA	NA	145
R43-5312	10/20/1981	NA	NA	NA	NA	NA	NA	14.2
T14-5358	10/20/1981	NA	NA	NA	NA	NA	NA	33.8
T13-5357	10/20/1981	NA	NA	NA	NA	NA	NA	1,371.5
T23-5362	10/20/1981	NA	NA	NA	NA	NA	NA	90.2
T32-5366	10/20/1981	NA	NA	NA	NA	NA	NA	242
T33-5367	10/20/1981	NA	NA	NA	NA	NA	NA	152.3
T43-5372	10/20/1981	NA	NA	NA	NA	NA	NA	2454
X1-SP 5286	10/20/1981	NA	NA	NA	NA	NA	NA	36.6
X2-5287	10/20/1981	NA	NA	NA	NA	NA	NA	9.4
X3-5288	10/20/1981	NA	NA	NA	NA	NA	NA	14.1
X4-5289	10/28/1981	NA	NA	NA	NA	NA	NA	12.98
X5-SP 5290	NA		NA	2.0	NA	NA	NA	NA
Y1-5282	10/20/1981	NA	NA	NA	NA	NA	NA	18.2
Y2-SP 5283	10/20/1981	NA	NA	40	NA	NA	NA	NA
Y3-SP 5284	10/20/1981	NA	NA	25.1	NA	NA	NA	NA
Y4-SP 5285	NA	NA	NA	12.9	NA	NA	NA	NA
Rd2-5292	10/28/1981	NA	NA	NA	NA	NA	NA	108.6
Rd3-5293	10/28/1981	NA	NA	NA	NA	NA	NA	15.1
Rd4-5294	10/28/1981	NA	NA	NA	NA	NA	NA	9.2
R12-5296	10/28/1981	NA	NA	NA	NA	NA	NA	46.8
R13-SP 5297	NA	NA	NA	53.6	NA	NA	NA	NA
R15-5299	10/28/1981	NA	NA	NA	NA	NA	NA	33.33
R21-5300	10/28/1981	NA	NA	NA	NA	NA	NA	25.1
R22-5301	10/28/1981	NA	NA	NA	NA	NA	NA	38.6
R23-SP 5302	NA	NA	NA	20.7	NA	NA	NA	NA
R24-5303	10/28/1981	NA	NA	NA	NA	NA	NA	2.5
R25-5304	10/28/1981	NA	NA	NA	NA	NA	NA	6.7
R31-5305	10/28/1981	NA	NA	NA	NA	NA	NA	33
R32-5306	10/28/1981	NA	NA	NA	NA	NA	NA	16.6
R33-SP 5307	NA	NA	NA	24.3	NA	NA	NA	NA
R34-5308	10/28/1981	NA	NA	NA	NA	NA	NA	61.68
R35-5309	10/28/1981	NA	NA	NA	NA	NA	NA	23.9
R41-5310	10/28/1981	NA	NA	NA	NA	NA	NA	27.6
R42-5311	10/28/1981	NA	NA	NA	NA	NA	NA	8.6
R44-SP 5313	NA	NA	NA	33.4	NA	NA	NA	NA
R45-5314	10/28/1981	NA	NA	NA	NA	NA	NA	19.5

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
O11-4315	10/28/1981	NA	NA	NA	NA	NA	NA	72.8
O12-5316	10/28/1981	NA	NA	NA	NA	NA	NA	54
O13-SP 5317	NA	NA	NA	8.5	NA	NA	NA	NA
O14-5318	10/28/1981	NA	NA	NA	NA	NA	NA	252.63
O23-SP 5322	NA	NA	NA	16.2	NA	NA	NA	NA
O25-5324	10/28/1981	NA	NA	NA	NA	NA	NA	34.6
OP34-SP 5328	NA	NA	NA	62.9	NA	NA	NA	NA
O41-5330	10/28/1981	NA	NA	NA	NA	NA	NA	4.9
O42-5331	10/28/1981	NA	NA	NA	NA	NA	NA	63.8
O43-SP 5332	NA	NA	NA	32.3	NA	NA	NA	NA
O44-5333	10/28/1981	NA	NA	NA	NA	NA	NA	16.6
O45-5334	10/28/1981	NA	NA	NA	NA	NA	NA	25.3
M14-5338	10/28/1981	NA	NA	NA	NA	NA	NA	45
M15-5339	10/28/1981	NA	NA	NA	NA	NA	NA	10.5
M21-5340	10/28/1981	NA	NA	NA	NA	NA	NA	8.8
M24-5343	10/28/1981	NA	NA	NA	NA	NA	NA	13
M25-5344	10/28/1981	NA	NA	NA	NA	NA	NA	6.6
M33-SP 5347	NA	NA	NA	39.8	NA	NA	NA	NA
M43-SP 5352	NA	NA	NA	21.6	NA	NA	NA	NA
M45-5354	10/28/1981	NA	NA	NA	NA	NA	NA	13.4
T11-5355	10/28/1981	NA	NA	NA	NA	NA	NA	47.2
T12-5356	10/28/1981	NA	NA	NA	NA	NA	NA	121.8
T15-5359	10/28/1981	NA	NA	NA	NA	NA	NA	166.19
T21-5360	10/28/1981	NA	NA	NA	NA	NA	NA	149.4
T22-5361	10/28/1981	NA	NA	NA	NA	NA	NA	42.3
T24-5363	10/28/1981	NA	NA	NA	NA	NA	NA	233
T25-5364	10/28/1981	NA	NA	NA	NA	NA	NA	90
T31-5365	10/28/1981	NA	NA	NA	NA	NA	NA	33
T34-5368	10/28/1981	NA	NA	NA	NA	NA	NA	148.5
T35-5369	10/28/1981	NA	NA	NA	NA	NA	NA	3,370.6
T41-5370	10/28/1981	NA	NA	NA	NA	NA	NA	122.4
T42-5371	10/28/1981	NA	NA	NA	NA	NA	NA	137.3
T44-5373	10/28/1981	NA	NA	NA	NA	NA	NA	45.8
T45-5374	10/28/1981	NA	NA	NA	NA	NA	NA	50.7
R11-SP 5375	NA	NA	NA	69	NA	NA	NA	NA
P14-5376	10/28/1981	NA	NA	NA	NA	NA	NA	37.9
P22-SP 5377	NA	NA	NA	18.9	NA	NA	NA	NA
P25-5378	10/28/1981	NA	NA	NA	NA	NA	NA	23.5
P13-5379	10/28/1981	NA	NA	NA	NA	NA	NA	266.66
P42-5383	10/28/1981	NA	NA	NA	NA	NA	NA	19.99
P45-5384	10/28/1981	NA	NA	NA	NA	NA	NA	23.7
Sample ID	**Sample Date**	**Analysis Mehthod**	**Matrix**	**PCB (mg/L)**	**PCB (mg/L)**	**Aroclor 1242 (mg/L)**	**Aroclor 1254 (mg/L)**	**Aroclor 1260 (mg/L)**
PDO-02	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-03	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-04	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-05	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-06	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-07	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	7
PDO-08	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	23*	<1	<1
PDO-09	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-10	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-11	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	11
PDO-12	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	17
PDO-13	11/1/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
DPDO-14	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	140
PDO-15	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	52
PDO-16	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	53
PDO-17	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	70
PDO-18	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	39
PDO-19	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	48
PDO-20	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	34
PDO-21	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	34
PDO-22	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	99
PDO-23	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	82
PDO-24	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	30
PDO-25	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	67
PDO-26	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	96
PDO-27	11/3/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	85
PDO-28	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	12
PDO-29	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	360
PDO-30	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	290
PDO-31	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	140
PDO-32	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	160

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
PDO-33	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	800
PDO-34	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	62
PDO-35	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	68
PDO-36	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	190*	74
PDO-37	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	200
PDO-38	11/9/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	53
PDO-39	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	16
PDO-40	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	97
PDO-41-3	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	8
PDO-42-6	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	18
PDO-43-6	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	11
PDO-F	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	59
PDO-G	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	44
PDO-H	11/4/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	7
PDO-50	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	75
PDO-51	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	31
PDO-52	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	67
PDO-53	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-54	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	51
PDO-55	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	140
PDO-56	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-57	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	3,000
PDO-58	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	29
PDO-59	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	730
PDO-60	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	220
PDO-61	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	320
PDO-62	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	95
PDO-63	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	15	<1	24
PDO-64	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	100
PDO-65	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	15
PDO-66	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	240
PDO-67	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	68
PDO-68	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	11
PDO-69	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	38
PDO-70	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-71	11/19/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	5
PDO-72	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	5
PDO-73	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	18
PDO-74	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	9
PDO-75	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	98
PDO-76	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	190
PDO-77	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	63
PDO-78	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	95
PDO-79	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-80	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	23
PDO-81	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	95
PDO-82	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	97
PDO-83	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	54
PDO-84	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
PDO-85	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	21
PDO-86	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-87	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	9
PDO-88	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	7
PDO-89	12/10/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	30
PDO-90	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-91	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
PDO-92	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-93	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	130
PDO-94	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	110
PDO-95	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	520
PDO-96	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	470
PDO-97	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	65
PDO-98	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	140
PDO-99	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	18
PDO-100	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	71
PDO-101	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	83
PDO-102	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	150
PDO-103	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	36
PDO-104	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-105	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	180
PDO-106	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	95
PDO-107	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	9
PDO-108	12/29/1982	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
PDO-109	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
PDO-110	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	23
PDO-111	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	240
PDO-111 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	32.1
PDO-111 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	24.2
PDO-111 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	10
PDO-111 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-111 E	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-111 F	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-112	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	85
PDO-112 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	300.6
PDO-112 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	59.1
DPO-112 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
DPO-112 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
DPO-112 E	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
DPO-112 F	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	11
PDO-113	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	68
PDO-113 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	134.9
PDO-113 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	129.9
PDO-113 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	220
PDO-113 D	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-113 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-113 F	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-114	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	71
PDO-114 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	916
PDO-114 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	139.7
PDO-114 C	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	40
PDO-114 D	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
PDO-114 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-114 F	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-115	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	74
PDO-115 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	130.9
PDO-115 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	31.2
PDO-115 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-115 D	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-115 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
PDO-116	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	51
PDO-116 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	156.9
PDO-116 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	13.2
PDO-116 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-116 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-116 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-117	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-117 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	0.6
PDO-117 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	131.2
PDO-117 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	100
PDO-117 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	10
PDO-117 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-118	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	63
PDO-118 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	44.4
PDO-118 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	50.3
PDO-118 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	110
PDO-118 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	20
PDO-118 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	15
PDO-119	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	56
PDO-119 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	20.2
PDO-119 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	180.5
PDO-119 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	89
PDO-119 D	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	63
PDO-119 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	5
PDO-120	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-120 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	81.3
PDO-120 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	56.9
PDO-120 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	9
PDO-120 D	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	8
PDO-120 E	3/22/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-121	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	3
PDO-121 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	423.7
PDO-121 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	286.2
PDO-121 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	57
PDO-121 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	36
PDO-121 E	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	43
PDO-121 F	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-122	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	55
PDO-122 3-6"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	9.1

Table A-2. A24 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	PCB (mg/kg)	PCB (mg/L)	Aroclor 1242 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
PDO-122 6-9"	2/1/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	7.2
PDO-122 C	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-122 D	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-122 E	3/13/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
PDO-123	1/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
PDO-111x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	12
PDO-112x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
PDO-113x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	18
PDO-114x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	210
PDO-115x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-116x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	20
PDO-117x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	85
PDO-118x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	35
PDO-119x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	71
PDO-120x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	210
PDO-121x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	90
PDO-122x	4/5/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	25
PDO-111y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	65
PDO-112y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	13
PDO-113y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-114y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	200
PDO-115y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	3
PDO-116y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-117y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-118y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	250
PDO-119y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2,300
PDO-120y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	420
PDO-121y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-122y	4/14/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	7
PDO-111z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO-112z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-113z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	5
PDO-114z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	12
PDO-115z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
PDO-116z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-117z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	2
PDO-118z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
PDO-119z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	70
PDO-120z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	88
PDO-121z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	33
PDO-122z	4/28/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	6
PDO-111z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	<1
PDO-112z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	2
PDO-113z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	3
PDO-114z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	25
PDO-115z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	11
PDO-116z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	4
PDO-117z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	3
PDO-118z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	120
PDO-119z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	85
PDO-120z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	94
PDO-121z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	25
PDO-122z	5/12/1983	EPA 600/4-81-045	Soil	NA	NA	NA	NA	<1
118 xx	5/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	1
119 xx	5/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	120
120 xx	5/19/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	4
119 yy	6/7/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	5
PDO Stream No. 1	6/7/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	32
PDO Stream No. 2	6/7/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1
PDO Stream No. 3	6/7/1983	EPA 600/4-81-045	Soil	NA	NA	<1	<1	<1

NA: Not available.

ND: Non detected.

*Results calculated per Webb, R.G. McCall, A.C., Journal of Chromatographic Science, 11, 366 (1973).

The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).

