
NWS Yorktown – Cheatham Annex

Williamsburg, Virginia

USEPA Facility ID: VA3170024605

Basin: York

HUC: 02080107

Executive Summary

NWS (Naval Weapons Station) Yorktown – Cheatham Annex is a 639-ha (1,579-acre) federal facility near Williamsburg, Virginia. When it was commissioned in 1943, the facility's primary mission was receiving, storing, and packing materials for shipment to federal facilities on the East Coast and major distribution centers in Europe. The facility is currently used to store and ship naval supplies. The primary contaminants of concern at the Cheatham Annex site are metals, SVOCs (primarily PAHs), pesticides, and PCBs. Habitats of concern to NOAA are the surface waters and associated substrates of the York River and Queen and King Creeks, adjacent to the site. These areas provide habitat for many NOAA trust resources. The primary pathways for the migration of contaminants from the site to NOAA trust resources are surface water and sediment.

Site Background

NWS (Naval Weapons Station) Yorktown – Cheatham Annex (Cheatham Annex) is in York County, Virginia, east of Williamsburg. This 639-ha (1,579-acre) federal facility lies adjacent to the York River between Queen and King Creeks, approximately 24 km (15 mi) upstream of Chesapeake Bay (Figure 1) (USEPA 2000). During World War I, before the U.S. Navy became owner of the facility, the Cheatham Annex and several adjacent properties were occupied by the Penniman Shell Loading Plant (Penniman Plant), which was operated by DuPont (CH2M Hill and Baker Environmental Inc. 2002). The Penniman Plant was approximately 1,300 ha (3,300 acres) and included what are now the Cheatham Annex, National Colonial Park, and the Virginia fuel farm (ATSDR 2000) (Figure 2). The Penniman Plant operated for approximately one year, and was then used for demilitarization activities over several years following World War I. From approximately 1922 through 1942, the Cheatham Annex property was under private ownership and was used for farming or was left idle. In June 1943, the Cheatham Annex was commissioned as, and currently remains, a satellite unit of the Naval Supply Depot in Norfolk, Virginia, to receive, store, pack, and ship materials to federal facilities on the East Coast and to major distribution centers in Europe (USEPA 2000; VDEQ 2001).

An initial site assessment of the Cheatham Annex was completed in 1984. Twelve disposal sites and potentially contaminated areas were identified in this study (Figure 2), and four areas, Sites 1, 7, 9, and 11, were recommended for further study. In 1999, the U.S. Environmental Protection Agency (USEPA) conducted a site inspection (SI) of the area formerly occupied by the Penniman Plant. The SI identified five areas within the Cheatham Annex as potential sources of contamination, and three areas of concern (AOC), AOC 1, AOC 2, and the Penniman AOC, were recommended for further study. The Penniman AOC is comprised of five sub-areas in the vicinity of Penniman Lake (Figure 2), three of which were recommended for further investigation: the Ammonia Settling Pits, the Trinitrotoluene (TNT) Graining House Sump, and the TNT Catch Box Ruins. Two Penniman AOC sub-areas, the Waste Slag Material area and the 1918 Drum Storage area were not recommended

