FINDING OF SUITABILITY TO LEASE (FOSL)

NIROP ROCKET CENTER, WV
ALLEGANY BALLISTICS LABORATORY

December 9, 1999

1.0 Introduction and Purpose

The Allegany Ballistics Laboratory (ABL) is a government-owned, contractor-operated (GOCO) facility located in Mineral County, West Virginia, approximately nine miles southwest of Cumberland, Maryland. The ABL facility has been used since 1942 primarily for research, development, production, and testing of solid propellants and motors for ammunition, rockets, and armaments. Alliant Techsystems, Inc. (Alliant) currently operates ABL-under a facilities use contract with the Naval Sea Systems Command (NAVSEA) as a research and development center and highly automated production facility for tactical propulsion systems and composite and metal structures. Alliant is a leading producer of tactical rocket motors, gas generators, and conventional warheads for the Department of Defense (DoD).

The ABL facility has been designated by the United States Environmental Protection Agency (EPA) as a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601, *et seq.*, as amended. The Navy has undertaken significant study and cleanup at the ABL facility since its inclusion on the NPL and has entered into a Federal Facility Agreement (FFA) with EPA and the West Virginia Department of Environmental Protection that governs actions at the ABL facility taken under the Navy's Installation Restoration Program (IRP).

As part of the Navy's effort to reduce overhead and property ownership costs, NAVSEA plans to terminate the Alliant facilities use contract and enter into an outlease of the lower plant area of ABL with Alliant. In preparation for this transaction, an Environmental Baseline Survey (EBS) was conducted in 1997 to document the environmental condition of the ABL facility.

The EBS Report serves as a basis for preparing a Finding of Suitability to Lease (FOSL). The purpose of the FOSL is to document the determination that the ABL Industrial Area can be leased for the intended use without an unacceptable risk to human health and the environment and without interfering with any existing or planned environmental restoration activities.

2.0 Property Description

ABL lies between the North Branch of the Potomac River on the north and west and Knobly Mountain on the south and east (See Figure 1). ABL consists of approximately 1561.00 acres. Alliant owns and operates a 57 acre plant (Plant 2) adjacent to ABL that is not included in the outleasing action and is not addressed in this FOSL.

Two separate areas of the NIROP will be excluded from the lease to Alliant Techsystems. These two areas are the Administrative Area (See Figure 2) and Plant 3 (See Figure 3). Both parcels may be leased out to different tenants and separate FOSLs have been prepared for each parcel.

For the purposes of the EBS and FOSL, the NIROP has been divided into two major study areas, Plant 1 and Undeveloped Area, each of which contain sub areas. These areas were subdivided based on past/current operations at each area. Table 1 lists the sub areas within Plant 1 and the Undeveloped Area and the general description of each sub area.

3.0 Environmental Condition of the Property

A determination of the environmental condition of the ABL facility has been made based upon the Final EBS Report (Baker, 1997). This section identifies the general process used to guide the classification of areas of the property proposed for lease into one of four categories based upon the environmental condition of the property (ECP). The actual classification of any portion of the real property has been based on both the information provided during the EBS and the physical observation of the property.

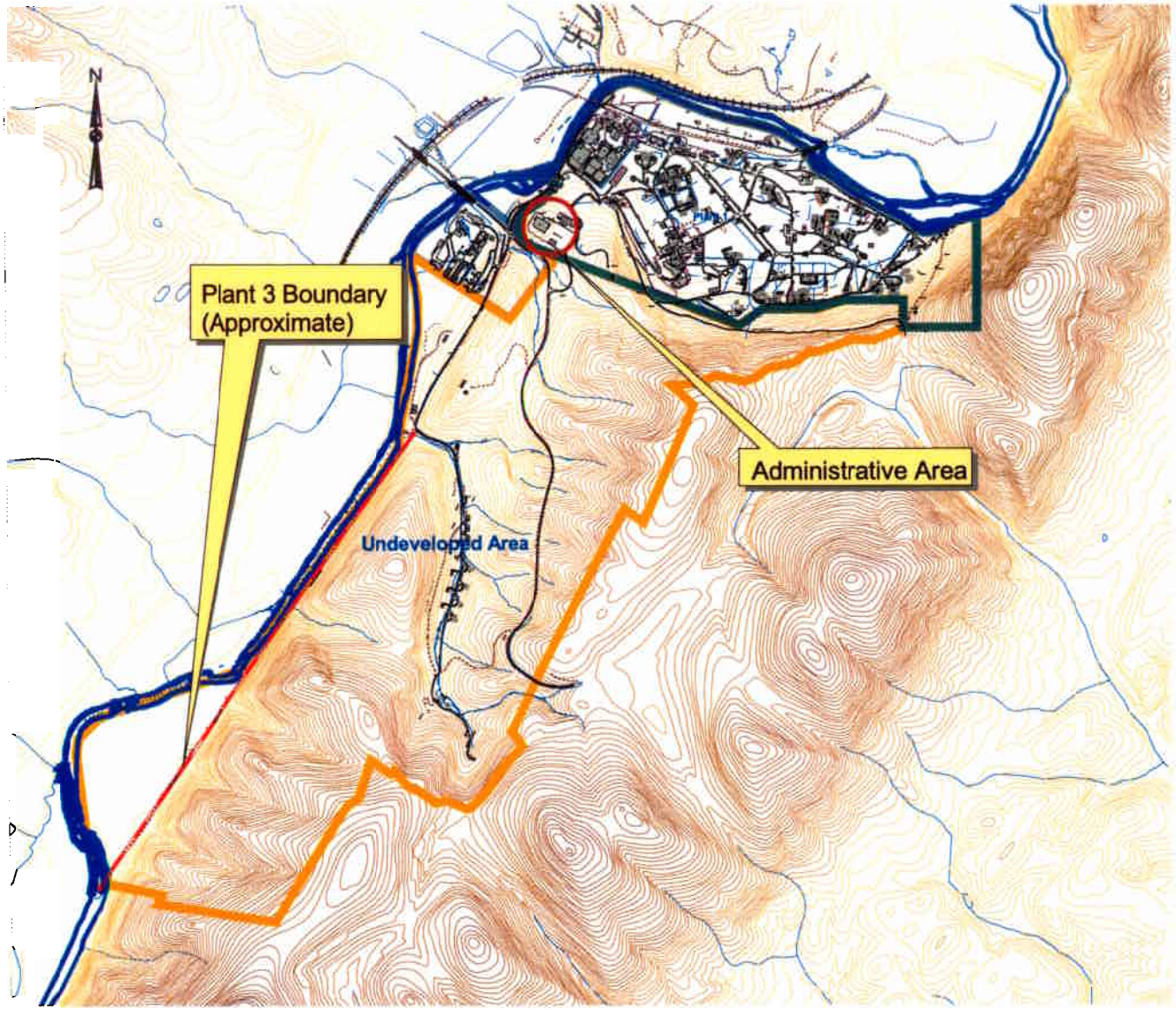
As part of the property classification, all existing information regarding the storage, release, or disposal of hazardous substances or petroleum products on the property proposed for lease has been reviewed to the extent practicable. The ECP classification provides an accurate "snapshot" of relevant aspects of the environmental condition of the property in support of the property lease. The ECP classification also provides the basis for determining the suitability for leasing the property. The following categories have been be used for classification purposes:

- Category 1 - Areas where no release or disposal of hazardous substances has occurred.

- Category 2 - Areas where either (a) release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response, or (b) release or disposal of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.

- Category 3 - Areas where release or disposal of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

- Category 4 - Areas where (a) a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented or (b) unknown areas.