12-14 1980

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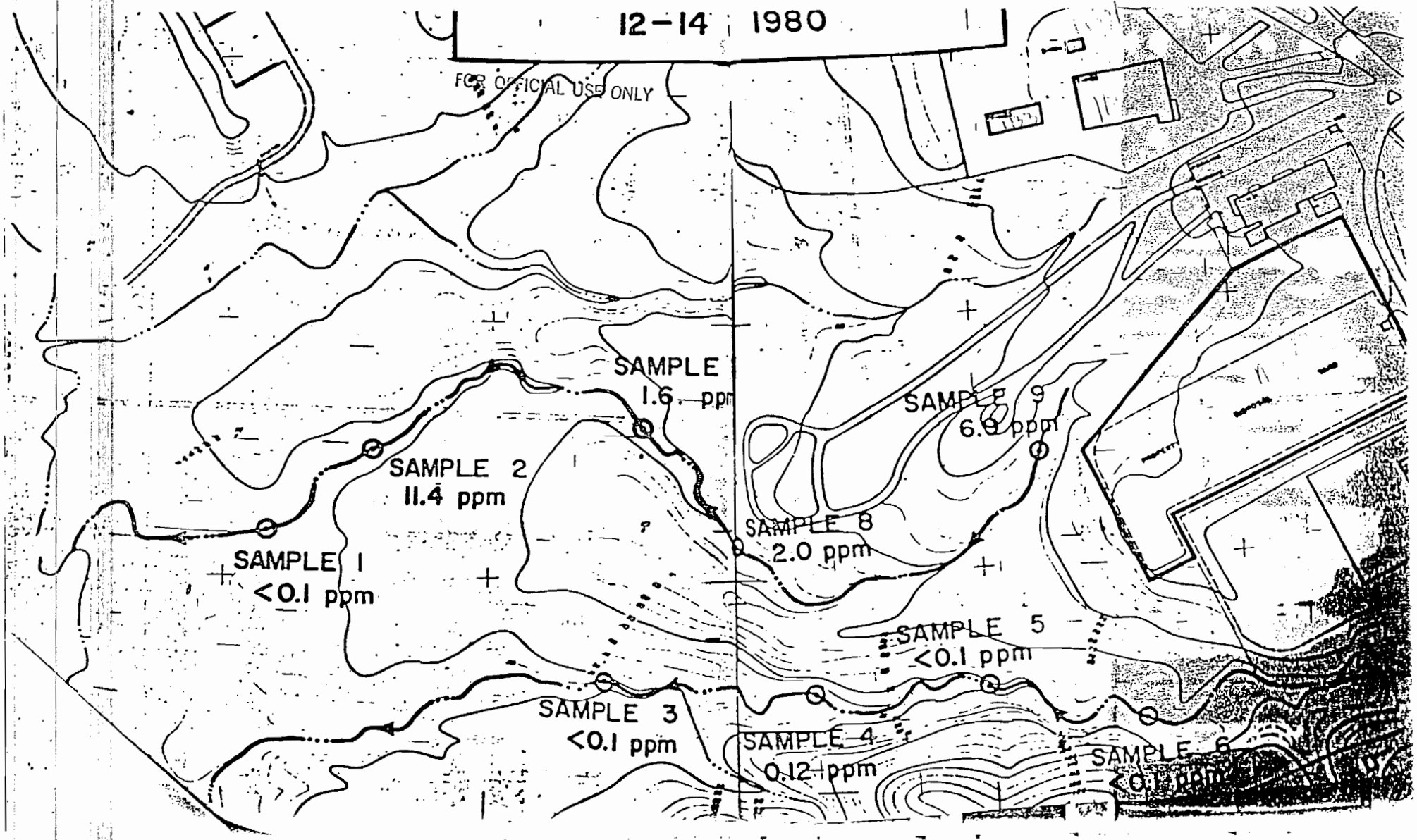
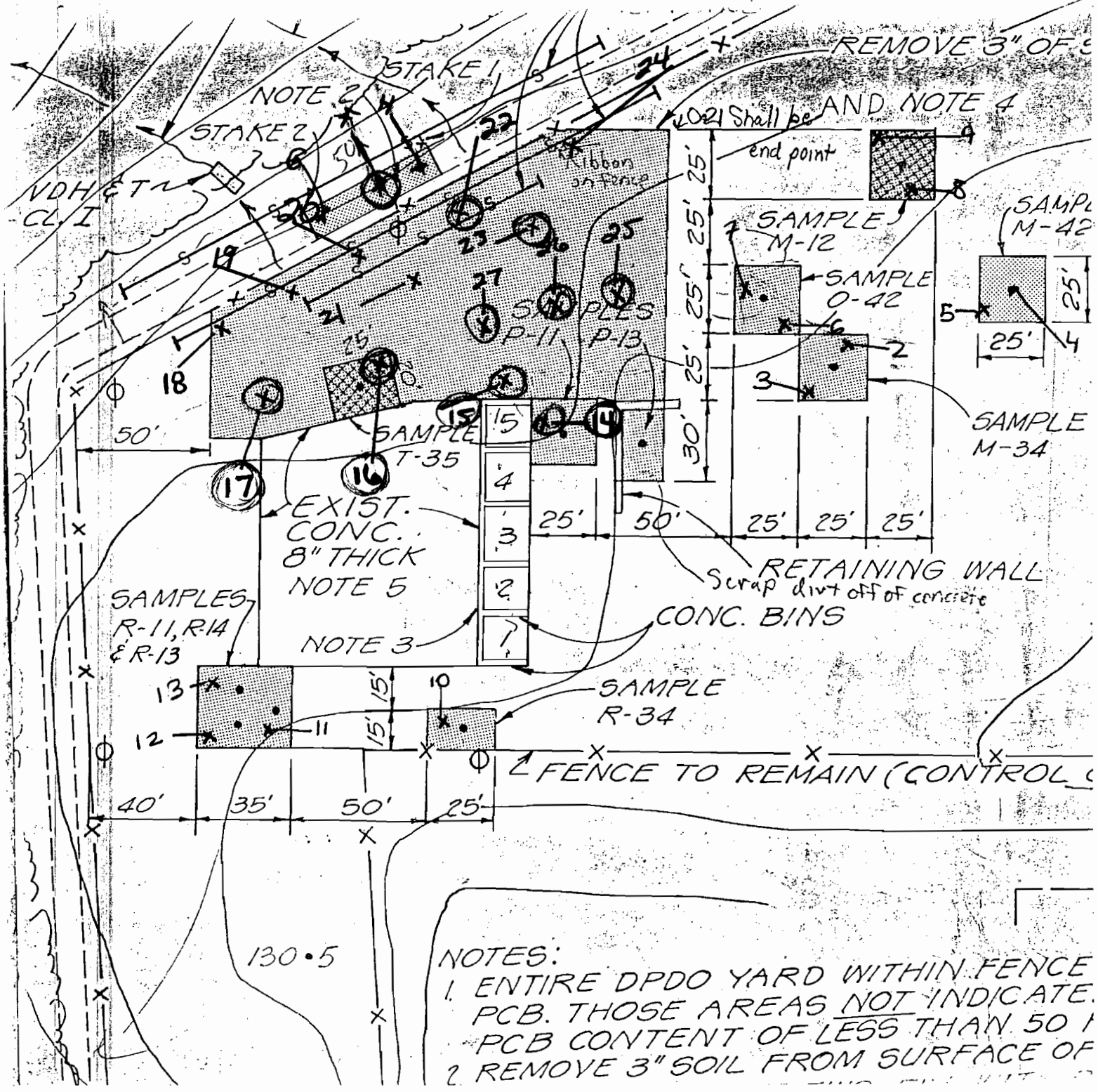
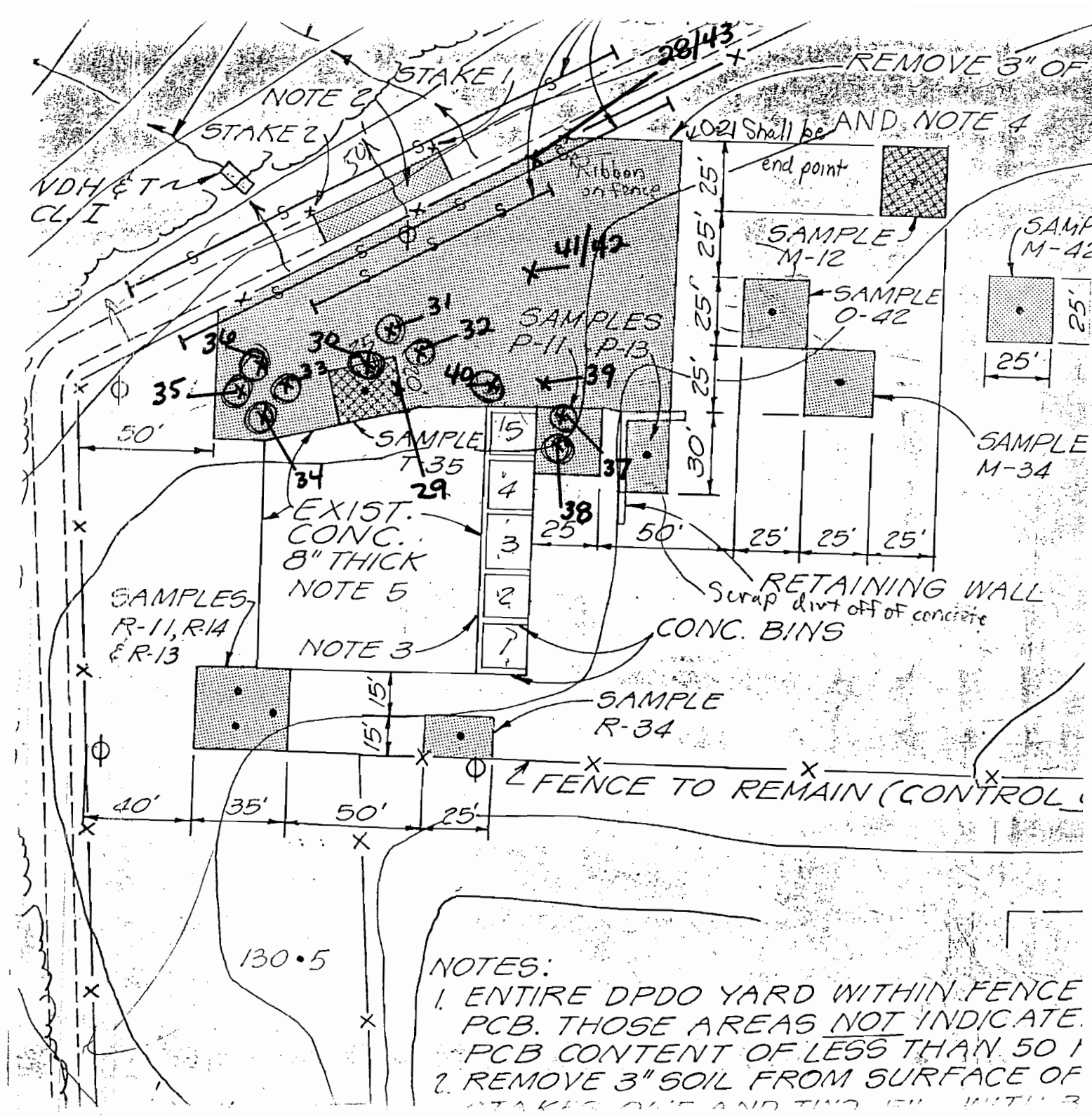
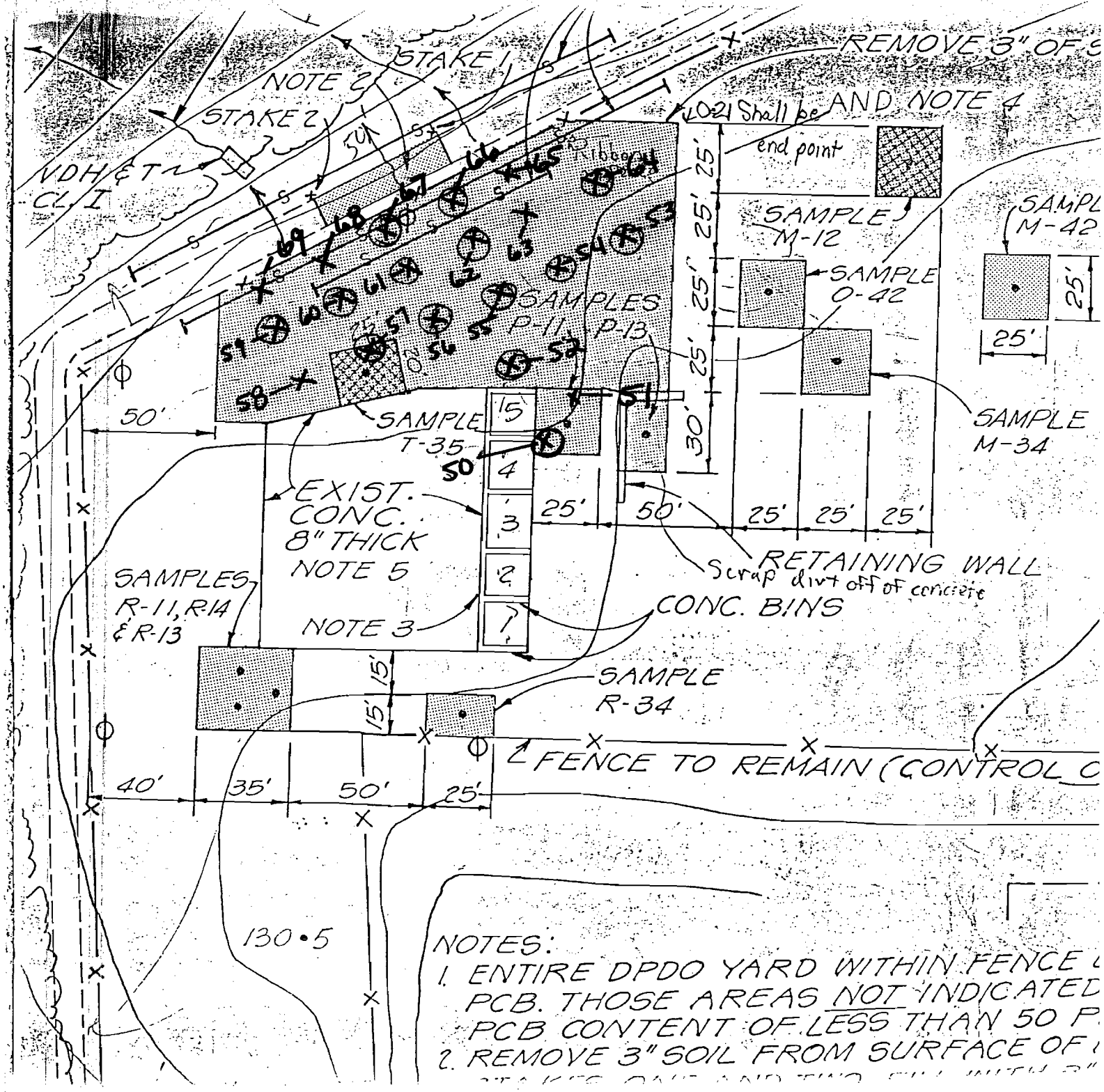


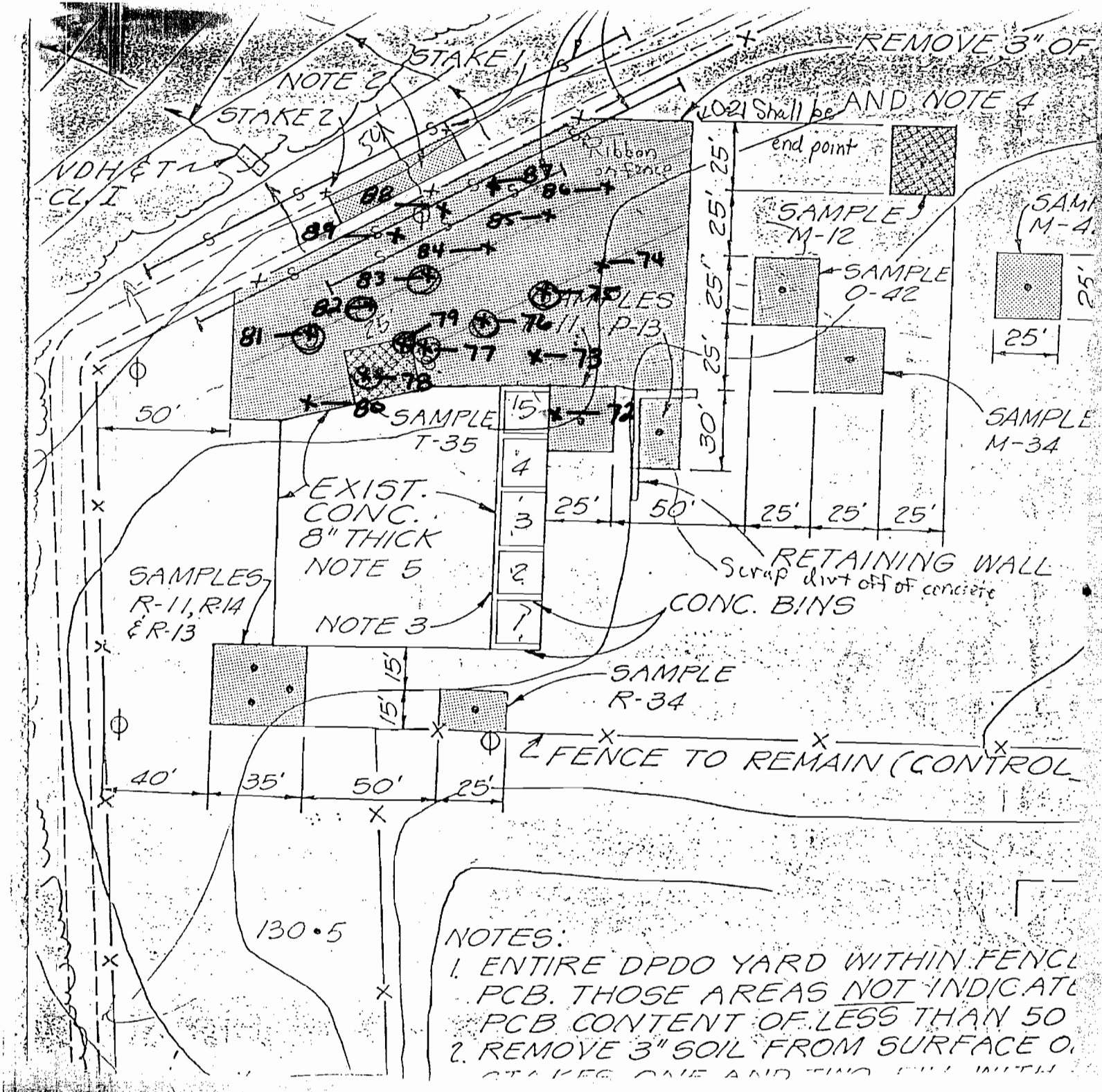


Sample

14 –	140 p.p
15 –	52
16 –	53
17 –	70
18 –	39
19 –	48
20 –	34
21 –	34
22 –	99
23 –	82
24 –	30
25 –	67
26 –	96
27 –	85

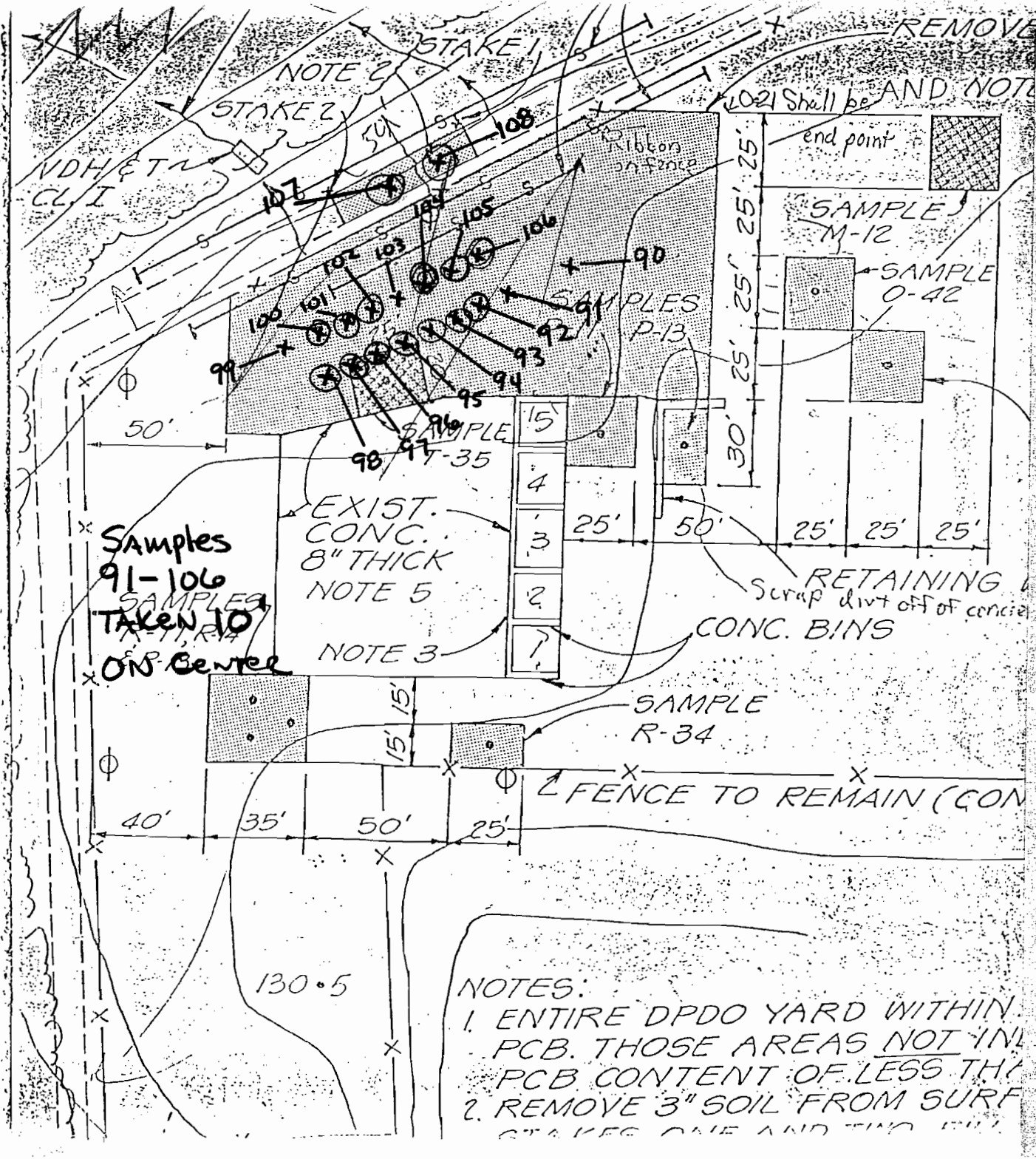

STAKE 1
NOTE 2
STAKE 2
28/43
REMOVE 3" OF
AND NOTE 4
end point
Ribbon on Fence
41/42
SAMPLES P-11, P-13
SAMPLE M-12
SAMPLE O-42
SAMPLE M-34
SAMPLE T-35
EXIST. CONC. 8" THICK NOTE 5
RETAINING WALL
Scrap dirt off of concrete
CONC. BINS
NOTE 3
SAMPLES R-11, R-14 & R-13
SAMPLE R-34
FENCE TO REMAIN (CONTROL
130.5
NOTES:
1. ENTIRE DPDO YARD WITHIN FENCE
PCB. THOSE AREAS NOT INDICATE.
PCB CONTENT OF LESS THAN 50
2. REMOVE 3" SOIL FROM SURFACE OF