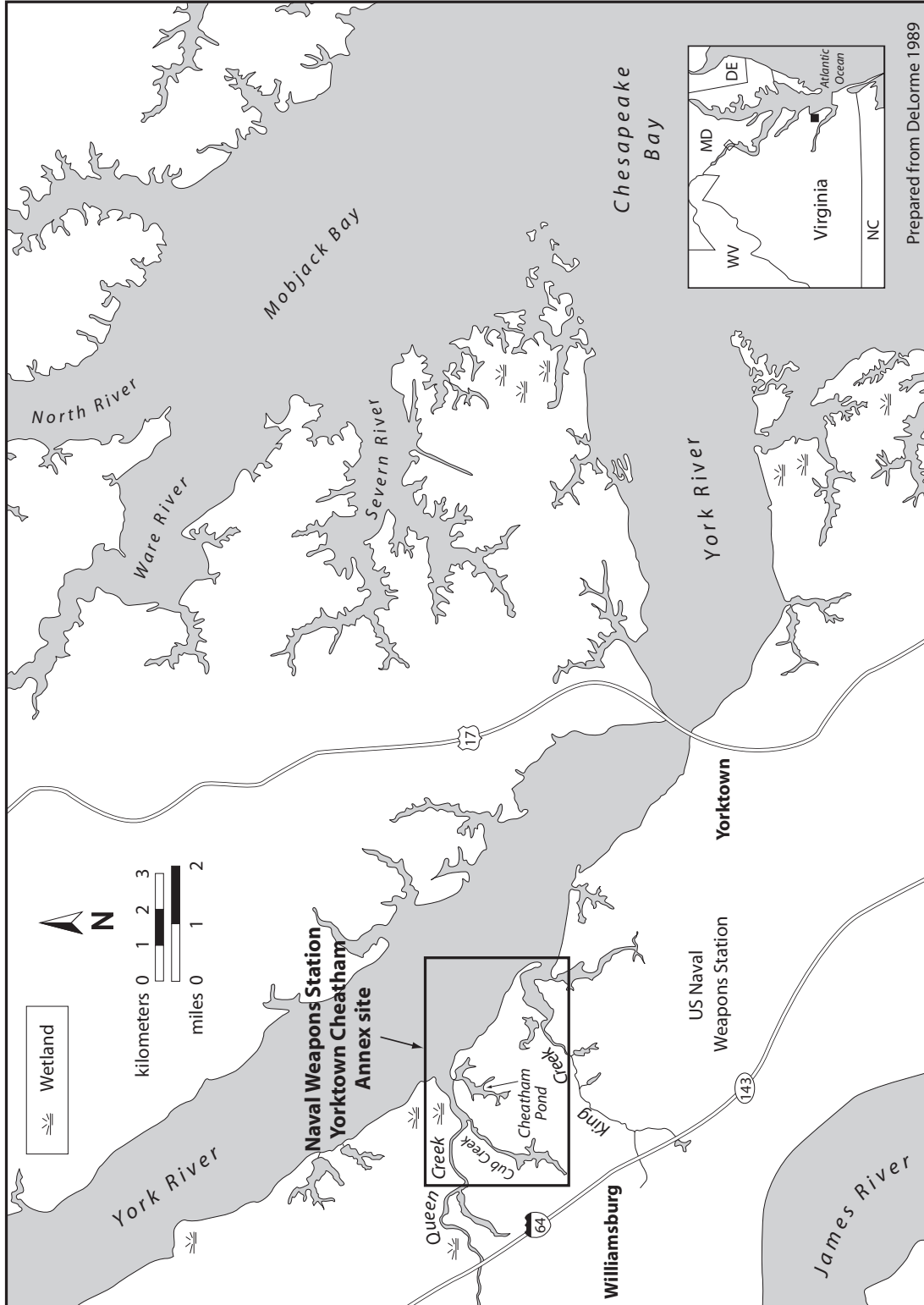