Map Legend

Activity Boundary
- Plant 1
- Plant 2
- Undeveloped Area

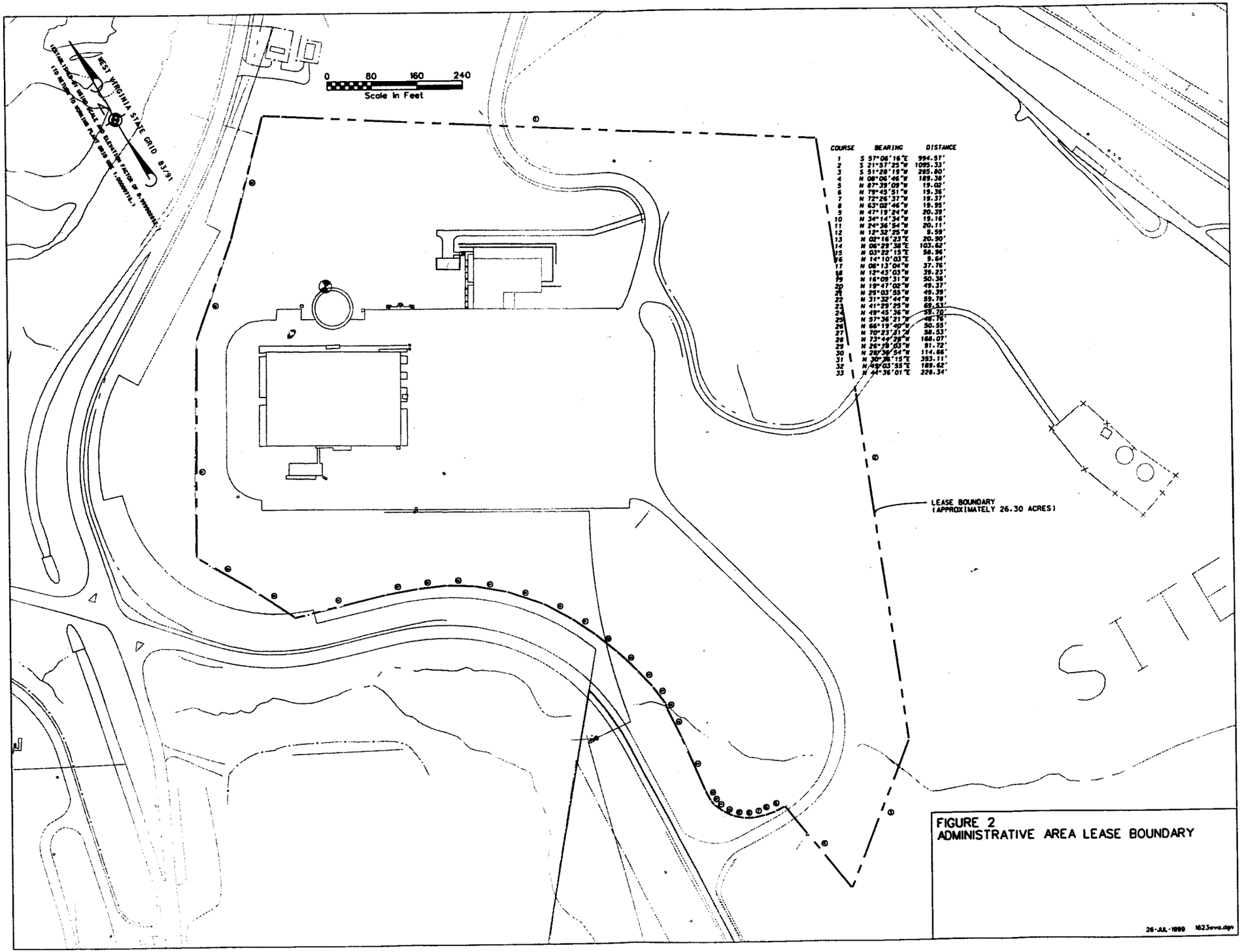
Roads
- PAVED
- DIRT
- BRIDGE
- Railroads

Hydrography (Rivers, Streams, Ditches)
- North Branch Potomac River
- Other streams and drainage ditches

Regional Topography
- 0
- 0 - 760
- 760 - 940
- 940 - 1160
- 1160 - 1380
- 1380 - 1560
- 1560 - 1740
- 1740 - 1980
- 1980 - 2280
- 2280 - 2580

FIGURE 1
Site Location Map

Allegany Ballistics Laboratory
Rocket Center, WV


WEST VIRGINIA STATE GRID 83/91
0 80 160 240
Scale in Feet
COURSE BEARING DISTANCE
1 S 57°06'16"E 994.57'
2 S 21°57'25"W 1095.33'
3 S 51°28'19"W 285.60'
4 N 08°06'46"W 189.38'
5 N 87°39'09"W 19.02'
6 N 79°45'51"W 19.36'
7 N 72°26'37"W 19.37'
8 N 63°02'46"W 19.95'
9 N 47°19'24"W 20.39'
10 N 34°14'34"W 19.16'
11 N 24°36'54"W 20.11'
12 N 12°32'25"W 8.58'
13 N 02°16'23"E 20.90'
14 N 06°29'38"E 103.62'
15 N 03°22'15"E 58.96'
16 N 14°10'03"E 9.64'
17 N 08°13'04"W 37.76'
18 N 12°43'03"W 39.23'
19 N 16°09'31"W 50.36'
20 N 19°47'02"W 49.37'
21 N 25°03'55"W 49.39'
22 N 31°32'44"W 59.78'
23 N 41°29'25"W 69.51'
24 N 49°45'36"W 55.70'
25 N 57°36'21"W 48.76'
26 N 66°19'40"W 50.55'
27 N 70°21'51"W 58.53'
28 N 73°44'28"W 168.07'
29 N 26°28'03"W 91.72'
30 N 20°36'54"W 114.66'
31 N 30°38'15"E 383.11'
32 N 49°03'55"E 189.62'
33 N 44°36'01"E 228.34'
LEASE BOUNDARY
(APPROXIMATELY 26.30 ACRES)
SITE
FIGURE 2
ADMINISTRATIVE AREA LEASE BOUNDARY
26-JUL-1999 1623ova.dgn