REMOVE 3" OF S
STAKE 1
NOTE 2
STAKE 2
VDH ET
CL I
021 Shall be AND NOTE 4
end point
SAMPLE M-12
SAMPL M-42
SAMPLE O-42
SAMPLES P-11, P-13
SAMPLE T-35
SAMPLE M-34
EXIST. CONC. 8" THICK NOTE 5
NOTE 3
SAMPLES R-11, R-14 & R-13
SAMPLE R-34
RETAINING WALL
Scrap dirt off of concrete
CONC. BINS
FENCE TO REMAIN (CONTROL C
130.5
NOTES:
1. ENTIRE DPDO YARD WITHIN FENCE
PCB. THOSE AREAS NOT INDICATED
PCB CONTENT OF LESS THAN 50 P
2. REMOVE 3" SOIL FROM SURFACE OF



Samp

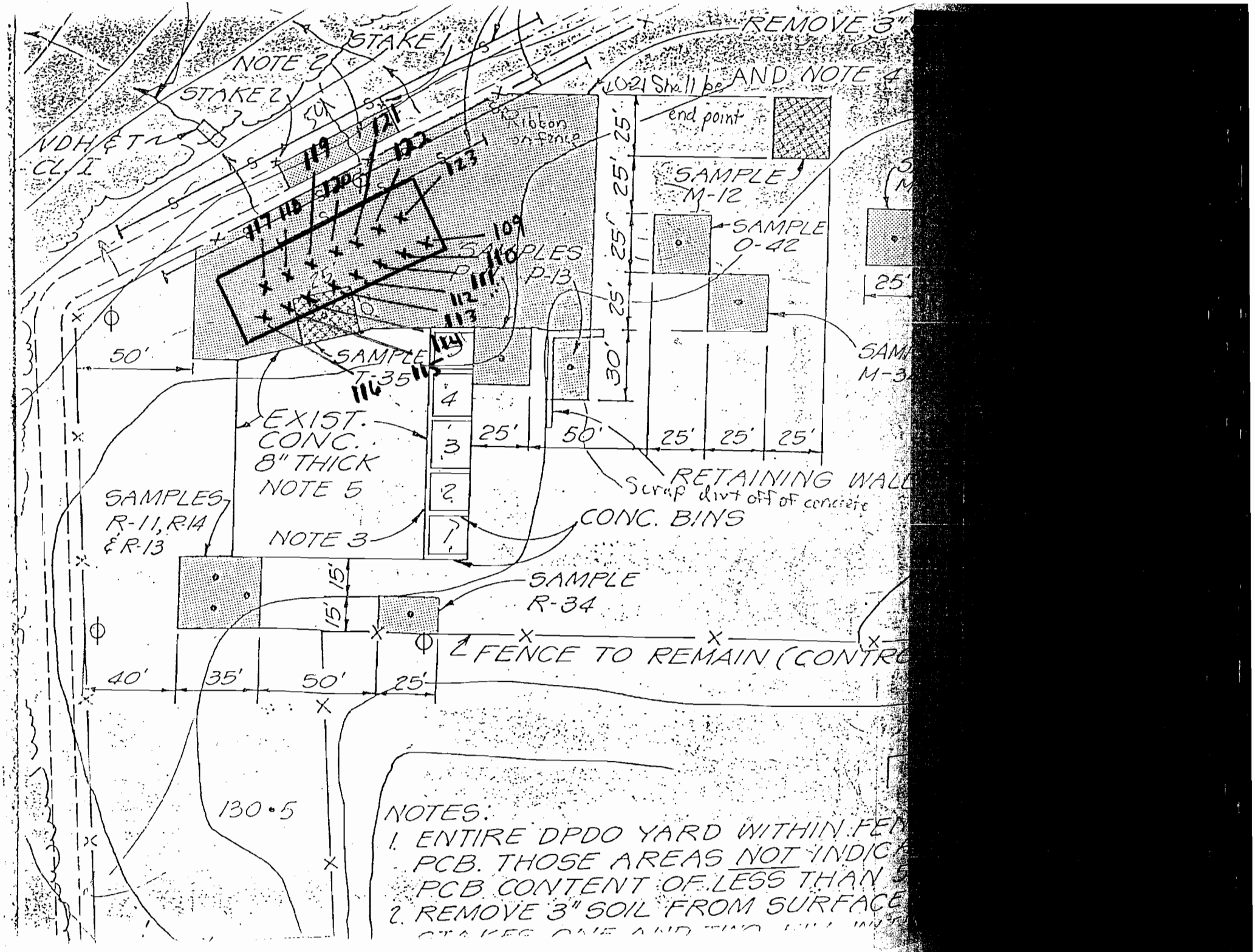
72 - 5
73 - 18
74 - 9
75 - 98
76 - 19
77 - 6
78 - 9
79 - 12
80 - 2
81 - 9
82 - 97
83 - 54
84 - 10
85 - 21
86 - 10
87 - 9



NOTES:
1. ENTIRE DPDO YARD WITHIN
PCB. THOSE AREAS NOT IN
PCB CONTENT OF LESS TH
2. REMOVE 3" SOIL FROM SURF

SAM

90 - 1
91 - 4
92 - 120
93 - 130
94 - 110
95 - 520
96 - 470
97 - 65
98 - 140
99 - 18
100 - 71
101 - 83
102 - 150
103 - 36


REMOVE 3"
STAKE 1
NOTE 2
STAKE 2
AND NOTE 4
end point
Ribbon
SAMPLE
M-12
SAMPLE
O-42
SAMPLES
P-13
SAMPLE
T-35
50'
25'
30'
4
3
2
1
EXIST.
CONC.
8" THICK
NOTE 5
SAMPLES
R-11, R-14
& R-13
NOTE 3
CONC. BINS
RETAINING WALL
Scrap dirt off of concrete
SAMPLE
R-34
FENCE TO REMAIN (CONTR
40'
35'
50'
25'
130.5
NOTES:
1. ENTIRE DPDO YARD WITHIN FEN
PCB. THOSE AREAS NOT INDIC
PCB CONTENT OF LESS THAN
2. REMOVE 3" SOIL FROM SURFACE

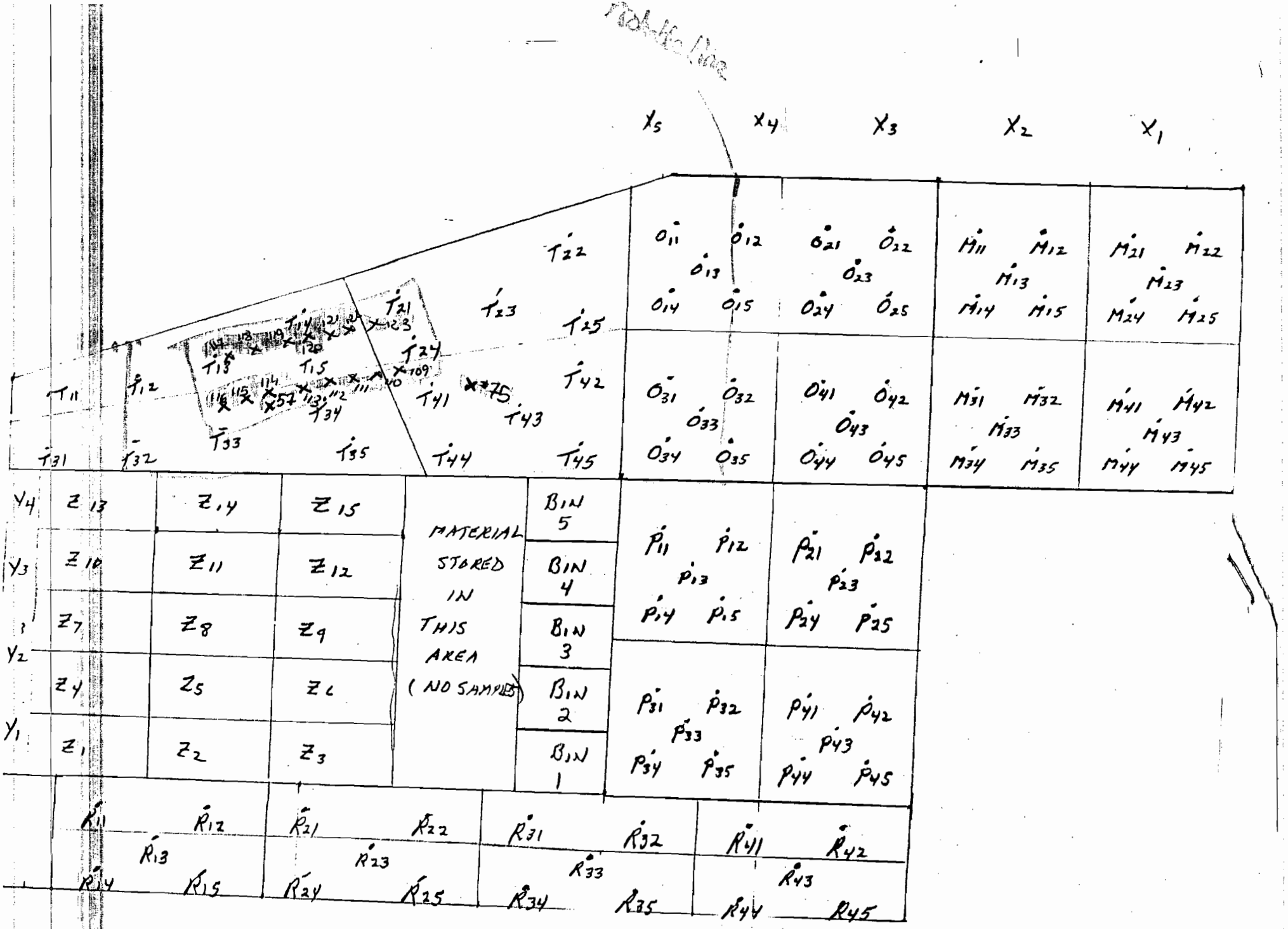

X5
X4
X3
X2
X1
Y4
Y3
Y2
Y1
MATERIAL STORED IN THIS AREA (NO SAMPLE)
BIN 5
BIN 4
BIN 3
BIN 2
BIN 1

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FIGURE 5 SITE DRAINAGE AND PCB CONTAMINATION LEVELS
DPDO YARD - FORT BELVOIR, VA
12-14 MAY 1980