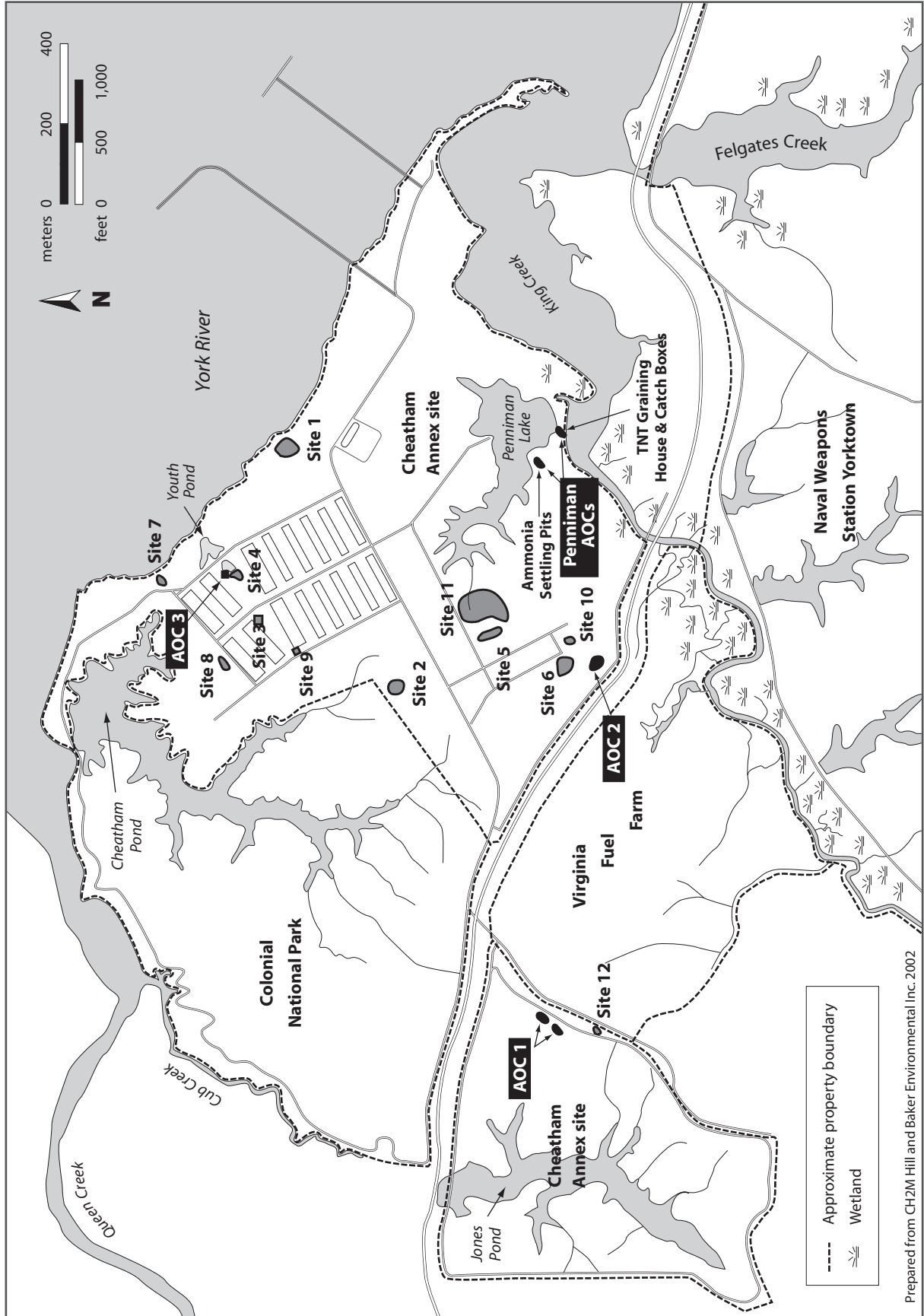