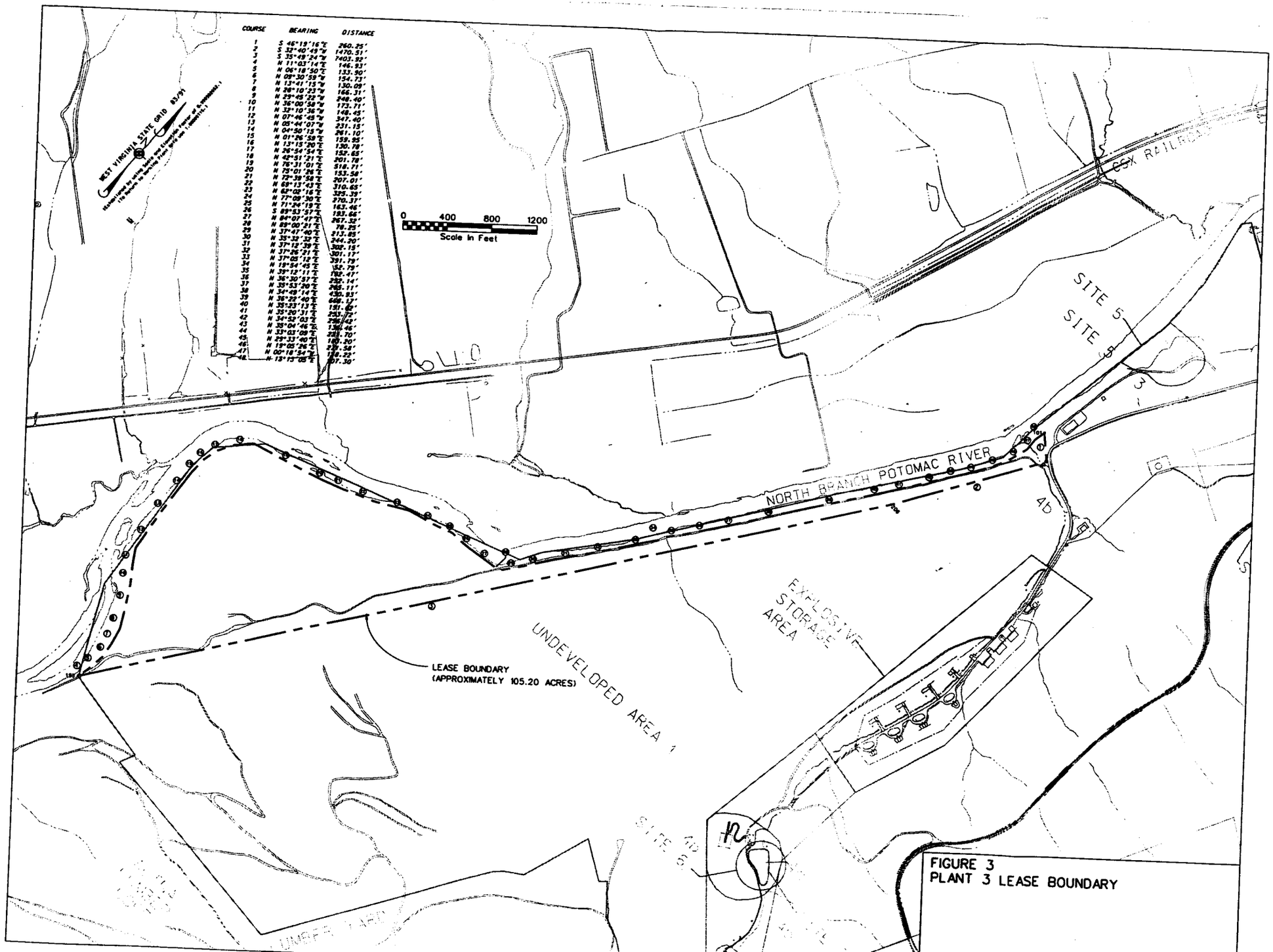


FIGURE 3
PLANT 3 LEASE BOUNDARY

TABLE 1

EBS AREA/SUBAREA ORGANIZATION
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

PLANT 1	
D1	Miscellaneous Area
D2	Inert Manufacturing Area (non-explosive manufacturing, processing, and storage area)
D3	Burning Ground Area
D4	Automotive Testing Area
D5	Research Area A
D6	Research Area B
D7	Utilities Area
D8	Manufacturing Area
D9	X-ray Area
D10	Explosive Storage Area (Plant 1)
D11	Test Area
UNDEVELOPED AREA	
UD1	Undeveloped Area 1
UD2	Undeveloped Area 2
IR Site 5	Former Inert Landfill
IR Site 6	Sensitivity Test Area Surface Water Impoundment
IR Site 7	Former Beryllium Landfill
Explosive Storage Area	Explosive Storage Area (500 Area)

It should be noted that ASTM PS-37 identifies seven potential property classifications. However, the seven classifications have been condensed into the four basic categories discussed above. These four categories encompass all of the requirements provided in the seven categories and will provide a simple understanding of the environmental condition of property.

Table 2 provides the ECP category and rationale and includes the property classifications within each sub area. Figures 4 and 5 (Plant 1 and Undeveloped Area, respectively) identify each of the sub areas along with their ECP classifications. It should be noted that the physical boundaries of the impacted areas displayed on the figures are approximate and do not necessarily represent the nature and extent of contamination with regard to CERCLA or RCRA investigation and cleanup activities. Instead, the figures are presented to reflect potential areas of concern as they relate to the transfer of the property. It should also be noted that the classification of the ABL property has been based on its past and current use. The classification of the property into ECP categories reflects a consensus among EPA Region 3, WVDEP, NAVSEA, LANTDIV, and ABL personnel.

However, some ECP categories have been changed from those identified in the EBS Report. These changes are a result of ongoing environmental actions that have occurred since the EBS was completed. As a result of these actions, the following changes to the ECP classifications were agreed upon by EPA Region III, WVDEP, NAVSEA, and LANTDIV personnel during the May 1999 meeting:

- IR Site 1 from Category 4a to Category 3
- IR Site 7 from Category 3 to Category 2b
- IR Site 10 from Category 4a to Category 3
- SWMU 26 from Category 2a to Category 4a
- SWMUs 37P & 37S from Category 2a to Category 4a

The EBS findings are summarized in Attachment (1) including regulatory status, hazardous waste/petroleum management practices, and the status of other environmental programs (e.g., air emissions, asbestos, etc.). The Final EBS Report (Baker, 1997) contains detailed information about each of these program areas.

4.0 ENVIRONMENTAL PROTECTION LEASE PROVISIONS

Attachment (2) provides requirements regarding environmental provisions and future use of the subject property that must be incorporated in the terms of the lease. The provisions are necessary to ensure that there will be no unacceptable risk to human health and the environment, that there will be no interference with IRP efforts at ABL, and to ensure that regulatory requirements for the IRP and other compliance programs are met. Although Attachment (2) does not include specific lease provisions, the terms of the lease should adequately address the conditions set forth therein.

TABLE 2

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
PLANT 1		
D1 - Miscellaneous Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • SWMUs 24A, 24K, 24Q, 29A, 29E, 32, 35, 53, and 60 • AOC A (one location) • IR Site 8 (1 earthen sump)
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMUs 3, 24J, 37F, 38, 57, and 59 • AOC J • Building 3 (which will encompass SWMU 24B) due to documented spills/releases • Building 9 due to documented spills/releases • Building 14 due to documented spills/releases • Building 16 due to documented spills/releases • Building 22 due to documented spills/releases • Building 300 (which will encompass SWMUs 28 and 29J) due to documented spills/releases • Building 8 due to documented spills/releases and permitted air release
	2b (Green)	Areas where a release or disposal of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken. • SWMUs 55 and 56
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMUs 24E, 24I, 24R, 24V, 37B, 37C, 37D, 37E, 37T, 37U, 37W, 40, 41, and 58 • AOC B • A portion of IR Site 10 (which will encompass SWMUs 19 [which is IR Site 4A], 24D, 24F, 24H, 24L, 24M, 24N, 25A, 29B, 29C, 29D, 30 [inside Building 8], 38, 45, 54, AOC A [two locations], and Building 7 spills and releases)
	4b (Red)	Unknown areas. • SWMUs 27A and 37V • A portion of AOC K
D2 - Inert Manufacturing Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • SWMUs 24Z, 24AA, 24BB, 27A, 29G, and 37Q

TABLE 2 (Continued)

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMUs 22B and 23 • Building 225 due to documented spills/releases • Building 256 (which will encompass SWMUs 25C and 29H) due to documented spills/releases • Building 368 due to permitted air release • Building 376 due to documented spills/releases • Building 421 due to documented spills/releases
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMU 36 • AOC N (which includes SWMUs 12, 14, 24S, 24T, 25B, 29F, 30, 37N, and 52) • IR Site 11 (which will encompass SWMUs 24U and 34)
D3 - Burning Ground Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
	3 (Yellow)	Areas where release or disposal of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken • IR Site 1 (which includes SWMUs 1, 6, 7, 8, 11, 20, 22C, and 22D)
	4b (Red)	Unknown areas. • SWMU 27A • AOC M
D4 - Automotive Testing Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • AOC A (one location)
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMU 38 (located within Building 224) • Building 148 due to documented spills/releases
D5 - Research Area A	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.