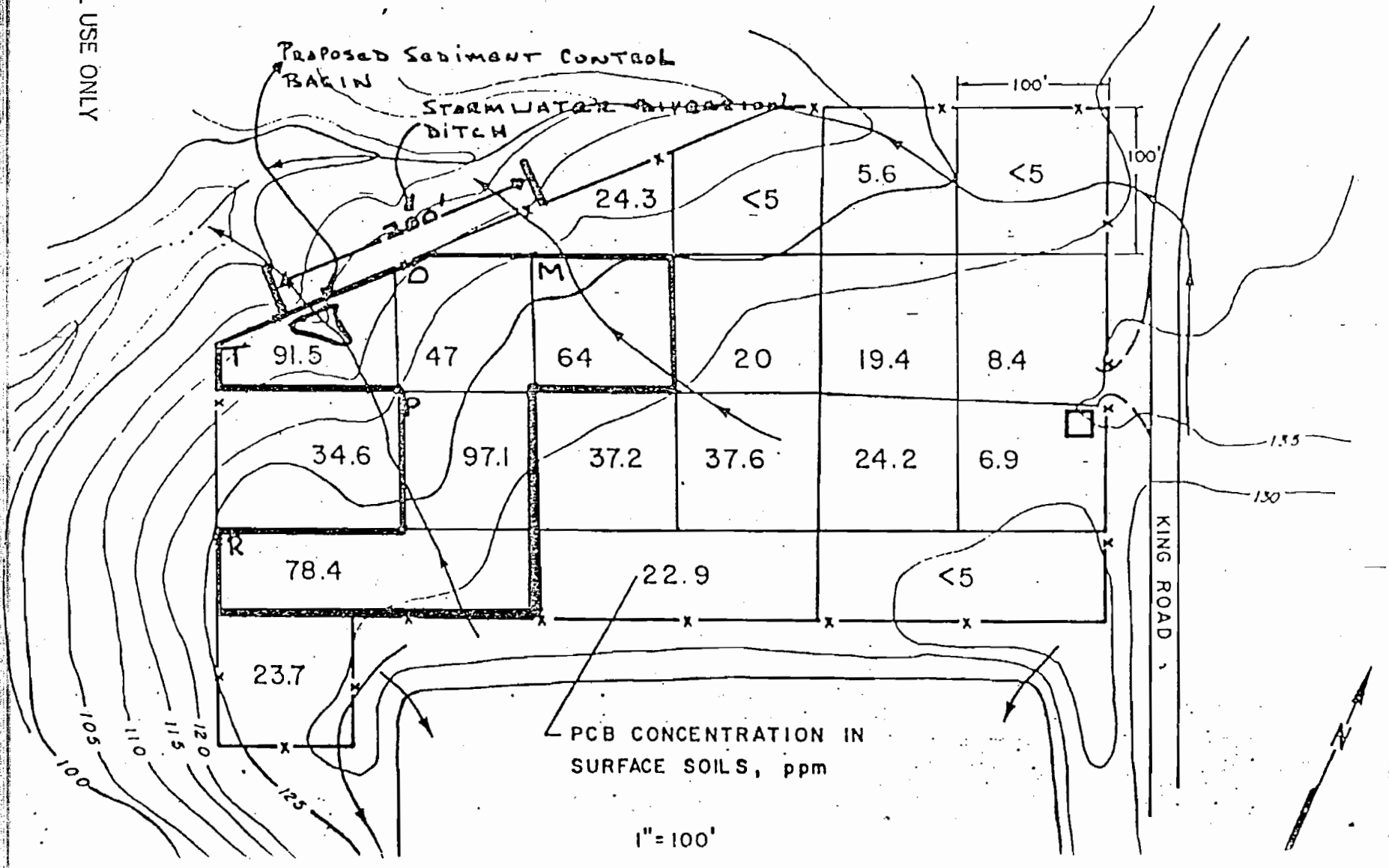

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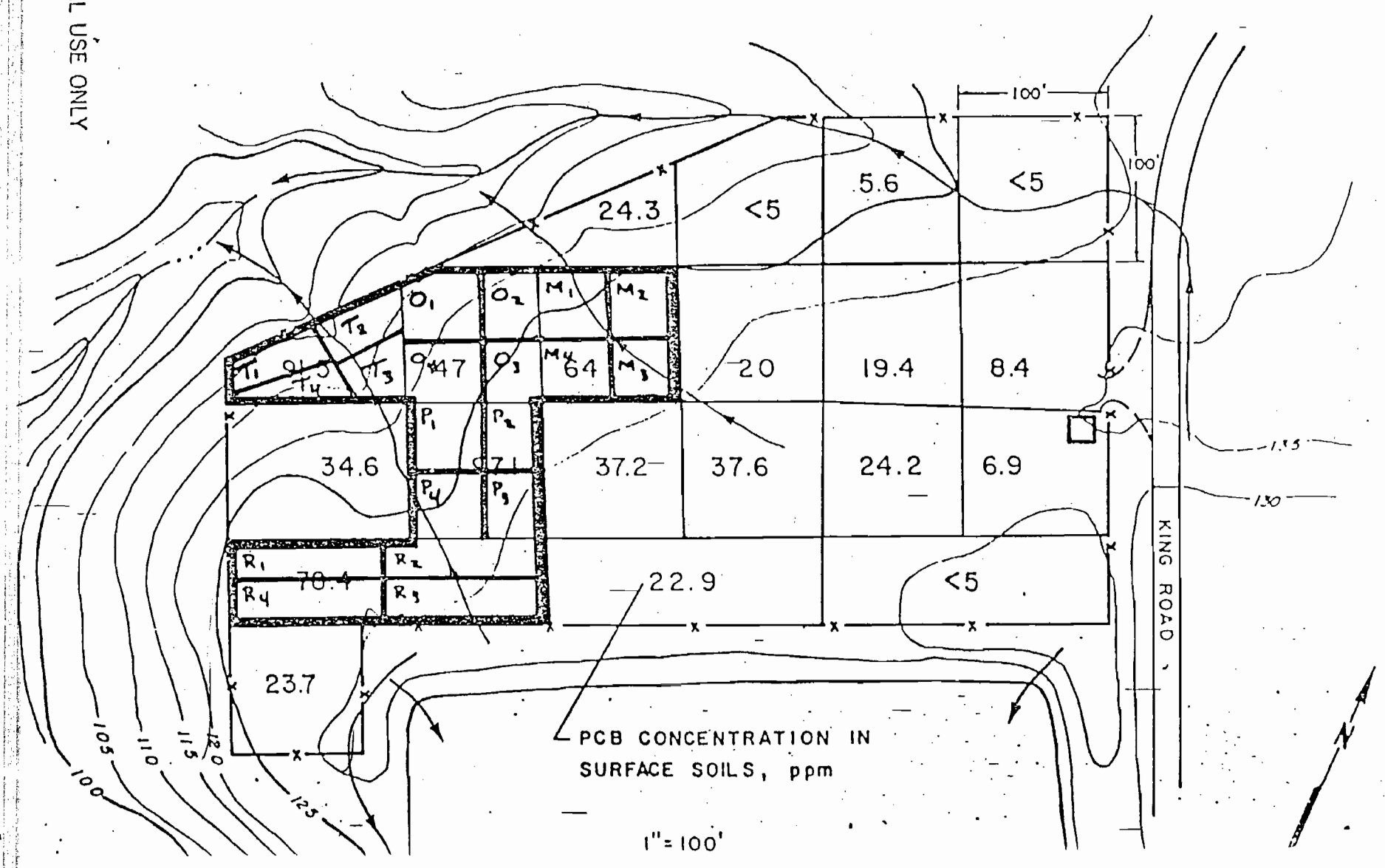
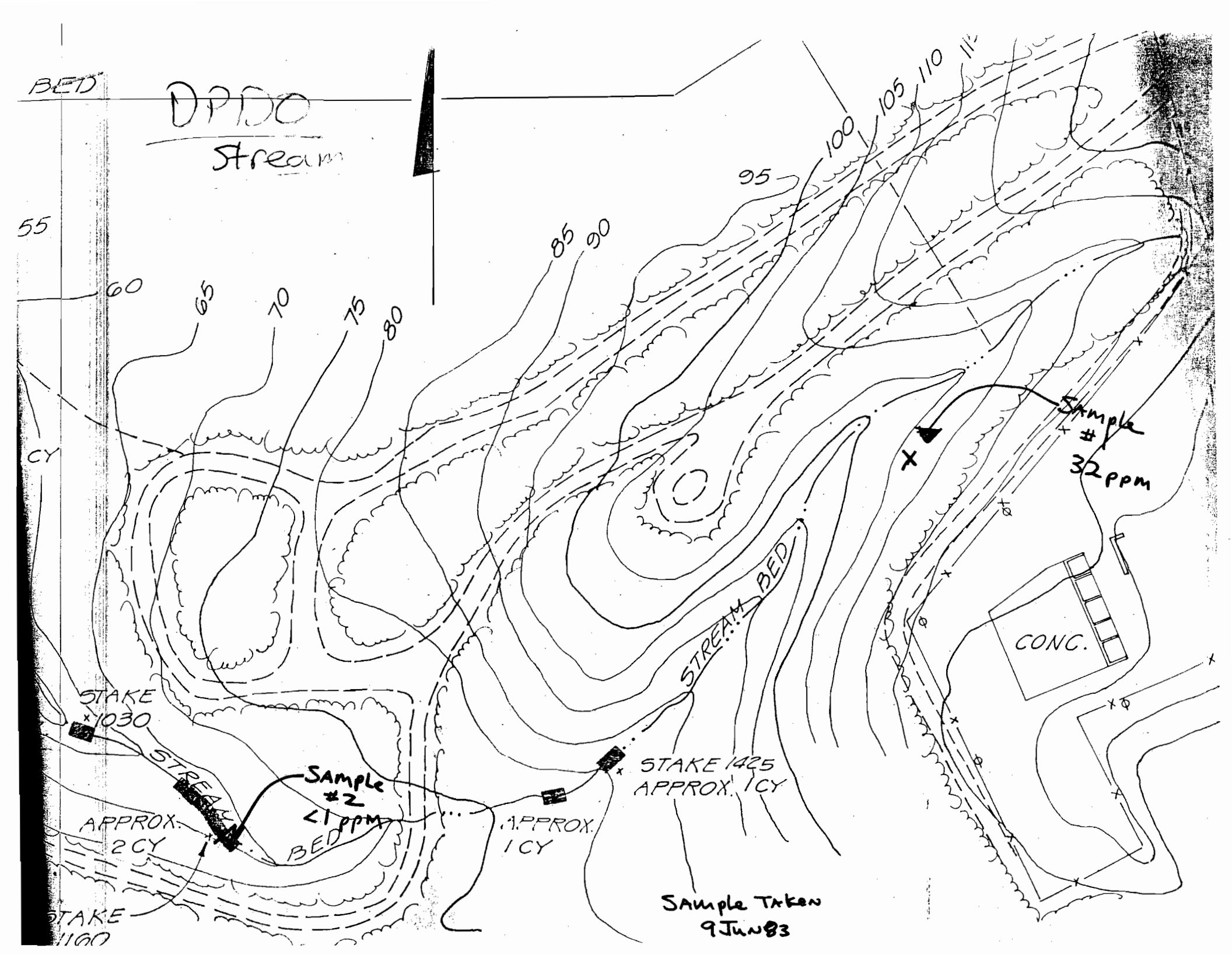
FIGURE 6 SITE DRAINAGE AND PCB CONTAMINATION LEVELS

DPDO YARD - FORT BELVOIR, VA

12-14 MAY 1980




BED
DPDO
Stream
55
60
65
70
75
80
85
90
95
100
105
110
CY
STAKE
1030
STREAM
Sample
#2
<1 ppm
APPROX.
2 CY
BED
APPROX.
1 CY
STAKE 1425
APPROX. 1 CY
STREAM BED
Sample
#
32 ppm
CONC.
Sample Taken
9 Jun 83

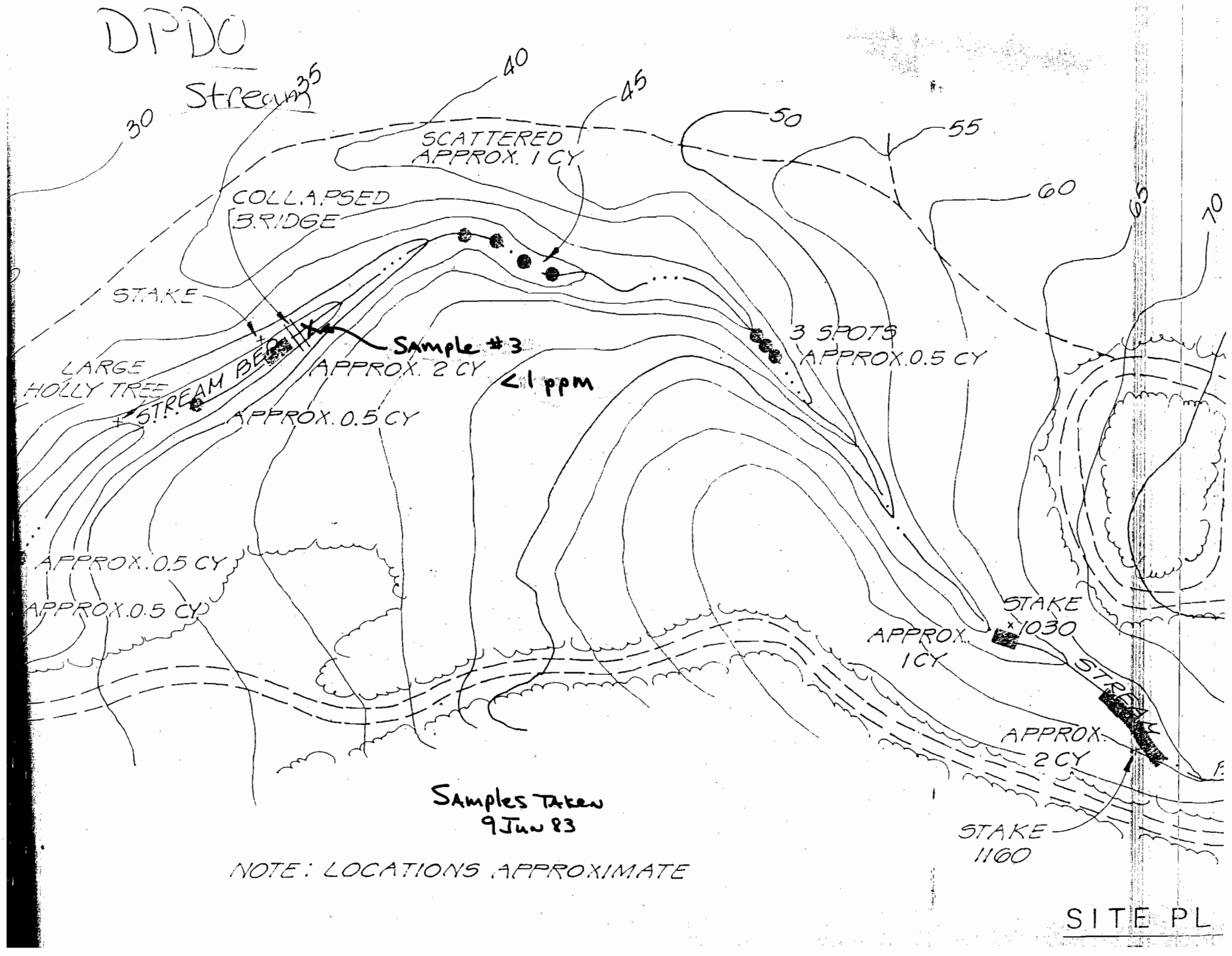
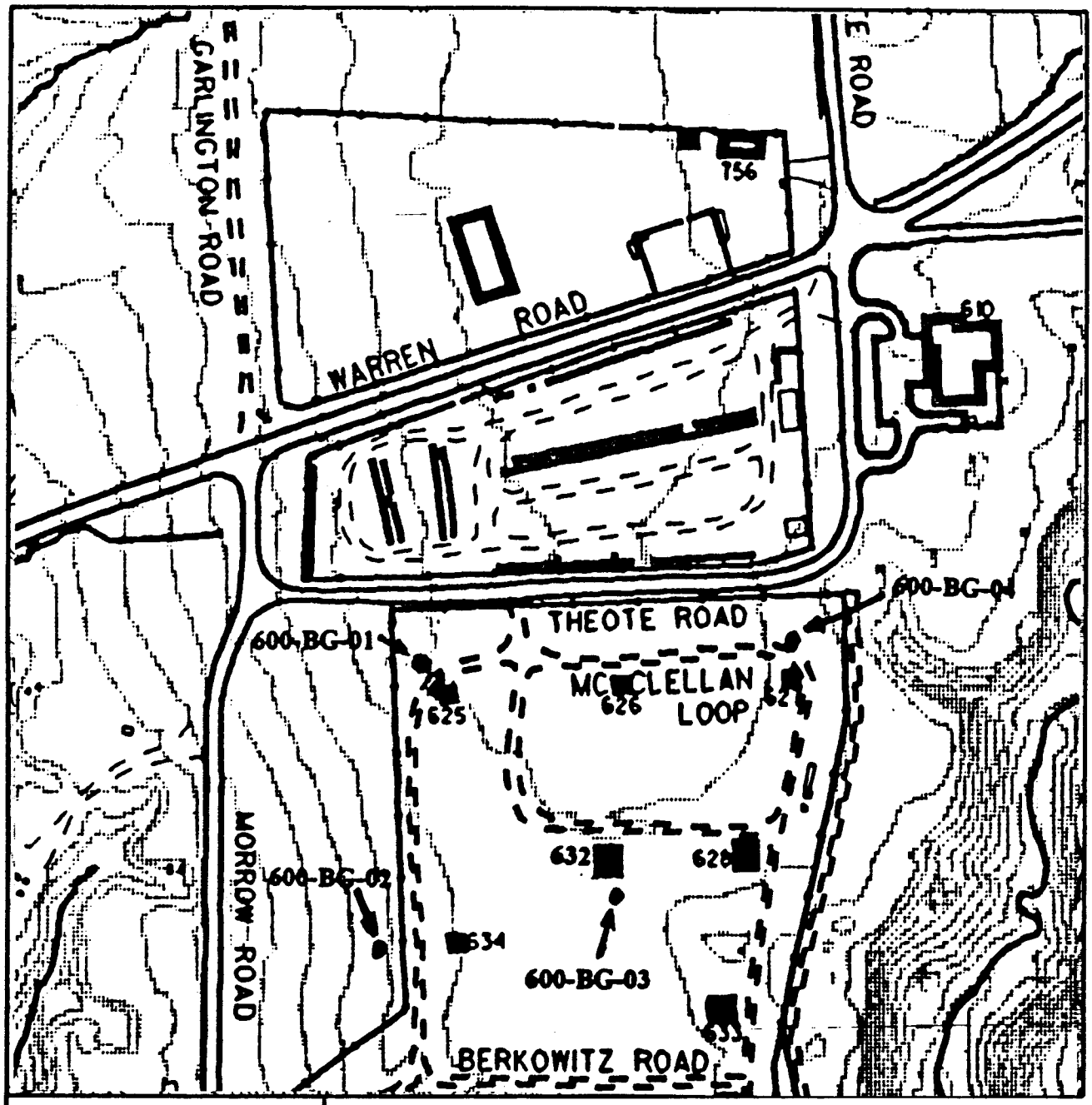

DPDO
Stream
30
35
40
45
50
55
60
65
70
SCATTERED
APPROX. 1 CY
COLLAPSED
B. RIDGE
STAKE
Sample #3
APPROX. 2 CY
<1 ppm
3 SPOTS
APPROX. 0.5 CY
LARGE
HOLLY TREE
STREAM BED
APPROX. 0.5 CY
APPROX. 0.5 CY
APPROX. 0.5 CY
STAKE
1030
APPROX.
1 CY
STREAM
APPROX.
2 CY
STAKE
1160
Samples Taken
9 Jun 83
NOTE: LOCATIONS APPROXIMATE
SITE PL

Table A-3. B03 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
600-BG-01	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-02	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-03	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-04	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21

The source of data: Building 632 Closure Report (Department of the Army, July 1996)



LEGEND

600-BG-01 - Approximate background sampling location

627 - Building number and approximate location

Figure 4

Background Sample Locations

Waste Storage Facility at Building 632

Table A-4. B04 Historical PCB Data

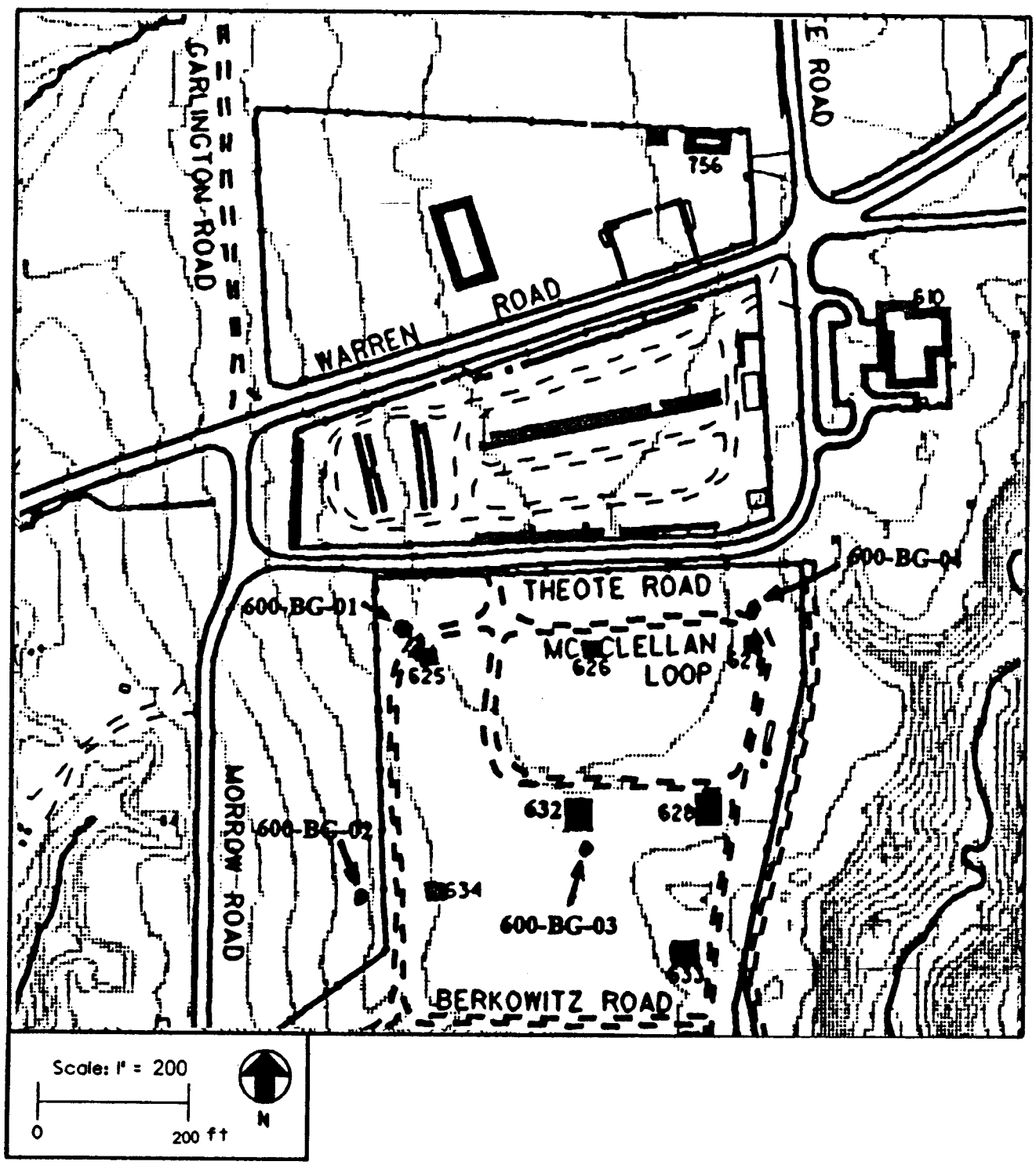
Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not available.