Figure 1. Location of the Naval Weapons Station Yorktown Cheatham Annex site, Williamsburg, Virginia.



Prepared from CH2M Hill and Baker Environmental Inc. 2002.

Figure 2. Detail of the Naval Weapons Station Yorktown Cheatham Annex site.

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for further investigation. The locations of these sub-areas could not be determined from the documents reviewed for this report. (CH2M Hill and Baker Environmental Inc. 2002). Table 1 provides a summary and brief description of the hazardous waste sites and AOCs that were identified during the investigations conducted at the Cheatham Annex site.

Site investigations indicate that the primary contaminants of concern are semivolatile organic compounds (SVOCs), primarily polynuclear aromatic hydrocarbons (PAHs), metals, pesticides, and polychlorinated biphenyls (PCBs). The primary pathways for the migration of contaminants from the site to NOAA trust resources are surface water and sediment. The Cheatham Annex site was placed on the National Priorities List December 1, 2000 (USEPA 2000).

Table 1. Summary descriptions of the sites and AOCs within the Naval Weapons Station Yorktown-Cheatham Annex site (CH2M Hill and Baker Environmental Inc. 2002).

Source Area	Period of Operation	Location	Description of Contamination
Site 1			
Landfill near Incinerator	1942-1981	Located along the York River.	Wastes burned and disposed of at this site included empty paint cans and paint thinner cans, cartons of ether and other unspecified drugs, railroad ties, tar paper, sawdust, rags, concrete, and lumber.
Site 2			
Contaminated Food Disposal Area	1970	Located in a grassy area in the woods approximately 530 m (1750 ft) east of the southern end of Cheatham Pond.	Frozen food was buried in a disposal pit after it was contaminated with ammonia from a leak in one of the cold storage rooms.
Site 3			
Submarine Dye Disposal Area	unknown	Located approximately 910 m (2975 ft) east of the middle section of Cheatham Pond.	Dye was stored in 55-gallon drums on pallets between the warehouses. The drums corroded, the dye was released into the ground and into the storm sewer system connected to the York River; the dye turned the river green.
Site 4			
Medical Supplies Disposal Area	1968 or 1969	Located approximately 640 m (2100 ft) northwest of Site 1.	Out-of-date medical supplies, possibly including syringes and empty IV bottles, and one-inch metal banding, were dumped down a bank and covered with soil.
Site 5			
Photographic Chemicals Disposal Area	1967 or 1968	Located west of Penniman Lake.	Outdated photographic chemicals were reportedly disposed of in a pit.
Site 6			
Spoiled Food Disposal Area	1970	Located approximately 370 m (1225 ft) south of Site 5.	Spoiled food from cold storage was buried in a pit approximately 3.7-4.6 m (12-15 ft) deep.
Site 7			
Old DuPont Disposal Area	unknown	Located along the York River, approximately 850 m (2800 ft) upstream of Site 1.	This site received non-hazardous and/or inert waste and ammunition waste from the former Penniman Plant.

Table 1 continued on next page

Table 1 *Continued.*

Source Area	Period of Operation	Location	Description of Contamination
Site 8			
Landfill near Building CAD 14	1940s-1980s	Located approximately 640 m (2100 ft) east of the middle section of Cheatham Pond.	Non-hazardous materials such as spoiled meat, spoiled candy, and clothing were reportedly disposed of in trenches 610 m (2,000 ft) deep and 3 m (10 ft) wide.
Site 9			
Transformer Storage Area	1973-1980	Located approximately 347 m (1140 ft) south of Site 8.	Electrical transformers, some containing PCBs, were reportedly stored at this site.
Site 10			
Decontamination Agent Disposal Area near First Street	prior to 1982	Located approximately 240 m (800 ft) east of Site 6.	Containers of decontamination agent DS-2, were reportedly buried at this site. It is not known whether the DS-2 was neutralized prior to disposal.
Site 11			
Bone Yard	1940-1978	Located approximately 210 m (700 ft) west of Penniman Lake.	Oil, asphalt, and gasoline were reportedly contained in 15 barrels and two 500-gal above-ground tanks. Scrap metal, old containers (fuel oil, mixing tanks, etc.), fence posts, abandoned cars, discarded clamshell buckets, and other surplus metal objects used in heavy construction were found at this site. Approximately ten 5-gallon containers labeled "paraplastic" (concrete sealant), several 500-gallon tanks containing asphalt or oil used to make asphalt, and tar cylinders were also found at this site.
Site 12			
Disposal Site near Water Tower	unknown	Located approximately 610 m (2000 ft) east of Jones Pond.	This site was used for disposal of scrap metal, primarily old automobile parts and iron pipes.
AOC 1			
Scrap Metal Dump	unknown	Located in the former Penniman Plant area, approximately 270 m (875 ft) north of Site 12, near unnamed tributaries to Jones Pond.	This site was used as a debris disposal area. Both wood and metal debris were disposed of into two ravines along unnamed tributaries to Jones Pond.
AOC 2			
Dextrose Dump	unknown	Located in the former Penniman Plant area, approximately 160 m (525 ft) south of Site 6.	Glass bottles - many labeled "dextrose," partially buried empty drums, and mounds of soil (possibly indicating buried material), were found at this site. Buried drums containing a thin layer of tar or residue were also found at this site.
AOC 3			
CAD 11/12 Pond Bank	unknown	Located in the former Penniman Plant area, along the north bank of an unnamed pond, north of Site 4.	Metal banding and empty drums were disposed of at this site.
Penniman AOC			
sub-area Ammonia Settling Ponds	unknown	Located in the former Penniman Plant area within the former shell loading area.	This area contains earthen ammonia settling-pits where wastewater from an ammonia finishing building was discharged.