TABLE 2 (Continued)

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMU 37H
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMU 37G
	4b (Red)	Unknown areas. • SWUM 27A
D6 - Research Area B	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • SWMUs 24C and 44
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMUs 22A and 43 • Building 289 (which will encompass SWMU 24Y) due to documented spills/releases • Building 290 due to documented spills/releases
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMU 26
	4b (Red)	Unknown areas. • SWMUs 27A and 37A • A portion of AOC K
D7 - Utilities Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • AOC A (one location)
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • Building 344 (which will encompass SWMU 29K) due to documented spill/release and permitted air release • Building 412 due to permitted air release
	2b (Green)	Areas where a release or disposal of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken. • AOC E • IR Site 9 (which is AOC F)

TABLE 2 (Continued)

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMU 16
	4b (Red)	Unknown areas. • SWMUs 27A and 39
D8 - Manufacturing Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • SWMUs 24O, 24P, 24W, and 30 (two locations) • AOCs A (one location), C, and L • IR Site 8 (two earthen sumps)
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMUs 37I, 37L, 37M, 37O • IR Sites 2 (which is SWMU 4) and 3 (which is SWMU 5) • Building 312 due to permitted air release • Building 352 due to permitted air release • Building 364 due to permitted air release • Building 374 due to permitted air release • Building 392 due to permitted air release
	3 (Yellow)	Areas where release or disposal or hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken. • A portion of IR Site 10
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMUs 34, 37J, 37P, and 37S • An area identified near Building 151
	4b (Red)	Unknown areas. • SWMUs 24X and 27A • Building 262 (which encompass SWMU 29I)
D9 - X-ray Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

TABLE 2 (Continued)

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
		• SWMU 2
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • IR Site 4B (which is SWMU 18 and will encompass SWMU 28 [located inside Building 181] and AOC D)
	4b (Red)	Unknown areas. • SWMU 27A
D10 - Explosive Storage Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
	4b (Red)	Unknown areas. • SWMU 27A
D11 - Test Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
	2a (Green)	Areas where a release of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response. • SWMU 37K
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • SWMUs 21 and 37X
	4b (Red)	Unknown areas. • SWMUs 27A and 39 • AOCs G and O
UNDEVELOPED AREA		
UD1 - Undeveloped Area 1	1 (White)	Areas where no release or disposal of hazardous substances has occurred. • AOC A (one location)
	4b (Red)	Unknown areas. • SWMU 27A
UD2 - Undeveloped Area 2	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
Explosive Storage Area	1 (White)	Areas where no release or disposal of hazardous substances has occurred.

TABLE 2 (Continued)

ENVIRONMENTAL CONDITION OF PROPERTY CLASSIFICATIONS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Property Area/Subarea	Property Category	Property Classification Rationale
		• AOC A (one location)
	4b (Red)	Unknown areas. • SWMU 27A
IR Site 5 - Former Inert Landfill	3 (Yellow)	Areas where release or disposal or hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken. • IR Site 5 (SWMU 9) is the only site addressed within this study area. Remedial actions are currently being performed in this area.
IR Site 6 - Sensitivity Test Area Surface Water Impoundment	1 (White)	Areas where no release or disposal of hazardous substances has occurred. No SWMUs/AOCs or IR Sites are classified as 1 in this subarea.
	4a (Red)	Areas where a release of hazardous substances has occurred, but required actions have not yet been initiated or implemented. • IR Site 6
	4b (Red)	Unknown areas. • SWMU 27A • AOCs H and I
IR Site 7 - Former Beryllium Landfill	2b (Green)	Areas where release or disposal or hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken. • IR Site 7 (SWMU 10) is the only site addressed within this study area. Removal action efforts have been completed at this site (soil). Groundwater monitoring and post confirmation sampling continues.

2049055R

D5 – RESEARCH AREA A

D4 – AUTOMOTIVE TESTING AREA

D7 – UTILITIES AREA

D3 – BURNING GROUND AREA

D2 – INERT MANUFACTURING AREA

D8 – MANUFACTURING AREA

D1 – MISCELLANEOUS AREA

D6 – RESEARCH AREA B

D9 – X-RAY AREA

D10 – EXPLOSIVE STORAGE AREA

D11 – TEST AREA

LEGEND

CLASSIFICATION (BASED ON THE INFORMATION/DATA/DOCUMENTATION AVAILABLE AT THE TIME OF THE SURVEY)	CLASSIFICATION NUMBER	MAP COLOR
AREAS WHERE NO RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED.	1	
AREAS WHERE RELEASE OF HAZARDOUS SUBSTANCES HAS OCCURRED, BUT AT CONCENTRATIONS THAT DO NOT REQUIRE A REMOVAL OR REMEDIAL RESPONSE	2a	
AREAS WHERE RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED, AND ALL REMOVAL OR REMEDIAL ACTIONS TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT HAVE BEEN TAKEN.	2b	
AREAS WHERE RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED, AND REMOVAL OR REMEDIAL ACTIONS ARE UNDERWAY, BUT ALL REQUIRED REMEDIAL ACTIONS HAVE NOT YET BEEN TAKEN.	3	
AREAS WHERE A RELEASE OF HAZARDOUS SUBSTANCES HAS OCCURRED, BUT REQUIRED ACTIONS HAVE NOT YET BEEN INITIATED OR IMPLEMENTED,	4a	
UNKNOWN AREAS.	4b	

600 0 300 600

1 inch = 600 ft.

Baker

Baker Environmental, Inc.

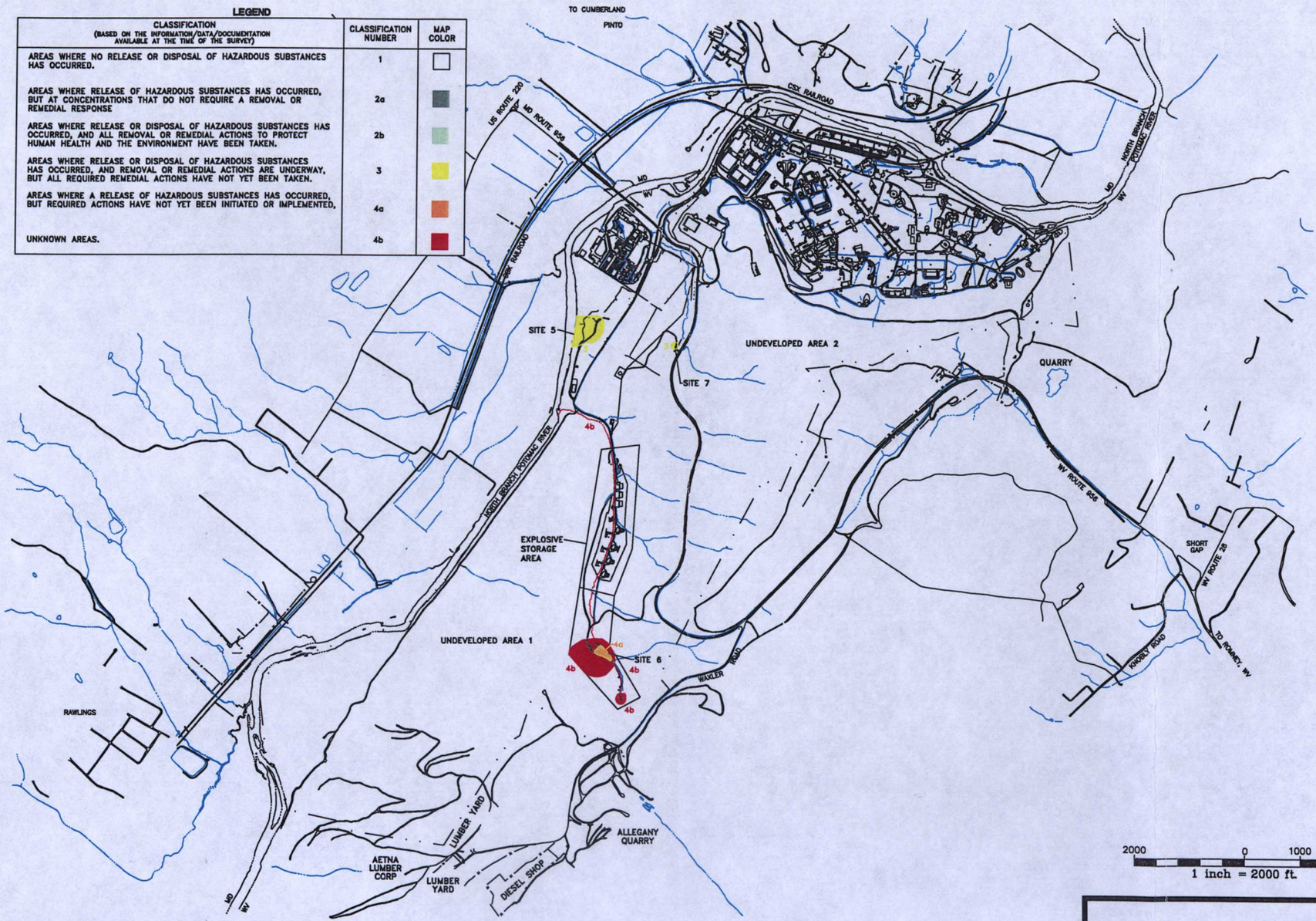
FIGURE 4
PLANT I PROPERTY CLASSIFICATIONS