Table A-5. L47 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
600-BG-01	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-02	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-03	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21
600-BG-04	2/8/1994	Method 8080	<21	<21	<21	<21	<21	<21	<21

The source of data: Building 633 Closure Report (Department of the Army, July 1996)



LEGEND

600-BG-01 - Approximate background sampling location

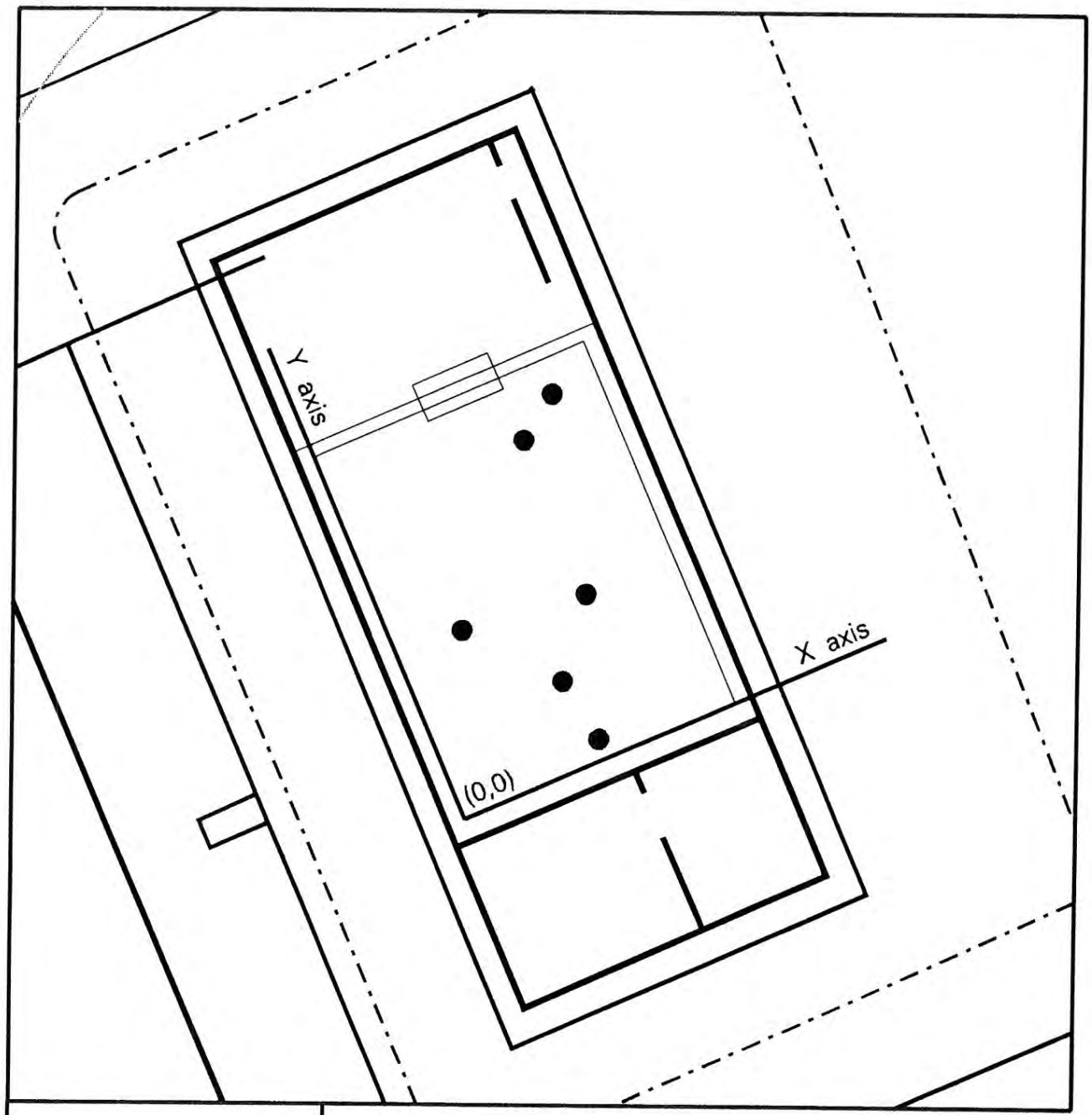
627 - Building number and approximate location

Figure 4
Background Sample Locations
Waste Storage Facility at Building 633

Table A-6. B09 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Matrix	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
B1430-CONC1	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-CONC2	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-CONC3	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-CONC4	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-CONC5	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-CONC6	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL1	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL2	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL3	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL4	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL5	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL6	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL7	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL8	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL9	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL10	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL11	6/19/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
B1430-SOIL12	6/18/1997	EPA 8081	Soil	<1	<1	<1	<1	<1	<1	<1
PCB WIPES (ug/wipe)										
B1430W1	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5
B1430W2	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5
B1430W3	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5
B1430W4	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5
B1430W5	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5
B1430W6	6/23/1997	EPA 600/4-81-045	Wipe	<5	<5	<5	<5	<5	<5	<5

The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).



SAMPLE #	SAMPLE LOCATIONS	
	X	Y
1	24.4	36.1
2	29.3	41.5
3	9.9	20.1
4	24.5	27.5
5	10.5	1.5
6	19.3	7.1

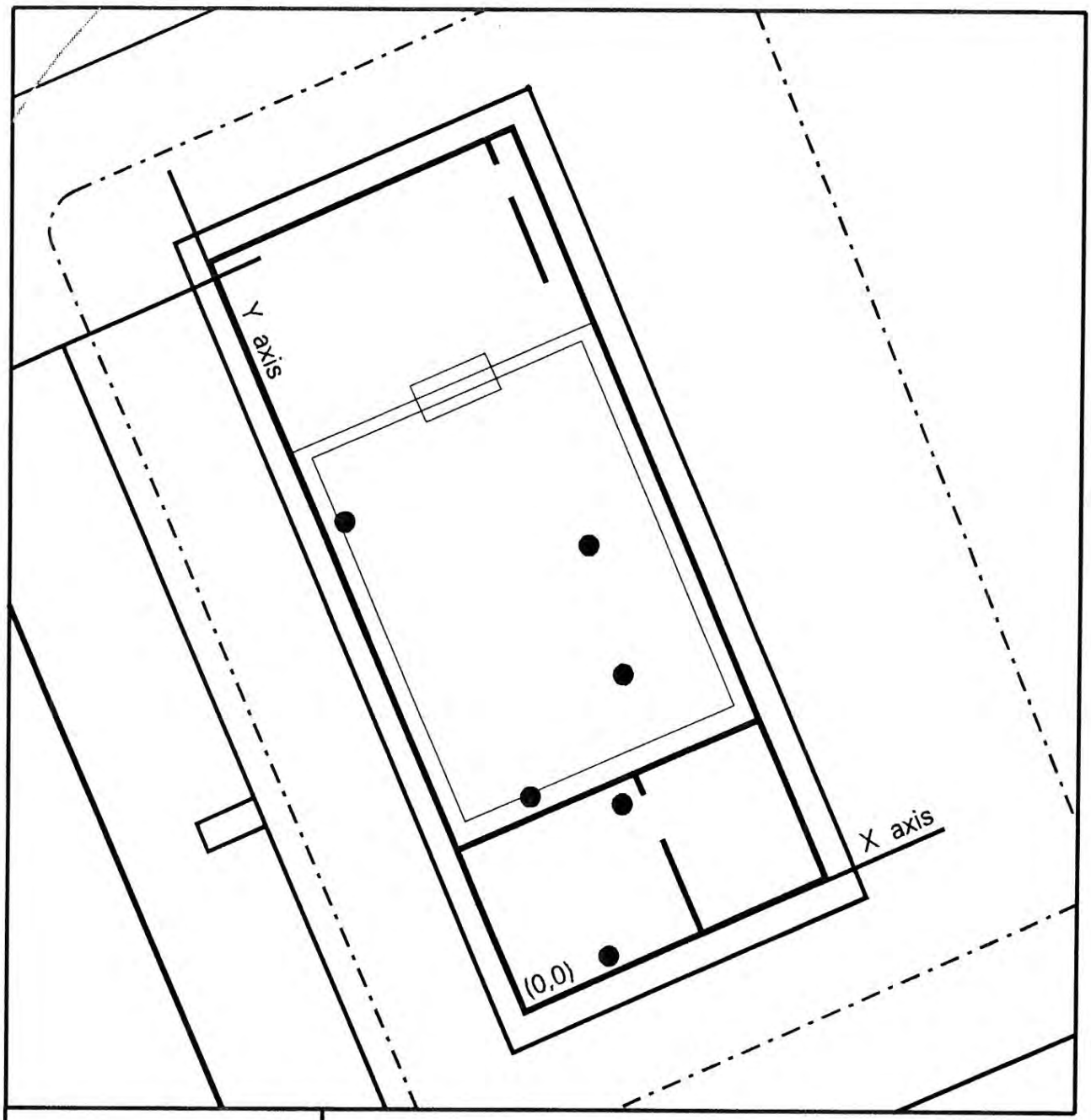
Site Boundary Lines — · — · — · —

FORT BELVOIR
SOLID WASTE MANAGEMENT UNIT

Wipe Sample Locations
Site B-9

PCB Storage Area
(Building T-1430)

Figure 3



Scale: 1" = 20'

0 20 ft

N

SAMPLE #	SAMPLE LOCATIONS	
	X	Y
1	20.9	17.9
2	2.0	66.7
3	27.9	33.0
4	12.9	24.9
5	13.7	1.9
6	29.0	47.2

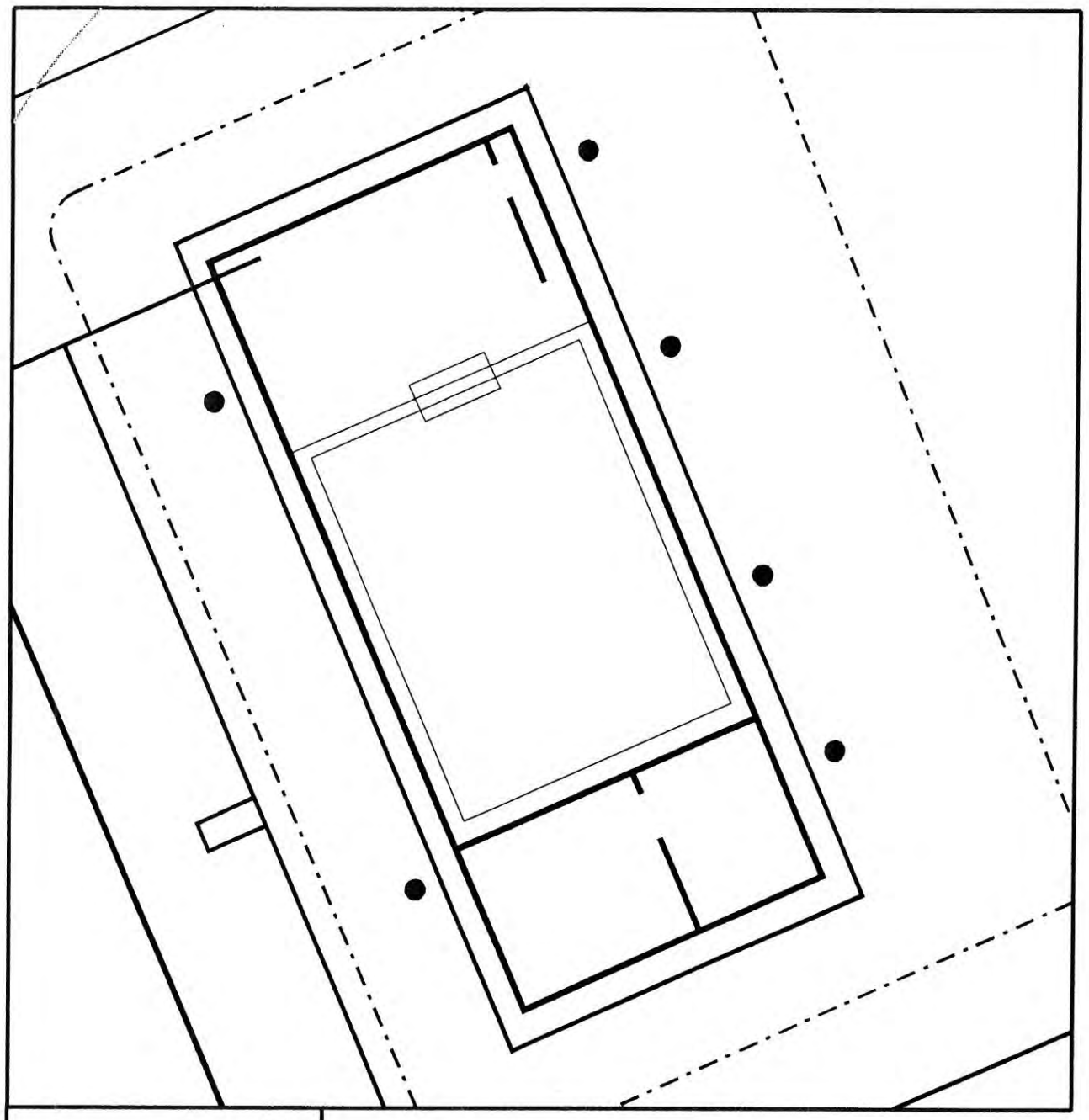
Site Boundary Lines — · — · — · —

FORT BELVOIR
SOLID WASTE MANAGEMENT UNIT

Sample Location
Site B-9

PCB Storage Area
(Building T-1430)

Figure 4



SAMPLE LOCATION

COLLECT SAMPLES AT THE APPROXIMATE LOCATIONS SHOWN SAMPLING POINTS SHALL BE NO MORE THAN 5 FEET FROM THE EDGE OF THE STRUCTURE.

Site Boundary Lines —·—·—·—·—

FORT BELVOIR
SOLID WASTE MANAGEMENT UNIT

Sample Location
Site B-9

PCB Storage Area
(Building T-1430)

Figure 5

Table A-7. B10 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not available.

Table A-8. L03 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA: Not available.

Table A-9. L04 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	PCBs (mg/kg)	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)
B 3126-Soil	1/8/1998	EPA 8081	<1	NA	NA	NA	NA	NA	NA	NA
SN: 2448702	1/31/1997	EPA 8081	6	NA	NA	NA	NA	NA	NA	NA
SN: 1728509	1/31/1997	EPA 8081	<5	NA	NA	NA	NA	NA	NA	NA
SN: 2448718	1/31/1997	EPA 8081	24	NA	NA	NA	NA	NA	NA	NA

NA: Not available.

The source of the data: Final version of Visual Site Inspection (TetraTech, 2008).

Table A-10. 1495 Historical PCB Data

Sample ID	Sample Date	Analysis Mehthod	Aroclor 1016 (mg/kg)	Aroclor 1221 (mg/kg)	Aroclor 1232 (mg/kg)	Aroclor 1242 (mg/kg)	Aroclor 1248 (mg/kg)	Aroclor 1254 (mg/kg)	Aroclor 1260 (mg/kg)	Aroclor 1262 (mg/kg)	Aroclor 1268 (mg/kg)
FBB1495SS61N	8/20/2012	SW846 8082A	<0.0091	<0.0021	<0.0018	<0.0011	<0.0011	<0.0016	0.23	<0.0010	<0.0011
FBB1495ASP	8/20/2012	SW846 8082A	<0.0086	<0.0020	<0.0017	<0.0011	<0.0010	<0.0016	3.17	<0.0098	<0.0011
FBB1495SS12IN	8/20/2012	SW846 8082A	<0.0095	<0.0022	<0.0018	<0.0012	<0.0011	<0.0017	<0.0012	<0.0011	<0.0012

The source of the data: EA Engineering, 2012.

APPENDIX B

PCB Historical Use Inventory, Analysis, and Sampling Points Determination

APPENDIX B.1

PCB Historical Use Inventory

7161 Columbia Gateway Drive, Suite C, Columbia, MD 21046 Phone 410 997 4458 Fax 410 997 8713
www.tideh2o.net

The historical use inventory fulfills Section I B 6 requirements to evaluate properties for potential sources of the WLA pollutant. For PCB TMDL the inventory is looking for sites where PCBs are currently or have been historically stored, transferred, transported, or spilled in a manner that would expose it to precipitation.

The historical use inventory adhered to the following steps:

1. Several lists of sites were provided by the Fort Belvoir DPW-ENRD. Tidewater collected the various lists and compared them for consistency.
2. A site walk for outfall reconnaissance inventory was completed on November 5, 2012 for 10 sites identified by Fort Belvoir DPW-ENRD.
3. An internet search for "PCB and Fort Belvoir" was completed to recover any other sources referencing PCBs at Fort Belvoir to ensure the list of sites provided by DPW-ENRD was comprehensive.
4. The Fairfax County Planning department was contacted to follow up on a PCB site reference recovered during the internet search.
5. Information was requested and received from VDEQ regarding a site referenced in the Potomac River Watershed PCB TMDL Study Report.

Details and findings are provided from each step.

Step 1 – Collecting and comparing ENRD lists for consistency

Details:

A cursory review was conducted in May 2012 by DPW-ENRD personnel that indicated there are approximately 10 locations at Fort Belvoir where historical PCB presence is documented. The number of 10 locations is noted in background section in the contract scope of work.

Wilamena Harback provided a text summary of PCB information for 9 sites received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B09, B10, L03, L04, L47) The summaries also include notes regarding each sites potential drainage area.

Amy Martin provided a spreadsheet summary of information on 9 SWMUs of potential PCB concern received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B09, B10, L03, L04, L47)

Carol Robertson of SCF LLC, the contractor that supports SWMUs, MMRP and Petroleum Management Programs at Fort Belvoir, provided a list of 7 SWMUs of potential PCB concern with a statement of current site status received by Tidewater via email from Pam Couch. (A23, A24, B03, B04, B10, L03, L47). It was noted that Phase I work will begin in Fall 2012 at L03 and L47.

The above 9 sites are established environmental clean-up sites. The site ID's were established by the 1988 RCRA Facility Assessment at Fort Belvoir. The tenth site is Building 1495. This location was recently brought to DPW-ENRD's attention when it was observed that transformers possibly containing PCBs were being stored outside and unprotected at the Northeast corner of the parking lot.

The 10 locations provided by DPW-ENRD personnel for consideration in this historical use inventory are as follows:

Site ID	Description	PCB Presence
A23	Former Coal Storage Area	One time PCB Spill
A24	Former DPDO Storage Area	One time PCB Spill
B03	Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
L47	Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
B09	Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
Building 1495	Outdoor Transformer Storage Area	Transformers possibly contained PCBs

Findings:

The list of 10 sites is consistent between various lists by DPW-ENRD.

Step 2 – Site Visit for Outfall Reconnaissance Inventory

Details: Site walk took place from 0800-1600 on November 5, 2012. Participants included the following:

Pamela Couch	Fort Belvoir DPW-ENRD
Sam Yoon	Tidewater
Sara McGarity	Tidewater
Andrew Solomon	Tidewater

Sites visited in order were:

1. L47
2. B03
3. B04
4. A23
5. B10
6. A24
7. Building 1495
8. B09
9. L03
10. L04

During the reconnaissance, notes were taken regarding each site's current status. In addition, pictures were also taken of each site showing each site's current status. All photos were provided to DPW-ENRD on CD. Many of the sites were included in a visual site assessment completed in 2005. Fewer notes were taken when the 2005 observations matched what was observed during this visit. Also, proximity of each PCB site to an outfall to surface waters was reviewed.