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Table 1 *Continued.*

Source Area	Period of Operation	Location	Description of Contamination
Penniman AOC			
sub-area Trinitrotoluene (TNT) Graining House Sump	unknown	Located in the former Penniman Plant area.	This area is an open-top, concrete-lined pit believed to be the sump pit for the TNT graining house.
Penniman AOC			
sub-area Trinitrotoluene (TNT) Catch Box Ruins	unknown	Located in the former Penniman Plant area.	This area was used to separate TNT particles from wastewater and consists of an earthen, brick-lined depression located next to the TNT graining house.
Penniman AOC			
sub-area Waste Slag Material	unknown	Located throughout the former Penniman Plant area, predominantly along the railroad tracks.	The area is comprised of metallic ore waste material (slag).
Penniman AOC			
sub-area 1918 Drum Storage	unknown	Located in the former Penniman Plant area.	This area was used to store 55-gallon drums.

NOAA Trust Resources

The NOAA trust habitats of concern are the surface waters and associated bottom substrates of the York River and its tributaries Queen and King Creeks (USEPA 2000). All water bodies within the Cheatham Annex drain into the York River, which empties into Chesapeake Bay approximately 24 km (15 mi) downstream from the site. Adjacent to the Cheatham Annex site, the lower York River is a tidal estuarine river, approximately 4 km (2.5 mi) in width and up to 10 m (33 ft) in depth. Queen and King Creeks are shallow tidal creeks with extensive tidal flats and emergent estuarine wetlands along the facility's border (USGS 1984).

Numerous estuarine and marine species use the York River estuary as a juvenile nursery and adult residence (Table 2). Atlantic croaker, bluefish, butterfish, weakfish, red drum, spot, and spotted seatrout, are coastal spawners; eggs and larval stages free-drift offshore and juvenile stages migrate into the estuary. Because many of these species have long life spans, juveniles tend to spend several years in the estuary before heading out to deeper water. Several species, as adults, can also be found seasonally within the estuary (Stone et al. 1994; Watkins 2002).

Anadromous species such as alewife, gizzard shad, striped bass, and white perch migrate up the lower York River, past the Cheatham Annex site, to spawning areas upstream. Adults of these species are considered common to abundant in the York River estuary. American eel, which spawn in marine waters, migrate past the site to reside in freshwater areas in the York River and its tributaries (Stone et al. 1994; Watkins 2002).

Table 2. NOAA trust resources present in the York River Estuary including Queen and King Creeks (Stone et al. 1994, Watkins 2002).

Species		Habitat Use				Fisheries	
		Migratory Route	Spawning Area	Nursery/ Juvenile Area	Adult Habitat	Comm.	Rec.
Common Name	Scientific Name						
ANADROMOUS FISH							
Alewife	<i>Alosa pseudoharengus</i>	◆		◆	◆	◆	
Gizzard shad	<i>Dorosoma cepedianum</i>	◆		◆	◆	◆	
Striped bass	<i>Morone saxatilis</i>	◆		◆	◆	◆	◆
White perch	<i>Morone americana</i>	◆	◆	◆	◆	◆	◆
CATADROMOUS FISH							
American eel	<i>Anguilla rostrata</i>			◆		◆	
MARINE/ESTUARINE FISH							
Atlantic croaker	<i>Micropogonias undulatus</i>			◆	◆	◆	◆
Atlantic herring	<i>Clupea harengus</i>				◆	◆	◆
Atlantic mackerel	<i>Scomber scombrus</i>				◆	◆	◆
Atlantic menhaden	<i>Brevoortia tyrannus</i>			◆		◆	
Atlantic spadefish	<i>Chaetodipterus faber</i>			◆	◆	◆	◆
Bluefish	<i>Pomatomus saltatrix</i>			◆	◆	◆	◆
Butterfish	<i>Peprilus triacanthus</i>			◆	◆	◆	
Channel catfish	<i>Ictalurus punctatus</i>			◆	◆	◆	◆
Cobia	<i>Rachycentron canadum</i>				◆	◆	◆
Mullet	<i>Mugil sp.</i>				◆	◆	◆
Northern kingfish	<i>Menticirrhus saxatilis</i>			◆	◆	◆	◆
Northern puffer	<i>Sphoeroides maculatus</i>				◆	◆	◆
Pigfish	<i>Orthopristis chrysoptera</i>				◆	◆	◆
Red drum	<i>Sciaenops ocellatus</i>			◆	◆	◆	◆
Spanish mackerel	<i>Scomberomorus maculatus</i>				◆	◆	◆
Spot	<i>Leiostomus xanthurus</i>			◆	◆	◆	◆
Spotted seatrout	<i>Cynoscion nebulosus</i>			◆	◆	◆	◆
Summer flounder	<i>Paralichthys dentatus</i>			◆	◆	◆	◆
Tautog	<i>Tautoga onitis</i>			◆		◆	◆
Weakfish	<i>Cynoscion regalis</i>		◆	◆	◆	◆	◆
INVERTEBRATES							
Blue crab	<i>Callinectes sapidus</i>		◆	◆	◆	◆	◆
Eastern oyster	<i>Crassostrea virginica</i>		◆	◆	◆	◆	◆
Northern quahog	<i>Mercenaria mercenaria</i>		◆	◆	◆	◆	◆