ALLEGANY BALLASTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

2049056R

LEGEND

CLASSIFICATION (BASED ON THE INFORMATION/DATA/DOCUMENTATION AVAILABLE AT THE TIME OF THE SURVEY)	CLASSIFICATION NUMBER	MAP COLOR
AREAS WHERE NO RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED.	1	
AREAS WHERE RELEASE OF HAZARDOUS SUBSTANCES HAS OCCURRED, BUT AT CONCENTRATIONS THAT DO NOT REQUIRE A REMOVAL OR REMEDIAL RESPONSE	2a	
AREAS WHERE RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED, AND ALL REMOVAL OR REMEDIAL ACTIONS TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT HAVE BEEN TAKEN.	2b	
AREAS WHERE RELEASE OR DISPOSAL OF HAZARDOUS SUBSTANCES HAS OCCURRED, AND REMOVAL OR REMEDIAL ACTIONS ARE UNDERWAY, BUT ALL REQUIRED REMEDIAL ACTIONS HAVE NOT YET BEEN TAKEN.	3	
AREAS WHERE A RELEASE OF HAZARDOUS SUBSTANCES HAS OCCURRED, BUT REQUIRED ACTIONS HAVE NOT YET BEEN INITIATED OR IMPLEMENTED,	4a	
UNKNOWN AREAS.	4b	



2000 0 1000 2000
1 inch = 2000 ft.

Baker
Baker Environmental, Inc.

SOURCE: ABL, 1997

FIGURE 5
UNDEVELOPED AREA
PROPERTY CLASSIFICATIONS

ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

5.0 FINDING OF SUITABILITY TO LEASE

Based on the EBS Report, the references cited therein and further information set out above, I have concluded that all Department of the Navy and Department of Defense requirements to reach a Finding of Suitability to Lease have been fully met for the subject property. The subject property is suitable to lease for the intended purpose, provided that the lease adequately incorporates the conditions set out in Attachment (2), without posing an unreasonable risk to human health and the environment and without interference with the environmental remediation process at ABL. Notifications of hazardous substance storage, release, and disposal on the property must be provided in the lease documents.

J.R. Bailey

12/09/99

J. R. Bailey, P.E.
Head, Environmental Support Branch
Atlantic Division, Naval Facilities Engineering Command

Date

ATTACHMENT (1)

ALLEGANY BALLISTICS LABORATORY ENVIRONMENTAL BASELINE SURVEY SUMMARY OF FINDINGS

I. Hazardous Waste – CERCLA/RCRA/AOC Related Contamination

Past operations at ABL have contaminated various media at the facility. Previous and ongoing CERCLA and RCRA investigation activities at the facility have identified 122 Solid Waste Management Units (SWMUs), 15 Areas of Concern (AOCs), and 11 Installation Restoration (IR) sites (7 of the IR sites are associated with SWMUs and 2 of the IR sites are associated with AOCs). Descriptive information for each IR Site, SWMU, and AOC including location, dates of operation, general description, and status is provided on Table A-1. Figure A-1 provides the location of all IR sites at ABL. The locations of the SWMUs, AOCs, and UST sites can be found in Figure 6-2 of the EBS Report (Baker, 1997).

II. Hazardous Materials and Petroleum Products Management

ABL is a large quantity generator and operates under a RCRA Part B Permit. The general types of waste generated in the past are similar to those currently generated and mainly consist of propellant explosives, materials contaminated with explosive components, spent solvents, waste oil, still bottoms from degreasing operations, lead compounds, alodine waste, and ash residues from open burning of explosive materials. Waste generation rates prior to 1980 are unknown. A decrease in waste generation from 1980 until the present has occurred primarily due to efforts to find other parts cleaning methods and efforts to generate less reactive scrap and partly as a result of a decrease in the level of activity.

Currently, ABL conducts hazardous waste operations at two principal locations within Plant 1. These consist of a drum storage area that manages hazardous as well as non-hazardous waste and an open burning area where reactive wastes are treated.

A. Hazardous Materials Management

There are no storage tanks for hazardous waste on site. Hazardous wastes are stored in containers no larger than 55-gallon drums. These containers, as well as other 55-gallon storage containers, are inspected weekly for signs of bulging, deterioration, and leaks, and a record is kept of each inspection. If there are any signs of bulging, deterioration, or a leak, the subject container is transferred to an over pack drum or the material is transferred to a new container. Any leaks detected are cleaned up immediately.

B. Petroleum Product Management

ABL has several locations where petroleum products are stored, managed, or utilized for facility operations. Bulk petroleum products are currently stored in either ASTs, USTs, or minor storage tanks (drums or small ASTs less than 275 gallons). Based on the Spill Prevention, Control, and Countermeasure (SPCC) Plan (1996), two ASTs, six USTs, and six small storage tanks are currently in operation.

C. Storage Tanks/Oil Water Separators

The following subsections discuss the status of storage tanks used by the ABL facility. Again, detailed information concerning closures and remediation activities is provided in the Final EBS Report (Baker, 1997).

1. USTs

Based on review of ABL records, visual survey, personnel interviews, and the Tank Management Plan, several USTs were removed from the facility. A majority of these USTs were removed from areas around Buildings 7 and 224. Buildings 2, 3, 100, 300 and 504 also had USTs removed from the surrounding areas. Tanks from Buildings 2, 3, 300, and 504 were used to store heating fuel for use on site and were unregulated. A tank was also located at Building 333 but was removed in August 1999.

In May of 1993, two USTs (i.e., a 6,000-gallon gasoline and a 4,000-gallon diesel) were installed at Building 7 to continue servicing the facility vehicles. Approximately 42,120 gallons of gasoline per year are used at this location. Automotive fuels are dispensed from a pump island at a paved level area adjacent to the USTs. There are no drainage ditches or storm or sanitary sewer drains in the immediate vicinity of the dispensing station.

The fuel tanks are state-of-the-art double walled tanks with interstitial monitoring provisions that meet all UST regulations for the service application. They are also fitted with dual-point vapor-recovery systems. Four USTs (i.e., three 6,000-gallon gasoline tanks and one 10,000-gallon gasoline tank) were also installed near Building 224, and service the Auto Test Area (D4). Monitoring wells were installed around the new USTs, and groundwater is monitored on an annual basis. It should be noted that groundwater will only continue to be monitored at the Building 224 tanks, since the results from the last round of groundwater monitoring data at other locations were all non-detect.

Currently, active USTs at Buildings 7 and 224 are addressed in ABL's SPCC Plan.

In addition, one 1,000-gallon No. 2 fuel oil UST previously existed outside of Building 344 (Heating Plant), which is located in the Utilities Area D7. This tank was primarily used for boiler start-up prior to cutting (or switching over to) the No. 6 fuel oil from the

onsite 50,000-gallon ASTs when the No. 6 oil was needed as a heat source for the boiler. However, this tank was removed in May 1999 according to ABL personnel.

2. ASTs

Based on review of ABL records, visual survey, and personnel interviews several ASTs were identified at the facility. Five ASTs were located within the Utilities Area D7, two ASTs were identified within the Inert Manufacturing Area D2, and one AST was identified within the Miscellaneous Area D1. To date, records indicate that there has never been a release or spill from the ASTs.