Findings:

L47 – Former Concrete Pad Transformer Storage Area

This site was challenging to locate since the concrete pad is no longer present at the site and much vegetation has grown up around it. There was no visual evidence of PCBs at the site. There were no storm drains close by, but it was noted that on the other side of the road on the other side to the fence adjacent to the site, there is a steep drainage area that leads to a creek. It was concluded that this site would not be a likely source of PCBs given the site was cleaned up in the past and it is a significant distance from any storm drains. While at the site, 2 flags were discovered that seemed to signify sampling locations. When going back and looking at the sites lists, the email from Carol Robertson of SCF indicated Phase I work was planned for L47 starting in Fall 2012. More information regarding this Phase I work should be gathered if possible to ensure it does not involved PCBs.

B03 – Former BLDG632 Hazardous Waste Storage Area

This site was near L47 and there is no visual evidence of PCBs at the site. Building 632 has been removed from the location; the site was remediated, and received regulatory closure from VDEQ in 1997. There are no stormwater drains nearby. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as there is no longer evidence of the hazardous waste storage area where PCBs were stored, the site was remediated, re-vegetated, and there are no nearby storm drains.

B04 – Former BLDG633 Hazardous Waste Storage Area

This site was also near L47 and again there is no visual evidence of PCBs at the site. Building 633 has been removed from the location; the site was remediated, and received regulatory closure from VDEQ in 1997. There were no stormwater drains nearby, but a culvert leading to the nearby steep drainage was located slightly north of the former building site. Currently the site is wooded with substantial brush growth. It was concluded that this site would not be a likely source of PCBs as there is no longer evidence of the hazardous waste storage area where PCBs were stored, the site was remediated, re-vegetated, and there are no nearby storm drains.

A23 – Former Coal Storage Area

The site was challenging as the historical documentation regarding the exact location of the spill was disorganized and comingled with information from site A24. Site A23 is currently used as a materials recycling sorting and storage area. In the late 1970's a onetime PCB spill occurred. The site underwent remediation. There were several stormwater drains located within the concrete sorting area. Near one drain there was vegetation growing. The natural drainage channel to the West of the site reference in historical documents was difficult to locate. Drainage channels to the East and to the South were indentified during the site visit, but in fact do not seem related to the PCB spill at the site or of concern with regard to PCBs in stormwater. The spill area was remediated in the early 1980s and there is no longer evidence of the PCB spill at the site. Due to the extensive site remediation, it was concluded that this site would not be likely to be a source of PCBs. However, it was noted that this site should be given special consideration in the site analysis.

B10 – Building 190 Former Indoor Storage Room

This site was once located inside of Building 190. Building 190 was not entered during the site visit as the finding from the 2005 visual inspection appeared to hold that the indoor storage room was entirely renovated such that there was no evidence of the storage area. It was concluded that this site would not be a likely source of PCBs because there were no reported PCB spills at the site, the storage area was located inside such that the materials were not exposed to precipitation, and the area has since been renovated.

A24 – Former DPDO Storage Area

In the late 1970's a one-time PCB spill occurred at the site. During the 2005 site assessment, this site could only be observed from the outside due to fencing surrounding the area. On this most recent site visit, the area was accessed through a part of the fencing that had been torn down. The site is currently wooded with thick brush. There was no visual evidence of the PCB spill. A drainage feature was identified along the northern fence line. However, based on location of the PCB spill cleanup, the drainage feature would not have been impacted. A natural creek to the northwest of the site was also observed. In the early 1980's the site underwent successful remediation to remove PCB contaminated soil and prevent PCBs from migrating from the site. Due to the extensive site remediation and available clean up documentation, it was concluded that this site would not be likely to be a source of PCBs.

Building 1495 – Outdoor Transformer Storage Area

This site was recently used as a location where transformers were stored. There was visual indication of transformer fluid leaks on the pavement. Containment measures were in place around the area where fluid had leaked. The area was exposed to precipitation. A north drainage channel to the north and natural drainage channel east of the site were observed. To the east of the site is a steep slope to the entrance of the building. It was concluded that this site would be a likely source of PCBs and should be carried through to the next step of establishing a sampling plan. Potential sampling locations were suggested during the site visit.

B09 – Former Building 1430 Transformer Storage Area

This site is currently inaccessible due to fencing surrounding the area, and Building 1430 no longer exists. The site is currently being used to store trailers, some containing generators. The raised berm and ramp constructed after 1991 were visible. The exact area where PCB containing transformers were stored is not identifiable and there was no visual indication of PCBs. One storm drain is located nearby, and the area is entirely paved. Historic documents indicated that the area was sampled in 1997 to determine any possible impact of PCBs. All of the samples were non-detect using EPA Method 8082. It was concluded that this site would be an unlikely source of PCBs due the paved nature of the and past sampling that did not detect any PCBs at the site.

L03 – Former Asphalt Storage Pad near Building 2596

This site is located behind the fenced in restricted access area of Building 2596, Humphreys Engineering Center. During the site visit, it was not possible to determine the exact location of the site as described in the historical documents. The historical documents reference an asphalt pad where debris, drums and transformers were stored. In agreement with the 2005 observations, there was no evidence of this storage area currently present at the site. Since the site area was unknown, a dry stormwater retention pond was

visually observed. It was concluded that this site would not be a likely source of PCBs since there is presently no evidence of PCBs at the site. When going back and looking at the sites lists, the email from Carol Robertson of SCF indicated Phase I work was planned for L03 starting in Fall 2012. More information regarding this Phase I work should be gathered if possible to ensure it does not involved PCBs.

L04 – Hanger 3126 Former Outdoor Concrete Pad Transformer Storage Area

This area no longer resembles the site as described in the historical record. According to the record, transformers were once stored on a fenced-in concrete pad. The concrete pad is no longer present and the area of transformer storage is now covered with gravel and contains a picnic bench and grill. There is a natural drainage feature to the southwest of the site. It was concluded that this site would not be a likely source of PCBs due to renovated nature of the area.

Step 3. – Internet Search

Details:

In addition to base personnel information, potential PCB sites were also investigated by searching for historical and current documents reasonably accessible documents that mention PCBs and Fort Belvoir.

Findings:

A 1994 GAO report was recovered that highlights the need for DOD to better identify and monitor equipment containing PCBs (GAO, 1994). As a part of the report investigations, an inspection was carried out at Fort Belvoir. The report notes that the fire department at Fort Belvoir received its first inventory of the Fort's known PCB equipment the day prior to the inspectors visit. Efforts were not made to recover this inventory as the SWMU and RCRA assessments are more recent and are assumed to incorporate any information that would have been contained in the GAO inventory.

A reference of PCBs at Fort Belvoir is made in the Fairfax County Comprehensive Plan, 2011 Edition Springfield Planning District, Area IV. Page 10 of the plan states, "A comprehensive evaluation of existing environmental conditions at the FBNA site revealed petroleum hydrocarbon contamination at some locations, **as well as PCB concentrations in three transformers that exceed federal guidelines.** Clean-up of any contaminated sites at the FBNA is required prior to any dedication or development of the Fort Belvoir North Area **(FBNA)** site." (Emphasis added).

Step 4 – Follow up with Fairfax County

Details:

The Fairfax County Planning Department was contacted by phone to determine if more information regarding the site referenced in their plans was available.

Findings:

The specific site referenced in the document is unknown. It is also unknown whether the site is even still in existence or if it has been dealt with in conjunction with redevelopment of the area. It was confirmed

that the area of the referenced PCB site is the Fort Belvoir North Area (FBNA), not to be confused with the Fort Belvoir North Post Area. The FBNA is under the jurisdiction of the Fort Belvoir MS4 permit. The referenced site is not included in this investigation due to lack of available information.

Step 5 – VDEQ

Details:

The Potomac River Watershed PCB TMDL Study Report notes a site at Fort Belvoir in Appendix A page A-30 as contributing a PCB load of 1.74 g/yr to the POTPCB model. The site is not identified by name. However, the longitude and latitude provided in the table on page A-30 corresponds to the location of site A23. While A23 is already identified as a site for historical use analysis in this action plan, the inclusion of A23 as a direct PCB contributor is of concern due to the extensive remediation that has taken place at the site. Investigating this reference further, in the Final Visual Inspection Report for Site A23 page 48 is a copy of a 2006 email from Katie Conaway to Marcia Kicos of DPW-ENRD. Katie Conaway is cited as an author of the Potomac PCB TMDL report. In the email Katie Conaway notes that after looking over the data provided on PCB contaminated sites at Fort Belvoir, they want to focus on A23 and A24. Katie Conaway of VDEQ was contacted on 11/30/2012 and was able to provide Tidewater with the two original emails between VDEQ and Fort Belvoir DPW-ENRD regarding PCB sites. The first email is dated 10/04/2006 and the second is dated January 11, 2007.

Findings:

The 10/04/2006 email contains an excel file with two lists of possible PCB sites. The first list was made by VDEQ by looking through the full list of SWMU registered to Fort Belvoir of which 11 mention PCBs. The VDEQ list contained the same 9 sites as the most recent DPW-ENRD lists and also noted A04 and N13, but did not include Building 1495. The second list was done by Laura Curtis of DPW-ENRD and is a follow up to the VDEQ list. Fort Belvoir DPW-ENRD responded proposing a list of only 4 sites being considered because there are only 4 sites where PCB spill had occurred. These four sites were A23, A24, B09, and L04.

A04 is the larger Former Coal Storage Area that includes A23 and other areas. Site A23 is contained within A04 and therefore A04 need not be addressed separately. N13 is Building 1490 Hazardous Material Storage Area. According to historical records, this building held hazardous waste including PCB containing transformers. It is unknown why this site was omitted from the DPW-ENRD lists. However, based on the site assessment as documented in the SWMU summary, this site would not be a likely source of PCBs as there were no recorded releases that occurred at the site. Whether or not to include this site in the analysis will need to be determined by DPW-ENRD personnel. It is recommended that inclusion or exclusion of this site between consistent with how B03 and B04 be incorporated as the sites are very similar.

Inventory Conclusions

The DPW-ENRD list of 10 sites is an accurate list of PCB sites at Fort Belvoir with the omission of N13 which should be included unless other rationale and support can be provided for its exclusion.

The table below includes all sites mentioned or researched during this inventory, with the exception of the NFBA site from the Fairfax County Comprehensive Planning Document which was determined not to be relevant.

Site ID	2012 ENRD Review	2006 DEQ Correspondence - Long List	2006 DEQ Correspondence - Short List	2008 Potomac Watershed PCB TMDL Study	Description	PCB Concern
A04		X			Former Coal Storage Area	Larger area containing A23 where a onetime PCB spill occurred
A23	X	X	X	X	Former Coal Storage Area	One time PCB Spill
A24	X	X	X		Former DPDO Storage Area	One time PCB Spill
B03	X	X			Former BLDG632 Hazardous Waste Storage Area	Included PCB contaminated materials
B04	X	X			Former BLDG633 Hazardous Waste Storage Area	Included PCB contaminated materials
B09	X	X	X		Former Building 1430 Transformer Storage Area	Transformers contained PCBs
B10	X	X			Building 190 Former Indoor Storage Room	PCB containing material stored in room
L03	X	X			Former Asphalt Storage Pad near Building 2596	Transformers possibly contained PCBs
L04	X	X	X		Hangar 3126 Former outdoor concrete pad transformer storage area	Transformers contained PCBs
L47	X	X			Former Concrete Pad Transformer Storage Area	Transformers contained PCBs
N13		X			Building 1490 Hazardous Material Storage Area	Included drums of PCB oils
Building 1495	X				Building 1495 Outdoor Transformer Storage Area	Transformers possibly contained PCBs

Historic use analysis will be carried out on the 11 sites below:

A23
A24
B03
B04
B09
B10
L03
L04
L47
N13
Building 1495

APPENDIX B.2

PCB Historical Use Analysis and Sampling Points Determination

The purpose of the historic use analysis is to evaluate each site to determine the location of outfalls discharging to surface waters that would have the potential to discharge PCBs in stormwater during a rain event and recommend outfall sampling points.

In order for PCBs to discharge in stormwater they first must be present at the site and exposed to precipitation. If it can be concluded, based on multiple lines of evidence, that PCBs are no longer present at a particular site or exposed to precipitation, it is reasonable to conclude that PCBs would not be discharged in stormwater from that site. Additionally, if PCBs are still thought to be present at a site, even in very low concentrations, in order for PCBs to be discharged in stormwater from the site, drainage area analysis of the site would need to show a likely pathway for the stormwater discharging to surface waters via a system outfall.

The historic use and sampling point analysis proceeded as follows:

1. A rubric of parameter questions was established to use to evaluate each site.
2. Historical documents from each site were reviewed to evaluate each site using the list of established parameters.
3. A map showing the area of interest for the site, site elevations and the nearest stormwater outfalls and features, was created for each site.
4. Drainage to a specific water body was categorized for each site and determined to direct or indirect drainage.
5. Conclusions were drawn regarding each site and presented using a weight of evidence approach. At each site for which it is appropriate, sampling locations are suggested.

Rubric Parameters

The rubric parameter questions were established to provide important details and help support developing lines of evidence regarding the status of each site.

The parameters are as follows:

- Were PCBs confirmed present at the site and how?
- Was there observable staining likely or confirmed from PCB fluids?
- Was there a reportable PCB release and when?
- Has the site undergone remediation?
- Has the site undergone demolition?
- Is the site now wooded?
- Is the site still in use, but now serving a different purpose?
- Was PCB data collected at the site?
- Has the site been closed through a regulatory agency and when?
- Has recommended for closure in past evaluations?
- Were PCBs stored indoors or outdoors?
- Was the site a formal storage area?
- Was there secondary containment present at storage sites?
- Were transformers noted as being present at some point or established as the source of PCBs at the site?

Completed Rubric

The completed full rubric is shown on the following 2 pages.

Maps

Maps were created showing the location of each site, site elevations and the nearest stormwater outfalls and features. The maps will be provided after the rubric once they are developed.

Drainage

A summary list was provided by DPW-ENRD that contains specification of site drainage.

Watershed Delineation Project and Problem Site Descriptions including Maps and Photographs, Volumes I-III" dated 1 March 1999 prepared for Fort Belvoir (Performance Group, Inc. 1999) were used. Mr. Chris Landgraf of Performance Group, Inc. performed the work to verify drainage descriptions and receiving water bodies.

The table below provides the DPW-ENRD description, the water body of interest to the PCB TMDL, and classification of the site as direct or indirect drainage. Direct drainage sites drain to a swale or tributary and then directly to named PCB TMDL receiving waters. Indirect drainage sites drain first to a swale or tributary, then to another swale tributary or name water body before finally draining to named PCB TMDL receiving waters. PCB TMDL receiving water related to Fort Belvoir MS4 permit outfalls include Gunston Cove, Accotink Creek, and Dogue Creek.

Site	Description	Drainage Description from Fort Belvoir DPW-ENRD	Receiving PCB TMDL Water Body	Direct or Indirect Drainage
A23	Former Coal Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Gunston Cove.	Gunston Cove	Direct
A24	Former DPDO Storage Area	The closest receiving stream is an unnamed tributary (intermittent at the area closest to the site) to Accotink Bay.	Accotink Bay	Direct
B03	Former BLDG632 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
B04	Former BLDG633 Hazardous Waste Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
B09	Former Building 1430 Transformer Storage Area	This location does not have any direct drainage swales but the closest stream is an unnamed tributary to Accotink Creek.	Accotink Creek	Indirect
B10	Building 190 Former Indoor Storage Room	This location does not have a direct stormwater discharge, but the curb inlets and sheet flow would eventually discharge to an unnamed tributary that flows into Accotink Bay.	Accotink Bay	Indirect
L03	Former Asphalt Storage Pad near Building 2596	This area would drain to stormwater swales, to an unnamed tributary, to the wetlands in Jackson Miles Abbott Wetland Refuge, to Mulligan Pond, to Dogue Creek, to the Potomac River.	Dogue Creek	Indirect
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	This area would drain to drainage swales to an unnamed tributary to the Accotink Creek and to Accotink Bay.	Accotink Creek	Indirect
L47	Former Concrete Pad Transformer Storage Area	This location is on the top of a hill and drains to stormwater swales, to an unnamed tributary that drains to Gunston Cove.	Gunston Cove	Indirect
N13	Building 1490 Hazardous Material Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Indirect
Building 1495	Building 1495 Outdoor Transformer Storage Area	This area would drain to drainage swales to unnamed tributary to wetlands to Accotink Creek.	Accotink Creek	Direct

Site Conclusions

For each site, a table is shown that highlights the characteristics of the site, if any, that support a conclusion of no further action (NFA) required for the site for the PCB TMDL. Characteristics highlighted in green are considered strongly supportive of NFA and characteristics highlight in orange are considered less supportive than green, but still supportive of NFA.

A23: Although site A23 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU has been recommended for no further action. With regard to the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of exposed PCBs and created a barrier for PCB exposure by adding clean fill to areas that were excavated. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the partially wooded nature of the site would reduce potential for potentially contaminated sediments to travel.

Site	A23
Description	Former Coal Storage Area
Was there a reportable PCB release and when?	Yes, reported 1979
Has the site undergone remediation?	Yes
Has the site undergone demolition?	No
Is the site now wooded?	Partially
Is the site still in use, but now serving a different purpose?	Still in use, same purpose
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No

Conclusion: No Further Action

Weight of Evidence: Extensive remediation, sampling confirming PCBs are below regulatory limits, recommended for NFA as a SWMU and partially wooded.

A24: Although site A24 is the site of a PCB release, it has undergone extensive remediation. Confirmation soil samples indicated that any remaining PCB levels were below regulatory limits (Sample Data provided in Appendix A). As such, the site as a SWMU has been recommended for no further action. With regard to the PCB TMDL, in the past PCBs were spilled and exposed to precipitation. However, the extensive remediation that took place at the site removed the bulk of the exposed PCBs and protected against future exposure by placing clean fill in areas that were excavated. It is unlikely that any residual remaining PCBs present at the site would discharge to surface waters. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for potentially contaminated sediments to travel.