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Blue crab, eastern oyster, and northern quahog are present in the estuary. Juvenile and adult blue crab are abundant; mating and larval stages are also observed in the estuary, although females usually migrate to coastal waters to brood and release eggs (Stone et al. 1994; Watkins 2002).

The York River supports commercial fishing of every trust species listed in Table 2 and there is recreational fishing for these species as well.

There are currently no fish consumption advisories in effect for the York River or the main stem of Chesapeake Bay (VDH 2002).

Site-Related Contamination

Sub-areas within the Cheatham Annex site identified for further study were Sites 1, 7, 9, and 11, and AOC 1, AOC 2, and the Penniman AOC. This section focused on these sub-areas, which are potentially of greatest concern. Unfortunately, data for Site 11, AOC 1, and the Penniman AOC was not available for review at the time of this report. Table 3 provides a summary of the maximum concentrations of the primary contaminants of concern detected in various media sampled at Sites 1 and 7, and AOC 2. At Site 9, sample collection and chemical analysis were limited to PCBs in soil; results were not included in Table 3 but are instead presented below.

Site 1

The primary contaminants of concern at Site 1 are metals, SVOCs (primarily PAHs), pesticides, and PCBs. The Site 1 data, summarized in Table 3, represent 21 soil, six groundwater, four surface water, and five sediment samples collected during a series of site investigations conducted from 1986 through 1999. These samples were analyzed for metals, SVOCs, pesticides, and PCBs (CH2M Hill and Baker Environmental Inc. 2000).

Metals were the only contaminants detected in surface water and groundwater samples collected from Site 1. Arsenic, cadmium, chromium, mercury, and zinc were detected in the groundwater; however, only zinc was detected at a maximum concentration that exceeded the ambient water quality criteria (AWQC). The surface water samples from Site 1 contained detectable concentrations of arsenic, cadmium, chromium, copper, lead, mercury, and zinc. However, only copper and mercury were detected at concentrations that exceeded the AWQC.

In 1998, sediment samples were collected from the wetland adjacent to Site 1. No sediment samples were collected from the York River. Metals, SVOCs, pesticides, and PCBs were detected in the sediment samples. Concentrations of arsenic, cadmium, copper, lead, mercury, nickel, silver, and zinc exceeded the effects range-low (ERL) screening guidelines. Chromium and selenium were also detected, but at maximum concentrations below their ERLs. Four PAHs, benz(a)anthracene, chrysene, flouranthene, and pyrene were detected at maximum concentrations that exceeded the ERLs by an order of magnitude. Of the five pesticides detected at Site 1, dieldrin exceeded the ERL by two orders of magnitude, and DDE and DDT exceeded the ERLs by one order of magnitude. There are no ERLs available for comparison with the concentrations of the two pesticides gamma-BHC and heptachlor epoxide. PCB concentrations detected in sediment samples exceeded the ERL by one order of magnitude.

Soil sample analyses indicated that contaminants of concern were present at elevated concentrations. Concentrations of cadmium, copper silver, and zinc exceeded the mean concentration found in U.S. soil (mean U.S. soil concentration) by at least two orders of magnitude. Concentrations of mercury and nickel exceeded the mean U.S. soil concentration by one order of magnitude; arsenic and chromium concentrations were seven times the mean U.S. concentration. Concentrations of

Table 3. Maximum concentrations of primary contaminants of concern detected at Site 1, Site 7, and AOC 2 at the Cheatham Annex site (CH2M Hill and Baker Environmental Inc 2000; 2001a; 2001b). Contaminant values in bold exceeded screening guidelines.