3. Oil/Water Separators

Three oil/water separators are present within Plant 1. These oil/water separators are used in conjunction with air compressor operations. Two oil/water separators were previously located within Building 215, which was demolished in 1994. One oil/water separator is currently located in each of the following: Building 252, Building 300, Building 414, and Building 341. The units separate lubricating oil from condensate water produced in the process of compressing air. Water from the units is discharged to floor drains located within the utility rooms. These drains discharge to the Plant 1 wastewater treatment system. The oil drains into 5-gallon buckets located adjacent to the compressors. The buckets are emptied into a 55-gallon drum that serves as one of the satellite accumulation areas before being transferred to the current hazardous waste storage area.

III. Air

ABL has been submitting Superfund Amendments and Reauthorization Act (SARA) Title 313 Toxic Release Inventory (TRI) reports since 1988. Methylene chloride was the only compound reported in the 1996 Report. Emissions of methylene chloride were 9,845 pounds in 1996. ABL has been working on internal reduction goals based on 1987 levels, and they also participated in the USEPA's Industrial Toxics Project (ITP) program which required a 33 percent reduction in emissions from 1988 levels by year-end 1992 and 50 percent by year-end 1995. ABL entered into a voluntary consent order with the WV Air Pollution Control Commission in 1991 to reduce emissions of methylene chloride, trichloroethylene, and ethylene dichloride by 95 percent. ABL has worked toward these goals in the following manner

- Several buildings throughout Plant 1 have been identified as air emission sources. All other air emission sources are either permitted, grand fathered, or are at concentrations below deminimis levels. See Table 6-10 for a list of all air emission sources at this facility. The pending air permit is an application for a Title V Operating Permit. Once this permit is issued, all other air permits will be combined into one permit.

The steam generation plant (Building 344) which operates using both coal and oil fired boilers also contributes significantly to air emissions. A bag house is used to reduce emissions from the coal fired boiler.

IV. Asbestos

An asbestos survey and quantitative analysis was performed by Environmental Control Technologies in September 1993. The survey identified and quantified all the suspected asbestos-containing material (ACM) in Plant 1, including the steam distribution system. Samples of building materials, different types of pipe insulations, roofs, gaskets, floor tiles, tar, German siding, and various other materials were collected and sent to a laboratory for asbestos analysis. An asbestos management plan and cost summary for each building included in the Plant 1 survey was developed after determination of asbestos containing material was confirmed by the laboratory analysis. The Environmental Management Program Plan dated March 1997 provided a historic summary of asbestos issues.

Currently, ABL aims to eliminate asbestos and ACM from the plant. The ongoing demolition of buildings at ABL is where most of the asbestos activity occurs, aside from routine maintenance that was identified in an ACM Operations and Maintenance Plan. The asbestos abatement in the buildings designated for demolition is primarily government funded. These removal activities are performed in compliance with the regulations governing removal actions.

In-house monitoring of abatement during maintenance work (such as steam line repair) is performed as required and is typically funded by Alliant Techsystems. ABL currently has an independent asbestos abatement program for the removal of ACM from buildings and it is dependent upon the schedule for building demolition and upgrade as well as future findings.

V. Pesticides

The IAS dated 1983 identified pesticide use for the purpose of rodent control. ABL reported that the pesticide use was limited to less than 5 gallons per year of 2,4-D and 2,4,5-T for weed control and approximately 25 pounds per year of Decon for rodent control. Pesticide mixing was performed in Building 145, and less than 5 gallons per year of rinse water was discharged down the drain leading to the sanitary sewer. At that time, a one-year supply of Decon was stored in the paint storage area of Building 145. Between approximately 1960 to 1970, pest control was handled by Hygienic Sanitation Company on a contract basis, and pesticides were not stored at ABL.

In the Interim Memorandum for SWMUs and AOCs Identified in the RFA dated June 1, 1995, SWMU 60 - Building 23 Pesticide Storage Area was identified as a pesticide storage area after two pesticide spray pump canisters were observed in the area. The storage area was used by a former maintenance supervisor to store tools. He indicated that the canisters were old fire extinguishers obtained when the fire department disallowed the use of carbon tetrachloride. They were filled with methylene chloride and used to remove wasps from work areas. He stated that pesticides were never stored in this area. For this reason it was determined that no further action was anticipated for this SWMU.

No DDT, chlordane, or other banned pesticides were stored at ABL. It was reported that small quantities of DDT and chlordane were used prior to 1970. There are no reports of spills or pesticide disposal at ABL. Presently, ABL reports that they have no Integrated Pest Management Plan; however, they do control the rodents, insects, and deer. Poisons used to control rodents are stored in covered areas (usually indoors), off-site exterminators are used to control insects, and various methods are used to control the deer population. The typical weed retardant activities are conducted by a contractor and no storage or management of pesticides are practiced at ABL.

VI. Polychlorinated Biphenyls

All known PCB containing equipment has been eliminated from ABL at this time. Possible exceptions are small items to be salvaged that previously contained oil. The items are tested prior to release and are not typically contaminated. The results of the 1996 PCB survey conducted at ABL indicated that all equipment is PCB free.

ABL had a PCB spill management plan (beginning in June 1980) for PCB containing equipment. This plan contained standard operating procedures for handling PCB equipment, controlling and cleaning up spills, using approved containers, and providing personnel protection. At the time the IAS was conducted only one spill or leak of PCB fluid had been reported. In 1981, approximately one pint of fluid leaked from a seal on a transformer mounted on a concrete pad outside Building 256. The fluid leaked onto the concrete pad and a small portion of the adjacent soil. An area of approximately one square foot was excavated to a depth of about one foot. The excavated soil was PCB-contaminated with a concentration above 50 ppm. Soil adjacent to the excavation was not PCB contaminated.

During the RFA, several areas were identified in which PCBs were formerly stored, spilled, or potentially released. A PCB rags storage area (SWMU 32) was located in Building 23 from the 1970s until the 1980s, and consisted of an accumulation area approximately 10 feet by 7 feet. This unit managed one drum of PCB-contaminated rags and one drum containing a PCB capacitor. In addition, a drum containing PCB fluid used for topping off electrical equipment was stored here. It is anticipated that no further action will be required at these SWMUs. The former PCB storage area (SWMU 53) was

also located in this area in Building 25; this unit was in operation from the 1980s until 1990. It was a fully enclosed wooden shed with a concrete base where 55-gallon drums of PCB material and hydraulic equipment were stored. No evidence of a release was identified and this SWMU was designated as no further action required.

SWMU 58 is the former PCB spill area at Building 2 and was not identified in the RFA. During a site visit to SWMU 24A (during the Phase I RCRA Facility Investigation) the ABL Partnering Team observed the former PCB spill area inside Building 2; therefore, this area was identified as a SWMU. Hydraulic fluids, suspected to contain PCBs, from a former hydraulic press had leaked onto the concrete floor. During the early 1990s the hydraulic press and contaminated soil and concrete had been removed and the remaining concrete floor was steam cleaned and a paint sealant was applied. Although evidence of these actions was observed and a Removal Action Report was reportedly submitted to USEPA, it could not be found. For this reason, the ABL Partnering Team recommended collecting surface soil samples outside the entrance and loading area to the building to determine if PCBs had been tracked to this area. Two surface soil samples were collected and analyzed for PCBs. PCBs were detected in these samples but at levels below the Toxic Substances Control Act (TSCA) residential cleanup level for total PCBs of 10 milligrams per kilogram (mg/kg). Consequently, this SWMU was recommended for no further action.