Site	A24
Description	Former DPDO Storage Area
Was there a reportable PCB release and when?	Yes, reported 1979
Has the site undergone remediation?	Yes
Has the site undergone demolition?	No
Is the site now wooded?	Yes
Is the site still in use, but now serving a different purpose?	No
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No

Conclusion: No Further Action

Weight of Evidence: Extensive remediation, sampling confirming PCBs are below regulatory limits, recommended for NFA as a SWMU and fully wooded.

B03: Site B03 was a site used for PCB storage. No PCB releases were reported to have occurred at B03. The storage building has been demolished and the area remediated. The site has achieved regulatory closure and the closure report documents the absence of PCBs at the site.

Site	B03
Description	Former BLDG632 Hazardous Waste Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition?	Yes
Is the site now wooded?	Yes
Is the site still in use, but now serving a different purpose?	No
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	Yes - 1997
Has the site been recommended for closure or No Further Action in past evaluations?	Closed
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Unsure

Conclusion: No Further Action

Weight of Evidence: PCB items kept indoors not exposed to precipitation, storage building demolished and site remediated, sampling confirms absence of PCBs, and regulatory closure achieved.

B04: Site B04 was a site used for PCB storage. No PCB releases were reported to have occurred at B03. The storage building has been demolished and the area remediated. The site has achieved regulatory closure and the closure report documents the absence of PCBs at the site.

Site	B04
Description	Former BLDG633 Hazardous Waste Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Yes
Has the site undergone demolition?	Yes
Is the site now wooded?	Yes
Is the site still in use, but now serving a different purpose?	No
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	Yes - 1997
Has the site been recommended for closure or No Further Action in past evaluations?	Closed
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Unsure

Conclusion: No Further Action

Weight of Evidence: PCB items kept indoors not exposed to precipitation, storage building demolished and site remediated, sampling confirms absence of PCBs, and regulatory closure achieved.

B09: Site B09 was a transformer storage area formerly located at Building 1430. While transformers were stored indoors and outdoors at this site, secondary containment was present. Building 1430 no longer exists and the area where the building once stood is now used as a storage area for trailers and large generators. Soil samples and wipe sample confirmed the absence of any PCBs at the site.

Site	B09
Description	Former Building 1430 Transformer Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Unsure
Has the site undergone demolition?	Yes
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	Yes
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Yes
Were PCBs stored indoors or outdoors?	Indoor/Outdoor
Was secondary containment present at storage sites?	Yes

Conclusion: No Further Action
Weight of Evidence: Secondary containment was present, storage building demolished, sampling confirms absence of PCBs, and recommended for NFA as a SWMU.

B10: B10 was an indoor storage area that was noted to have stored PCB containing equipment. Specifics of what was stored there and for how long are unknown. There were never any reported releases at this site, nor was staining suggesting leaks ever reported. The storage room also had secondary containment. B10 as a SWMU achieved regulatory closure in 1999.

Site	B10
Description	Building 190 Former Indoor Storage Room
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition?	No
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	Yes
Was PCB soil data collected at the site?	No
Has the site been closed through a regulatory agency and when?	Yes - 1999
Has the site been recommended for closure or No Further Action in past evaluations?	Closed
Were PCBs stored indoors or outdoors?	Indoor
Was secondary containment present at storage sites?	Yes

Conclusion: No Further Action

Weight of Evidence: Any PCB containing equipment was stored indoors and not exposed to precipitation, secondary containment was present, and regulatory closure achieved for SWMU site.

L03: Site L03 was never an official storage area. Transformers were reported being located at the site and fluid staining the asphalt was also noted. However, no known sampling occurred at the site and there is no documentation of PCB contamination being present. Additionally, the area that would have once been the asphalt pad has been demolished and redeveloped as part of a parking lot. Given the lack of evidence of the site being an environmental concern, the site was recommended for NFA as a SWMU.

Site	L03
Description	Former Asphalt Storage Pad near Building 2596
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	None recorded
Has the site undergone demolition?	Yes
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	Yes
Was PCB soil data collected at the site?	No
Has the site been closed through a regulatory agency and when?	Unsure
Has the site been recommended for closure or No Further Action in past evaluations?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No

Conclusion: No Further Action

Weight of Evidence: PCB contamination never confirmed at the site, the pad and old building have been demolished and the area entirely redeveloped, and recommended for NFA as a SWMU.

L04: Site L04 was a concrete pad that housed actively used transformers. While reports indicated leaking fluid was visible, soil samples collected later confirmed the absence of PCBs at the site. There is no longer evidence of the transformer area and the site has been redeveloped as a picnic and barbeque area.

Site	L04
Description	Hangar 3126 Former outdoor concrete pad transformer storage area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition?	Yes
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	Yes
Was PCB soil data collected at the site?	Yes
Has the site been closed through a regulatory agency and when?	Unsure
Has the site been recommended for closure or No Further Action in past evaluations?	Yes
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	No

Conclusion: No Further Action

Weight of Evidence: Transformer area demolished and redeveloped, sampling confirmed absence of PCBs, and recommended for NFA as a SWMU.

L47: Site L47 was a concrete pad that was used to store transformers until they could be tested for PCBs and then disposed of properly or moved to another storage area. The pad was located outside and transformers were exposed to precipitation. However, there were no reportable releases and even though stains on the pad were reported it is unknown whether the staining liquid contained PCBs or not since the transformers at the site were being held for PCB testing. The pad has since been removed and the site is not wooded with thick brush. PCBs are carried primarily by sediment and the thickly wooded nature of the site would reduce potential for potentially contaminated sediments to travel. Additionally, there are no stormwater drainage features nearby suggesting potential residual PCB contamination would not have a likely pathway to drain to surface waters.

Site	L47
Description	Former Concrete Pad Transformer Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Suspected, but documentation missing
Has the site undergone demolition?	Yes
Is the site now wooded?	Yes
Is the site still in use, but now serving a different purpose?	No
Was PCB soil data collected at the site?	Suspected, but documentation missing
Has the site been closed through a regulatory agency and when?	No
Has the site been recommended for closure or No Further Action in past evaluations?	Unsure
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	None noted

Conclusion: No Further Action

Weight of Evidence: No reportable releases, transformer pad area demolished and now fully wooded, and no likely surface water drainage pathway.

N13: Site N13 was an indoor storage area for hazardous materials including PCB containing materials.

Site	N13
Description	Building 1490 Hazardous Material Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	Unknown
Has the site undergone demolition?	No
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	Yes
Was PCB soil data collected at the site?	Unknown
Has the site been closed through a regulatory agency and when?	Yes, July 6, 2012
Has the site been recommended for closure or No Further Action in past evaluations?	No Further Action
Were PCBs stored indoors or outdoors?	Indoors
Was secondary containment present at storage sites?	Yes

Conclusion: No Further Action

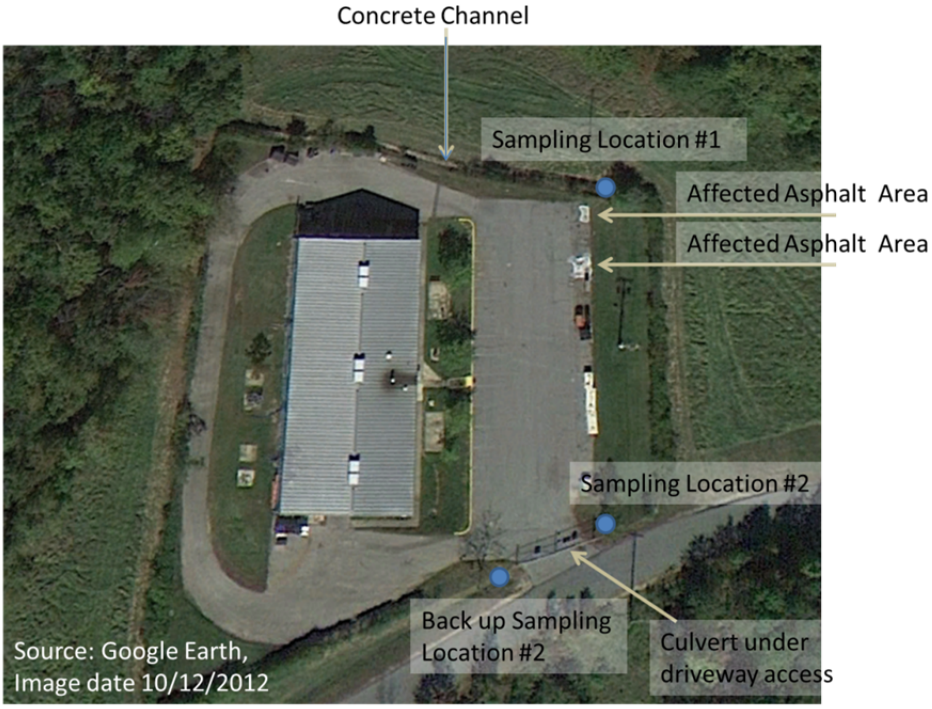
Weight of Evidence: No reportable releases, PCB materials stored indoor and not exposed to precipitation, site is still in use now serving a different purpose, secondary-containment was in place and the site has achieved regulatory closure..

Building 1495: The Building 1495 site consists of the northeast corner of the parking lot for building 1495. PCB containing transformers were stored in the area and fluid was reported as leaking from the transformers during 2012. Currently stains are visible on the asphalt at the site and containment materials have been placed around the affected areas. The site has not yet been remediated. Additionally, there are stormwater drainage features nearby that provide a likely pathway for potentially PCB contaminated stormwater to discharge to surface waters. Since PCBs are currently present at the site and there is a likely pathway this site requires additional investigation.

Site	Building 1495
Description	Building 1495 Outdoor Transformer Storage Area
Was there a reportable PCB release and when?	No
Has the site undergone remediation?	No
Has the site undergone demolition?	No
Is the site now wooded?	No
Is the site still in use, but now serving a different purpose?	No
Was PCB data collected at the site?	Unsure
Has the site been closed through a regulatory agency and when?	No
Has the site been recommended for closure or No Further Action in past evaluations?	No
Were PCBs stored indoors or outdoors?	Outdoor
Was secondary containment present at storage sites?	Partially

Conclusion: Characterization stormwater sampling required

Recommended Sampling Locations: Two stormwater sampling locations are recommended at the Building 1495 site. The first location (#1) is north of the affected asphalt area at the beginning of the concrete channel that runs along the northern border of the property. Location #1 is located outside of the fenced area. The second location (#2) is south of the affected asphalt area just before the entrance to the culvert running under the access driveway to the parking lot. A backup sampling location at the exit of the culvert was also designated for location #2 since the culvert entrance is located behind the access fence and may results in access problem. The exit of the culvert is outside of the fenced area. The recommended sampling locations are shown on the aerial view of the site below.



Site	Description	Were PCBs confirmed present at the site in the past and how?	Was there ever observable staining likely or confirmed from PCB fluids?	Was there a reportable PCB release and when?	Has the site undergone remediation?	Has the site undergone demolition?	Is the site now wooded?	Is the site still in use, but now serving a different purpose?
A23	Former Coal Storage Area	Yes, PCB confirmed by sampling following transformer fluid release.	Yes, confirmed	Yes, reported 1979	Yes	No	Partially	Still in use, same purpose
A24	Former DPDO Storage Area	Yes, PCB confirmed by sampling following transformer fluid release.	Yes, confirmed	Yes, reported 1979	Yes	No	Yes	No
B03	Former BLDG632 Hazardous Waste Storage Area	Yes, 1991 site visit noted "Caution PCB Storage Area" sign on door to building.	Yes, likely	No	Yes	Yes	Yes	No
B04	Former BLDG633 Hazardous Waste Storage Area	Yes, 1991 site visit noted "Caution PCB Storage Area" sign on door to building.	No	No	Yes	Yes	Yes	No
B09	Former Building 1430 Transformer Storage Area	Yes, 1988 RCRA facility assessment described site as storage area for PCB containing materials.	Yes, confirmed	No	Unsure	Yes	No	Yes
B10	Building 190 Former Indoor Storage Room	Yes, 1988 RCRA facility assessment described site as storage area for PCB containing materials.	No	No	No	No	No	Yes
L03	Former Asphalt Storage Pad near Building 2596	No, the 1988 RCRA facility assessment noted 2 transformers stored on the site and the 1992 SWMU study noted the facility manager recollected the transformers had PCB concentrations around 50ppm. No confirmation of this.	Yes, likely	No	None recorded	Yes	No	Yes
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	Yes, 1997 tests indicated 2 of 3 transformers tested contained PCBs, but at levels below regulation limits.	Yes, confirmed	No	No	Yes	No	Yes
L47	Former Concrete Pad Transformer Storage Area	Yes, 1988 RCRA facility assessment described site as storage area for transformers to be tested for PCBs.	Yes, confirmed	No	Suspected, but documentation missing	Yes	Yes	No
N13	Building 1490 Hazardous Material Storage Area	Yes, SWMU table notes, PCB transformers were stored here.	Yes, likely	No	Unknown	No	No	Yes
Building 1495	Building 1495 Outdoor Transformer Storage Area	Yes, soil samples from 2012 indicate presence of PCB in leaking PCB fluid.	Yes	No	No	No	No	No

Site	Description	Was PCB soil data collected at the site?	Has the site been closed through a regulatory agency and when?	Has the site been recommended for closure or No Further Action in past evaluations?	Were PCBs stored indoors or outdoors?	Was the site a formal storage area?	Was secondary containment present at storage sites?	Were transformers noted as being present at some point or established as the source of PCBs at the site?
A23	Former Coal Storage Area	Yes	No	Yes	Outdoor	Yes	No	Source
A24	Former DPDO Storage Area	Yes	No	Yes	Outdoor	Yes	No	Source
B03	Former BLDG632 Hazardous Waste Storage Area	Yes	Yes - 1997	Closed	Indoor	Yes	Unsure	No - documents specify only PCB containing wastes
B04	Former BLDG633 Hazardous Waste Storage Area	Yes	Yes - 1997	Closed	Indoor	Yes	Unsure	No - documents specify only PCB containing wastes
B09	Former Building 1430 Transformer Storage Area	Yes	No	Yes	Indoor/Outdoor	Yes	Yes	Present
B10	Building 190 Former Indoor Storage Room	No	Yes - 1999	Closed	Indoor	Yes	yes	Suggested in SWMU Action Plan, but not certain
L03	Former Asphalt Storage Pad near Building 2596	No	Unsure	Yes	Outdoor	No	No	Present
L04	Hangar 3126 Former outdoor concrete pad transformer storage area	Yes	Unsure	Yes	Outdoor	Yes	No	Source
L47	Former Concrete Pad Transformer Storage Area	Likely	No	No	Outdoor	Yes	None noted	Present
N13	Building 1490 Hazardous Material Storage Area	Unknown	Yes- July 6, 2012	No Further Action	Indoors	Yes	Yes	Present
Building 1495	Building 1495 Outdoor Transformer Storage Area	Unsure	No	No	Outdoor	No	Partially	Source

APPENDIX C

Closure Documents and Correspondence

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY ENGINEER CENTER AND FORT BELVOIR
FORT BELVOIR, VIRGINIA 22060

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ATZA-FE

30 January 1981

Mr. Francis J. Mulhern
Federal Facilities Compliance Coordinator
U.S. Environmental Protection Agency
6th and Walnut Streets
Philadelphia PA 19106

Dear Mr. Mulhern:

In response to your letter on 4 August 1980, Fort Belvoir has reviewed the procedures taken for the clean up of the two spill areas in question as well as resampled portions of the spill sites to determine what further steps in our opinion would be necessary to satisfy the EPA regulatory requirements of 40 CFR, Section 761.10.

The following discussion specifically sets forth what action will be taken to comply with EPA requirements, the schedule for attaining full compliance, and the results of all sampling taken since the issuance of the installation's After Action Report.

1. Old Coal Yard Facility: Sampling was conducted on 1 August 1980 and again on 10 October 1980 to further assess the effectiveness of the installation's clean up efforts. The results of the sampling program are enclosed for your review at Figure 1. The results indicate that approximately 2700 square feet of concrete surface contains PCB residual higher than 50 ppm and approximately 120 linear feet of the adjacent drainage channel. As a result of this latest sampling program which contradicted the Army's expected stabilization of the PCB within the concrete structure, the installation has revised the approach to solving the clean up problem at the old coal yard.

The installation proposes to remove the 2700 square feet of concrete in approximately 4 X 6 foot slabs and have them loaded on to specially protected trucks for transportation to a Chemical Waste Landfill approved by the EPA Regional Administrator for disposal of PCB debris. The excess rubble created during the cutting of the concrete as well as the contaminated sediments in the adjacent drainage ditch will be

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removed and transported to the same location. See the attached drawing, Figure 2. Soil samples will be taken in the area where the concrete is removed. If the test results show a PCB concentration less than 50 ppm, the entire area will be filled with clean earth material to a depth of not less than two feet and then revegetated.

2. Defense Property Disposal Office yard (DPDO): Further tests in the area were conducted during the period of 12 - 14 May 1980. Soil and sediment samples were collected throughout the DPDO yard and in the drainage areas downstream of the yard to the Accotink Bay. Sample collection in the DPDO yard was conducted using sections as shown in Figure 3. Within each section, 10 to 16 discrete surface soil samples were collected and composited. Analyses results of each of these composited samples is shown in each of the sections on Figure 3. Discrete sample sites were chosen randomly so that the resulting composited sample was representative of the section. Sampling was not conducted on any concrete pads or within or under any material stored on the DPDO yard. Analyses results of sediment in the downstream drainage is shown in Figure 4. Drainage area sample sites were chosen along stretches where sediment naturally deposited in the stream beds.

To clean up the contaminated areas and to prevent further migration of PCB into the adjacent stream beds, Fort Belvoir proposes to contain the PCB contaminated soil on site and to further define the areas of contamination within the DPDO yard. Specifically, Fort Belvoir proposes to build an earth berm along the fence line in the northwest corner of the yard and to construct a sediment basin to trap and remove any contaminated solids before the storm water discharges from the site. The sediments collected in the basin will be disposed of in a Chemical Waste Landfill approved by the EPA Regional Administrator for disposal of PCB debris.