Contaminant	Soil (mg/kg)			Water (µg/L)			Sediment (mg/kg)		
	Site Soil		BTAG ^a Screening Level	Ground- water Site 1	Surface Water		Sediment		ERL ^c
	Site 1	AOC 2			Site 1	Site 1	AWQC ^b	Site 1	
METALS/INORGANICS									
Arsenic	40	37	5.2 ^d	35	14	36	12	5.9	8.2
Cadmium	31	12	0.06 ^d	2.8	0.21	8.8	3.3	<0.09	1.2
Chromium	70	95	37 ^d	7.7	1.7	50	30	22	81
Copper	4300	320	17 ^d	ND	11	3.1	90	7.4	34
Lead	2700	220	0.01	ND	6.9	8.1	89	21	46.7
Mercury	1.6	0.06	0.058 ^d	0.05	0.17	0.94 ^f	1.4	0.11	0.15
Nickel	500	24	13 ^d	ND	ND	8.2	25	4.8	20.9
Selenium	7.9	<1.1	1.8	ND	ND	71	0.54	<0.81	1.0 ^g
Silver	14	23	0.05 ^d	ND	ND	1.9 ^h	2.4	8	1
Zinc	8700	130	48 ^d	130	64	81	340	33	150
PAHs									
Acenaphthene	41	<0.4	0.1	ND	ND	710 ⁱ	ND	<0.47	0.016
Acenaphthylene	0.069	<0.4	0.1	ND	ND	300 ^{h,j}	0.13	<0.47	0.044
Anthracene	77	<0.4	0.1	ND	ND	300 ^{h,j}	0.39	<0.47	0.0853
Benz(a)anthracene	120	<0.4	0.1	ND	ND	300 ^{h,j}	3.3	<0.47	0.261
Chrysene	120	<0.4	0.1	ND	ND	300 ^{h,j}	5.6	<0.47	0.384
Dibenz(a,h)anthracene	17	<0.4	0.1	ND	ND	300 ^{h,j}	0.57	<0.47	0.0634
Fluoranthene	240	<0.4	0.1	ND	ND	16 ^j	7.6	<0.47	0.6
Fluorene	48	<0.4	0.1	ND	ND	300 ^{h,j}	ND	<0.47	0.019
2-Methylnaphthalene	9.6	<0.4	NA	ND	ND	300 ^{h,j}	ND	<0.47	0.07
Naphthalene	17	<0.4	0.1	ND	ND	2350 ^{h,i}	ND	<0.47	0.16
Phenanthrene	260	<0.4	0.1	ND	ND	NA	ND	<0.47	0.24
Pyrene	200	<0.4	0.1	ND	ND	300 ^{h,j}	8.8	<0.47	0.665
Other SVOCs									
Pentachlorophenol	ND	<1.0	0.1	ND	ND	7.9	ND	<1200	NA
PESTICIDES/PCBs									
Aldrin	0.029	ND	0.1	ND	ND	1.3 ^h	ND	<0.0024	0.0095 ^k
Chlordane	ND	ND	0.1	ND	ND	0.004	ND	<0.0048	0.0005
4,4-DDE	1.5	0.0054	0.1	ND	ND	14 ^{h,i}	0.047	<0.0047	0.0022
4,4-DDT	2.2	0.0041	0.1	ND	ND	0.001	0.024	<0.0047	0.00158 ^l
Dieldrin	ND	0.0096	0.1	ND	ND	0.0019	0.0049	<0.0047	0.00002
Endosulfan (alpha + beta)	0.0022	<0.0067	NA	ND	ND	0.0087	ND	<0.0071	NA
Endrin	ND	<0.004	0.1	ND	ND	0.0023	ND	<0.0047	NA
Lindane (Gamma-BHC)	ND	<0.002	0.1	ND	ND	0.16 ^h	0.011	<0.0024	0.00032 ^m
Heptachlor	ND	<0.002	NA	ND	ND	0.0036	ND	<0.0024	0.0003 ⁿ
Heptachlor Epoxide	0.16	<0.002	0.1	ND	ND	0.0036	0.039	<0.0024	NA
Total PCBs	5.4	0.35	NA	ND	ND	0.03	0.81	0.54	0.0227
Toxaphene	ND	<0.2	NA	ND	ND	0.0002	ND	<0.240	NA