AOC B, the former PCB transformer storage area, which ceased operations in 1992, consisted of a concrete pad approximately 20 feet by 30 feet located east of Building 157. This area served as a staging area for transformers that were designated for reuse at ABL. This unit was not enclosed, contained no containment structures, and had no roof. The transformers were stored on wooden pallets. No evidence of release was observed during the VSI for the RFA. According to the facility, no leaks were detected from transformers which contained PCB oil. Minor leaks of non-PCB oil consisted of a few milliliters and typically accumulated on the pallets. The RFA recommended that soil samples be collected from the joint areas in the concrete pad and in the area around the unit to determine if PCBs were present. Four soil samples and two wipe samples were collected and analyzed for PCBs. The concentrations of Aroclors detected were below residential Risk Based Concentrations (RBCs) (except on sample for Aroclor-1260) and the TSCA residential soil cleanup level. Consequently, this AOC was recommended for no further action.

There was a PCB remedial activity at ABL. Building 27, the remedial site, was one of the buildings used in the preparation of propellants. This building was taken out of service during the remedial activities. Part of the process in Building 27 required the use of a small platform elevator which was operated by a hydraulic pumping system. The elevator hydraulic system was the source of the PCB contamination. The contaminated areas consisted of a small section of the platform room floor, the elevator pit, and the hydraulic pump room floor.

Hercules (the former contractor) obtained six hexane wipe samples of the affected floor surfaces. Results indicated PCB contamination levels equal to or less than 84 ppm on the

floor surface at the elevator platform and between 259 and 327 ppm on the pump room floor surface. The hydraulic pumping system has been identified as having 10 to 15 gallons of PCB-contaminated fluid. The contamination level of the hydraulic fluid had been identified as 35,180 ppm PCB; however, subsequent analysis indicated a PCB contamination level of 9,800 ppm.

Forty-four gallons of kerosene were used to purge the PCB-contaminated hydraulic fluid from the elevator hydraulic system. Elevator equipment including the hydraulic pump and piping, the elevator lift platform, and cylinder was removed and placed in a roll-off box. Floor surfaces in the pump room, elevator pit room, and the elevator pit were cleaned using a commercial cleaning agent mixed with water. After the existing elevator pit room floor tile covering was removed, the bare floor surface was prepared and a new conductive (MIPOLAM) floor system was installed to contract specifications. After the elevator pit was decontaminated, it was filled to the existing floor elevation with 3,000 pounds per square inch (psi) ready mix concrete with a plasticizer added to prevent shrinkage.

VII. Radon Survey

A radon survey was conducted during a facility-wide testing program in 1993. Based on the radon report, it appears that the tests were conducted in a majority of the rooms in each building. Results from the testing indicated non-detectable or very low levels of radon. The findings of the report suggest that radon is not impacting the buildings at ABL.

VIII. Medical Wastes

Limited quantities of medical waste are generated at ABL. Most of the wastes are generated at the on-site medical facility, Building 6 (Medical Clinic). Based on information obtained during the records research, an infectious waste disposal management plan became effective in 1989. Infectious waste is red bagged, and transportation and disposal is provided by the facility's safety department. According to ABL personnel, the wastes are disposed of at a permitted incinerator located at a regional hospital. No documentation for disposal of wastes on-site was found during the records research nor knowledge of such disposal found during the interviews.

IX. Ordnance

Ordnance is stored in magazines located within the UD1 Area and in two buildings within Plant 1. The magazine area consists of a series of 11 bunkers, all of which store explosives. Magazines 505 through 508 were constructed in 1964. Magazines 509 through 512 were constructed in 1969. Magazine 531 was constructed in 1991 and magazines 532 and 533 were constructed in 1993. The floors of the magazines have an

inert floor covering; heaters and dehumidifiers are also present within some of the magazines. Damaged, unsafe, spilled, and overage explosives are taken to the burning grounds for destruction. These magazines are rated for between 42,500 pounds and 100,000 pounds of explosive storage capacity. The magazines mainly store nitroglycerin, butanetriol trinitrate, nitramines, and rocket motors.

Currently only Buildings 169 and 173 store explosives; these buildings were constructed as 100,000 lb. capacity magazines. Building 169 was designated as a bulk explosive storage facility (casting powder, small propellant grains, solid ingredients, etc.) and was equipped with a dock to allow material handling from a truck bed directly to magazine floor level. Building 173 was designed to handle finished rocket motors. This building was equipped with an overhead hoist/bridge crane and floor at road level to provide material handling access by truck or forklift. Also in this area are Buildings 170, 172, 174, and 175. Buildings 172 and 175 are earthen barricades which provide frontal protection to and from the magazines. Buildings 170 and 174 are utility buildings which provide forced warm air for heating the buildings. All of these buildings were constructed in 1959.

Records review revealed no significant spills of explosives. However, since 1979 two small fires have occurred in the magazine area. One was a fire at Magazine 508 from an overheating electrical element and the second was a small vehicle fire at Magazine 507.

X. Lead-Based Paint and Lead in Drinking Water

Based on the age and use of the buildings at ABL, it is likely that lead-based paint was used at the facility. In 1994, 1995, and 1996, samples were collected from 117 buildings slated for demolition to determine if the demolition debris would be considered hazardous by characteristic. A sampling plan was developed based upon recommended Army guidance. A total of 63 composite samples were collected and subjected to Toxic Characteristic Leaching Procedure (TCLP) extraction followed by analysis for lead. Twenty-five of the 63 samples indicated that the lead was present above the detection limit of 0.09 milligram per liter (mg/l). All samples contained lead below the regulatory threshold of 5 mg/l with the exception of one sample collected from Building 100 where lead was detected at 15 mg/l. Therefore, the aggregate of the demolition debris was not considered hazardous under RCRA.

Drinking water at ABL is supplied by a series of production wells 528 (PW1), 529 (PW3), 530 (PW2), 534, 538, and 543. Water from the production wells is treated before use. Water also was previously supplied by A Well (PWA) and C Well (PWC). TCE was detected in both of these wells in 1980. In the late 1980s, when drinking water standards were developed, the use of these wells was discontinued. Water from C Well was used for boiler feed water during this period. In the 1990s, use of A Well and C Well was discontinued entirely. In 1996 WVDEP issued a Cease and Desist RCRA order. Water from Wells 528, 530 and 529 was analyzed for soluble lead during the

confirmation study. No lead was detected above the detection limit of 0.005 ug/L in any of the samples.

XI. Radioactive Wastes

Limited quantities of radioactive waste have been generated at ABL. Based on information obtained during an interview with ABL personnel, the facility maintained a radioactive cobalt source in the 1950s and early 1960s for its X-raying process at Building 180. The cobalt source is no longer stored at ABL. Currently, the facility maintains a license from the Nuclear Regulatory Commission (NRC) for a depleted uranium source for its operations. Because the quantity is limited, there has been no need to replace or dispose of the uranium. No documentation of releases or disposal of radioactive wastes on site was found during the records research or during the interviews.

XII. Landfills

The following sections discuss the location and operation of landfills that have been identified at the ABL facility.

A. Closed Landfills

Two permitted Class D (non-commercial construction/demolition debris) one-half acre landfills

were in operation at ABL from 1995 to 1996. Both of these landfills only accepted concrete and asphalt from construction and demolition activities.

Both of these landfills are located on the western side of Magazine Road, south of the Plant 2 perimeter fence, and are adjacent to each other. These landfills were filled by placing material in the excavated depression, spreading the material, and then covering with a soil cover.

B. Operating Landfills

Currently there is only one operating landfill at ABL. This landfill falls under the "one-time exemption" regulation from the state, which allows ABL to open a one-half acre landfill without applying for a permit. This landfill has the classification of D (non-commercial construction/demolition debris). The landfill accepts non-regulated debris (i.e., glass, metal, wood, concrete, sheet rock, wall board, etc.) The landfill is located southeast of Plant 2, along Magazine Road and is southwest of the former permitted construction/ demolition landfills. This landfill began operations in November 1996.