After the containment system is in place, the DPDO operations in the yard will be moved outside sections M, O, P, R, and T identified in Figure 5. These sections will be divided approximately in quarters and additional soil samples will be taken as indicated on Figure 6. In each subsection five soil samples will be taken. These samples will not be composited. Sampling will also include all concrete pads and other storage structures within the identified areas. Those subsections in which a majority of the samples are below the PCB concentration of 50 ppm will have dirt removed to a depth of only three inches in the immediate area of that particular sample location where the PCB concentration was above 50 ppm. Immediate area in this case is defined as a 100 square foot area centered on the sample point. In those subsections where a majority of the samples are above 50 ppm, the installation will retain the option of cleaning the entire area or subdividing the area again and resampling so as to reduce the size of the clean up area to

the maximum extent possible. All contaminated dirt removed will be transported to a Chemical Waste Landfill approved by the EPA Regional Administrator for disposal of PCB debris.

Once the contaminated soil is removed, the entire site (sections A through Q) will be filled with clean earth material to a depth of not less than two feet and then revegetated. The sediment basin will be removed once the fill material is stabilized in that area.

The clean up of contaminated sediments in the intermittent stream north of the DPDO yard will also progress concurrently with the clean up of the DPDO yard. The upper layer of silt deposited in the stream bed will be picked up as a precaution to prevent any PCB material from entering the Accotink Bay.

The schedule for attaining full compliance at both sites will be greatly dependent upon the magnitude of the amount of material which will be required to be removed after further chemical testing is conducted. The following is a preliminary sequential listing of actions to be taken for attaining full compliance. Actions on this list will commence once approval is received from EPA that our clean up plan is acceptable and after full funding is received from this installation's higher headquarters for the cleanup and disposal effort. One exception to this policy is the construction of the diversion ditch and sediment basin in the DPDO yard. Once approval is received from EPA, these structures will be in place within 30 days.

Proposed Sequence of Action for Cleanup of DPDO Yard and Old Coal Yard Facilities.

a. First month:

(1) DPDO yard operations are moved out of the contaminated areas.

(2) Soil samples are collected at the DPDO yard.

(3) Contract bids are advertized for the clean up and disposal of contaminated material at the old coal yard and the DPDO yard.

b. Second month:

(1) Analysis of the soil samples continuing. The sample results are used to further define contaminated areas.

(2) Contract awarded and clean up work begun at the old coal yard and DPDO yard.

c. Third month:

(1) Clean up work finished at old coal yard. Soil tests are taken to ascertain effectiveness of clean up effort.

(2) Soil testing on DPDO yard continuing. Contaminated areas identified are being containerized ready for disposal.

d. Fourth month:

(1) Soil test results are reported for old coal yard facility. Backfilling the area with clean earth to commence.

(2) Continue to pick up and make ready for disposal contaminated areas within DPDO yard.

e. Sixth month:

(1) Backfilling at old coal yard is completed and the area stabilized with a vegetated cover.

(2) Clean up of the contaminated areas within the DPDO yard completed. Cleanup of the adjacent stream bed begun.

f. Seventh month: Clean up of the stream bed adjacent to DPDO yard completed. Backfilling over the entire DPDO yard started.

g. Ninth month: Filling operation at DPDO yard completed and the area stabilized with vegetation. The sediment basin on northwest side of the yard is removed.

h. Tenth month: Total clean up of both sites expected to be completed.

It is requested that due to the complexities of the issues involved and the potential costs for clean up of the PCB, a meeting be convened at Fort Belvoir attended by representatives from EPA, and the U. S. Army to discuss fully the Army's proposed approach to be taken to resolve the PCB problem. Mr. Patrick McLaughlin, the Environmental Officer, this headquarters, at (703)664-6251 will be the point of contact for any further information you require to arrange a date and time for the meeting.

LA-FE
Mr. Francis J. Mulhern

30 January 1981

Also, as requested in your letter of 4 August 1980, included as enclosure 3 is a listing of PCB items and liquid PCBs used and stored on the installation.

Sincerely,

JOHN E. MOORE
Colonel, CE
Director of Facilities Engineering

3 Encl
1. Results of Sampling Prog
2. Drawing
3. List of PCB Items and Liquid PCBs Used and Stored on the Installation

CF
HQ, TRADOC

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

MAY 8 1981

In Reply Refer To: 3EN31

Colonel John E. Moore, C.E.
Director of Facilities Engineering
ATZA-FE
Headquarters, U.S. Army Engineer Center
and Fort Belvoir
Fort Belvoir, Virginia 22060

Dear Colonel Moore:

We have completed our review of your proposed cleanup program for your DPDO yard and old coal yard facilities which you submitted to us on January 30, 1981.

We concur with your plan of action and request that you implement cleanup activities as soon as possible after receipt of this letter. To facilitate our review of your cleanup activities as they progress, you must submit monthly progress reports at the end of each month to Francis J. Mulhern, Federal Facilities Compliance Officer, at the above address.

If you have any questions, please contact Mr. Mulhern at (215) 597-4799. Thank you for your cooperation in this matter.

Sincerely yours,

Thomas C. Voltaggio
Acting Director, Enforcement Division

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY ENGINEER CENTER AND FORT BELVOIR
FORT BELVOIR, VIRGINIA 22060

December 21, 1983

REPLY TO
ATTENTION OF

Environmental and Natural
Resources Office

Mr. Francis J. Mulhern
Federal Facilities Compliance Officer
U.S. Environmental Protection Agency
6th and Walnut Streets
Philadelphia, PA 19106

Dear Mr. Mulhern:

This installation is pleased to inform you that the clean up of the two PCB spill sites at Fort Belvoir is completed. The clean up progressed as stated in our letter to you on January 30, 1981 and agreed to by your agency on May 8, 1981 (copies are enclosed for your information). The clean up operation started on October 15, 1982 and the last PCB contaminated soil was removed by June 8, 1983. The covering of the clean up sites with two feet of clean earth progressed as each section of the spill site was cleaned to levels below 50 ppm of PCB. Consequently, the majority of the spill site was covered before February 1983. The earth cover has been stabilized with a stand of grass, as indicated by the attached photograph, and the area was planted with over 5,000 pine seedlings in the first week of December 1983.

The protocol used for the sampling, testing, and removal of the PCB material was as stated in our letter of January 30, 1981. During the course of this clean up operation, 1.7 million pounds (43 trailer loads) of PCB contaminated earth and concrete were removed and transported to S.C.A. in Model City, New York. In the DPDO yard within sections T2, T3, O1, and O4, most areas were excavated to a depth of four feet. PCB sampling and analysis was conducted by private laboratories under contract with the government. Detailed records have been maintained as to the exact sample location and results. Over 511 samples were analyzed during this clean up operation.

In consideration of the above information, it is this installation's opinion that the two past PCB spill sites have been cleaned to a level in accordance with the Clean Water Act of 1977 (PL 95-217) and the Toxic Substances Control Act (PL 94-469). Therefore, it is requested that the installation be formally released of any further clean up responsibility associated with the two PCB spill sites.

Should you require any further information, Mr. Patrick M. McLaughlin, the Fort Belvoir Environmental and Natural Resource Officer, [(703)664-6251] is availalbe to assist you.

Sincerely,

Arthur S. Brown
Lieutenant Colonel, Corps of Engineers
Director of Engineering and Housing

Enclosures

CLOSURE APPROVAL
5 @ 600 AREA

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

George Allen
Governor

Becky Norton Dunlop
Secretary of Natural Resources

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Thomas L. Hopkins
Director

(804) 698-4000
1-800-592-5482

September 3, 1997

Lt. Col. Stacey K. Hirata
Directorate of Public Works
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: Buildings 625, 627, 632, 633, and 634
EPA ID# VA7213720082

Dear Lt. Col. Hirata:

On August 15, 1997, the closure units associated with the above-referenced buildings at your facility were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plan. The Department concurs with the conclusion of the closure reports, dated July 1996, that clean closure of Buildings 625, 627, 632, 633, and 634 at your facility has been achieved. Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128.

Sincerely,

Leslie A. Romanchik
for Thomas L. Hopkins

c: Khoa Nguyen - DEQ
Sanjay Thirunagari - DEQ
Debbie Miller - DEQ
Claire Ballard - DEQ

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To Jeff Moran	From Khoa Nguyen
Co. Dewberry & Davis	Co. VDEQ
Dept.	Phone #
Fax # 703-849-0103	Fax # 804-6984234

Jon Ely - DEQ, NVRO
Robert Greaves - EPA Region III
Central Hazardous Waste File

DEPARTMENT OF THE ARMY
U.S. ARMY GARRISON, FORT BELVOIR
DIRECTORATE OF PUBLIC WORKS
9430 JACKSON LOOP, SUITE 107
FORT BELVOIR, VIRGINIA 22060-5130

REPLY TO ATTENTION OF

ANFB-PW 200-1

12 FEB 1998

MEMORANDUM FOR Department of the Army, Communications-Electronics Research, Development & Engineering Center, ATTN: AMSEL-RD-NV-OPS-FE-SHE (Ronald Petrie) 10221 Burbeck Road, Fort Belvoir, VA 22060

SUBJECT: Electrical Transformers at Davison Airfield

1. Reference: AMSEL-RD-NV-OPS-FEM-SHE Memorandum, ND; Subject: PCB Electrical Transformers at Davison Airfield

2. My environmental staff has reviewed your letter concerning the electrical transformers at Davison Airfield. The soil sample results from the soil adjacent to the transformers mentioned above does not indicate the presence of PCBs. Two of the three transformers which are off-line appear to be leaking and a work order has been placed to have the transformers tested prior to turn in to the environmental office for disposal. Soil contamination will be cleaned up when the disposal process is complete.

3. To avoid future misinterpretation of laboratory results, please ensure that any environmental testing is performed by the installation environmental office in order that stringent Quality Assurance/Quality Control procedures are maintained.

4. Point of contact for this action is Mr. Patrick M. McLaughlin at 806-4007.

STACEY K. HIRATA
LTC, EN
Director of Installation Support

Soil Closure Approval
@ 19 sites

COMMONWEALTH of VIRGINIA

James S. Gilmore, III
Governor

John Paul Woodley, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 10009, Richmond, Virginia 23240
Fax (804) 698-4500 TDD (804) 698-4021
http://www.deq.state.va.us

Dennis H. Treacy
Director

(804) 698-4000
1-800-592-5482

May 21, 1999

Lt. Col. Stacey K. Hirata
Director of Installation Support
U.S. Army Garrison, Fort Belvoir
9430 Jackson Loop, Suite 107
Fort Belvoir, Virginia 22060-5130

Re: U.S. Army Garrison, Fort Belvoir
EPA ID# VA7213720082 and VA1210000906

Dear Lt. Col. Hirata:

On May 28, 1998, November 9, 1998, and May 3, 1999, several closure units at your facility, referenced above, were inspected by Khoa Nguyen, a representative of the Virginia Department of Environmental Quality (Department). The inspection and required certifications show that closure had been performed in accordance with the protocol specified in the approved closure plans.

The Department has also completed a review of the following closure submittals:

- Closure reports for Buildings 363 and 714, dated December 1996;
- Closure reports for Buildings 308, 322, 1957, 2021, and the Fire Training Area at Davison Army Airfield, dated November 1997;
- Closure reports for the Marina and Buildings 357A, 707, 1949/1950, dated December 1997;
- Closure reports for Buildings 181 and 324, dated January 1998;
- Closure reports for Buildings 190, 677, 1116, 1146, 2034, and 2585, dated February 1998;

- Supplementaries to the closure reports transmitted by Fort Belvoir letters dated August 4, 1998, November 20, 1998, February 24, 1999, and May 3, 1999.

The available information and the closure certifications indicate that the performance standards for clean closure have been achieved for soils at Buildings 181, 190, 308, 322, 324, 357A, 363, 677, 707, 714, 1116, 1146, 1949/1950, 1957, 2021, 2034, 2585, the Marina, and Davison Army Airfield.

Please note, however, that the U.S. Environmental Protection Agency retains the authority to address possible corrective action of continuing releases pursuant to the Hazardous and Solid Waste Amendments of 1984.

If you have any questions regarding this letter, please contact Khoa Nguyen of my staff at (804) 698-4128. Thank you for your cooperation during the closure process.

Very truly yours,

Leslie A. Romanchik
for Dennis H. Treacy

c: Khoa Nguyen - VDEQ
Sanjay Thirunagari - VDEQ
Charlotte Carroll -VDEQ
Jon Terry - VDEQ, NVRO
Claire Ballard - VDEQ
Melissa Porterfield - VDEQ
Robert Greaves - EPA Region III
Central Hazardous Waste File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

July 6, 2012

Mr. Patrick McLaughlin
US Army Garrison, Fort Belvoir
Directorate of Public and Logistics
Environmental and Natural Resources Division
9430 Jackson Loop, Suite 100
Fort Belvoir, VA 22060-5116

Subject: EPA Approval of: **Administrative Closure of 90 SWMUs Report, Main Post**, US Army Garrison, Fort Belvoir, VA

Dear Mr. McLaughlin:

The US Environmental Protection Agency (EPA) reviewed and approves the Subject Report, dated October 2011 for the Administrative Closure of 90 Solid Waste Management Units (SWMUs). EPA's approval also includes the two SWMUs that were added to the Report later, SWMUs B-10 and F-05.

The reasons for eliminating listed SWMUs from further investigation includes: absence of field evidence and/or record of contaminant releases, investigation and closure under Virginia or other regulations, and SWMUs no longer existing among other reasons.

If you have any questions, feel free to contact me at 215-814-3434.

Sincerely,

Barbara Smith, Project Manager
Office of Remediation

Email copy: Amy Martin, Ft. Belvoir, MP
Durwood Willis, VADEQ

Administrative Closure Strategy
Solid Waste Management Units
Main Post
Fort Belvoir, Virginia

INTRODUCTION

Currently Fort Belvoir manages 204 Solid Waste Management Units (SWMUs) under a Corrective Action Program for SWMUs on Fort Belvoir's Main Post under a Resource Conservation and Recovery Act (RCRA) Part B, Permit# (EPA ID VA7213720082).

In 2006, Tetra Tech, Inc. was tasked by Fort Belvoir Directorate of Public Works, Environmental and Natural Resources Division (DPW-ENRD) to categorize each SWMU into one of the four corrective action classes based on the 2005 Visual Site Inspections (VSIs). All 204 SWMUs have been assigned one of four status categories based on the type action to be taken at each site. These categories include; No Further Action (NFA), Administrative Closure (AC), Confirmatory Sampling (CS), and Site Investigation (SI).

In 2009, Tetra Tech, Inc drafted the first volume of Administrative Closure Reports that included 15 separate SWMU sites, which was sent to and reviewed by U.S. EPA Region III Regulators for closure. The 15 sites all received closure between 2009 and 2010 and were removed from Fort Belvoir's RCRA Part B Permit.

During a meeting on December 7th, 2010 between representatives from Fort Belvoir DPW-ENRD, the U.S. Army Environmental Command (AEC), U.S. EPA Region III, and Tetra Tech agreed upon the drafting of a document that would briefly describe each of the 89 SWMUs that were deemed acceptable to be closed through the administrative closure process. Additionally, a brief justification for closure was included for each of the SWMU sites to support why each was categorized into one of six administrative closure categories listed below.

This second volume of Administrative Closures includes the 89 SWMU sites located on the Main Post of U.S. Army Garrison Fort Belvoir, VA that have been recommended to be closed through this administrative closure process. Below are the six administrative closure categories that each of the 89 SWMU sites fall into.

Administrative Closure (AC): SWMU sites that require action from Fort Belvoir and/or the regulators, however, all action is limited to report preparation, review, and approval for NFA. Six scenarios of site status belong in this recommendation category, as described below:

AC 1: Site investigation and corrective action are complete, and a closure report was prepared but not forwarded or approved by regulatory agency.

AC 2: SWMU site no longer exists due to significant site disturbance as a result of re-grading and construction activity.

AC 3: A site component, such as historical infrastructure, needs to be removed from the SWMU site, but no sampling is required.

AC 4: The SWMU is being managed or addressed under a separate program, such as Fort Belvoir's Petroleum Management Program (PMP), Military Munitions Response Program (MMRP), Virginia Pollution Discharge Elimination System (VPDES), National Pollution Discharge Elimination System (NPDES), or Clean Water Act (CWA).

AC 5: The site is an active permitted facility.

AC 6: Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.

SWMU Number	SWMU Title	Site Description	Admin Closure Category	Justification
N-13	**Building 1490 Hazardous Materials Storage**	SWMU N-13, Building 1490 was first described in the 1992 CH2M Hill SWMU Study as a hazardous material storage facility that has been in use since 1984. According to the 2005 VSI, operations at this unit include segregating, labeling, and storing waste materials prior to being transported off the Installation by contractors to be properly disposed. Before 1984 the building was used as a pesticide mixing area (SWMUB-16) and some floor staining had been documented. In 1991 approximately 1 gallon of methyl alcohol and bromine was released and was contained by the secondary containment system. The spill was handled in accordance with the Installation's Spill Contingency Plan and was not considered a release into the environment since the spill occurred inside.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Building 1490 and the storage of hazardous materials within the structure are managed through Fort Belvoir's Permit for Hazardous Waste Storage. Although there is one report of a small amount of hazardous chemicals being released inside the building, the materials were addressed through the Installation's Spill Contingency Plan. The building has secondary containment structures in place and has no pathway for chemicals to be released into the environment.
N-14	**Building 1356 Oil/Water Separator**	SWMU N-14 was first described in the 1992 CH2M Hill SWMU Study as a concrete gravity oil/water separator measuring approximately 10 ft by 4 ft, with a metal grate as a cover. The unit received washwater containing detergent and storm water from an adjacent washrack (SWMU C-03). According to the 2005 VSI, the oil water separator and washrack had not been used since the 1980's and appeared to be plugged up with debris. Standing water that had an oily sheen was observed in the unit. There is no historical documentation or records indicating that any type of release to the surrounding environment occurred.	**AC 6:** Based on a review of historical documentation of this site, there is no evidence or indications that any type of release into environment has occurred at this site that would require further actions.	Historical records from SWMU N-14 indicate that there are no documented releases or spills related to this former oil/water separator. Additionally the wash rack has been inactive since the 1980s.