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Table 3 *Continued.*

a:	Region III Biological Technical Assistance Group (BTAG) screening levels for fauna (USEPA 1995).
b:	Ambient water quality criteria (AWQC) for the protection of aquatic organisms (USEPA 2002). Marine chronic criteria presented.
c:	Effects Range-Low represents the 10th percentile for the dataset in which effects were observed or predicted in studies compiled by Long et al. (1998).
d:	Shacklette and Boerngen (1984), except for cadmium and silver, which represent average concentrations in the Earth's crust from Lindsay (1979).
e:	Screening guidelines represent concentrations for Cr. ⁺⁶
f:	Derived from inorganic mercury data, but is applied to total mercury.
g:	Marine apparent effects threshold (AET) for amphipod bioassay. The AET represents the concentration above which adverse biological impacts would be expected.
h:	Chronic criterion not available; acute criterion presented.
i:	Lowest Observable Effect Level (LOEL) (USEPA 1986).
j:	Value for chemical class.
k:	Marine apparent effects threshold (AET) for amphipod and echinoderm larvae bioassays. The AET represents the concentration above which adverse biological impacts would be expected.
l:	Expressed as Total DDT.
m:	Threshold effects level (TEL).
n:	Marine apparent effects threshold (AET) for bivalve bioassay. The AET represents the concentration above which adverse biological impacts would be expected.
NA:	Screening guidelines not available.
ND:	Not detected

lead exceeded the BTAG screening level by five orders of magnitude. The maximum selenium concentration was detected at a concentration four times the BTAG screening level. Several PAHs were detected in the soil samples (range 0.069 - 260 mg/kg). Ten of the 12 PAHs listed in Table 2 were detected at concentrations that exceeded the BTAG screening levels by at least two orders of magnitude. Pesticides were detected in soil samples from (range 0.0022 - 2.2 mg/kg). Maximum concentrations of DDE and DDT exceeded the BTAG screening levels by one order of magnitude. PCBs were also detected in soil samples at 5.4 mg/kg.

Site 7

A single sediment sample was collected from Site 7 in 1999 and analyzed for metals, SVOCs, pesticides, and PCBs; only metals and PCBs were detected (CH2M Hill and Baker Environmental Inc. 2001b). Maximum concentrations of arsenic, chromium, copper, lead, mercury, nickel, and zinc did not exceed the ERL screening guidelines. The maximum concentration of silver exceeded the ERL by a factor of eight. Cadmium and selenium were not detected. PCBs detected in the sediment sample exceeded the ERL by one order of magnitude.

Site 9

The primary contaminants of concern at Site 9 are PCBs. Thirteen soil samples were collected in 1986 and were analyzed only for PCBs (CH2M Hill and Baker Environmental Inc. 2001a). Although PCBs were detected, there is no mean U.S. soil concentration available for comparison with the PCB concentrations that were detected in the soil samples.

AOC 2

The primary contaminants of concern at AOC 2 are metals, pesticides, and PCBs. In 1999, six test pits were excavated and one soil sample was taken from each pit. These soil samples were analyzed for metals, SVOCs, pesticides, and PCBs (CH2M Hill and Baker Environmental Inc. 2001b).

Analysis of the soil samples showed that concentrations of cadmium and silver exceeded the mean U.S. soil concentrations by two orders of magnitude; concentrations of copper exceeded the guide-

lines by one order of magnitude. The maximum concentration of lead exceeded the BTAG screening level by four orders of magnitude. The mean U.S. soil concentrations were exceeded by a factor of seven for arsenic, a factor of two for chromium and zinc, and just exceeded for nickel. PCBs and three pesticides, DDE, DDT, and dieldrin, were detected in soil samples collected from AOC2. However, there are no mean U.S. soil concentrations available for comparison to the concentrations of pesticides and PCBs reported in the soil samples. Selenium and PAHs were not detected in soil samples collected at AOC 2.

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