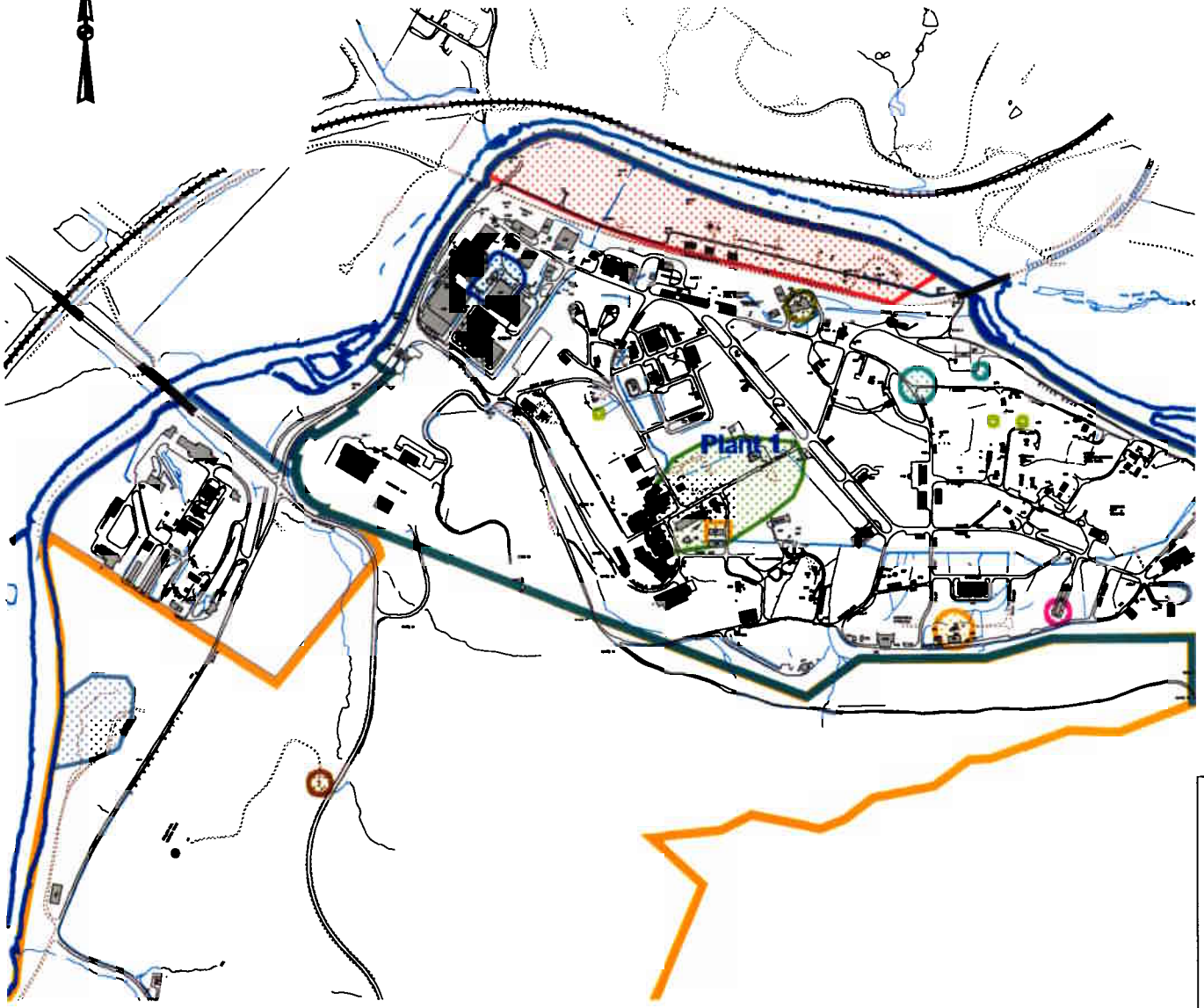
C. CERCLA Landfills

Three CERCLA landfills (sites) have been identified at ABL. All of these sites have or will be investigated under the Navy's IR program. The following lists the identified CERCLA sites in which land filling occurred:

IR Site 1 - Northern Riverside Waste Disposal (Ash Landfill SWMU 7 and 11)
IR Site 5 - Inert (Non-Ordnance) Landfill
IR Site 7 - Beryllium Landfill

D. Open Dump Landfills

Two unpermitted open dump landfills are located along the North Branch of the Potomac River along the northern boundary of ABL. These landfills are considered construction debris type landfills, one of which reportedly contains debris from a building which was destroyed as a result of an explosive accident. These areas have been identified as AOC M – Solid Waste Landfill.



Map Legend

IR Sites
- Site 1 - Northern Riverside Waste Disposal Area
- Site 10 - Contaminant Plume Near Building 157
- Site 11 - Building 215 (F-WELL)
- Site 2 - Previous Burning Ground (1942-1949)
- Site 3 - Previous Burning Ground (1950-1958)
- Site 4A - Spent Photographic Developing Solutions Disposal Site
- Site 4B - Spent Photographic Developing Solutions Disposal Site
- Site 5 - Inert Landfill
- Site 6 - Sensitivity Test Area Surface Water Impoundment
- Site 7 - Beryllium Landfill
- Site 8 - Earthen Sumps - Explosives Wastewater Sumps/Catch Basin
- Site 9 - Former Acid Disposal Pit

Roads
- PAVED
- DIRT
- BRIDGE
- Railroads

Activity Boundary
- Plant 1
- Plant 2
- Undeveloped Area

FIGURE A-1
IR Site Locations

Allegany Ballistics Laboratory
Rocket Center, WV

TABLE A-1

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 1, Former Hazardous Waste Storage Area I (This SWMU is included as part of IR Site 1)	D3	Approximately 360 square foot pad used for the storage of hazardous waste prior to disposal off site. A pilot study of a fluidized bed incinerator was conducted on the pad during the early 1980s for the disposal of propellants and explosives. The unit managed hazardous wastes F001, F002, F003, F005, D001, D002, and F019 including chlorinated solvents, still bottoms, metal plating pretreatment sludge, and waste acids and bases. Propellants and explosives were tested at the pilot test incinerator; reportedly the only wastes generated were aluminum oxide, aluminum, potassium chloride, and carbon.	The RFA recommended no further action for this SWMU. It is included as part of IR Site 1 under the IR Program. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May1999 meeting, no further action is planned for SWMU 1.
SWMU 2, Former Hazardous Waste Storage Area II	D9	Approximately 40 foot by 100 foot concrete pad designed to manage drums of wastes from satellite accumulation areas throughout the plant prior to being shipped off site. Typical wastes managed included: still bottoms (F001, F002), paint removers (F001, F002, F003, F005), paint related materials (D001, F001, F002, F003, F005), chromium containing wastes (D007), lead containing wastes (D008), and corrosive waste (D002).	The RFA recommended no further action. WV DEP wanted this SWMU reevaluated. After further evaluation, no evidence of releases was observed. Therefore, the RFA recommendation was accepted. This was a permitted pad under RCRA, and formal RCRA closure is needed. Further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 3, Current Hazardous Waste Storage Area	D1, Bldg. 366	Concrete pad (maximum capacity 300 55-gallon drums) for the storage of hazardous wastes. Wastes include: still bottoms (F001, F002), paint removers (F001, F002, F003, F005), paint-related materials (D001, F001, F002, F003, F005), corrosive waste (D002), chromium-containing waste (D007), lead-containing waste (D008), ash from Burning Grounds. In addition, spent solvents, waste motor oil, coolant, antifreeze, cured and uncured resin, waste alcohol, asbestos, waste silver, Alodine solids, and PCB-contaminated materials were also managed in this unit.	No further investigative action recommended for this SWMU. This pad is permitted and managed under RCRA. Further action is planned for this SWMU.
SWMU 4, Former Burning Ground I (Also IR Site 2)	D8, D9	A burning ground of approximately 20 feet by 40 feet (gravel covered surface), used for burning waste propellant components and explosives. Exact boundaries of the burning area are not known. Approximately 50 pounds of waste materials per day are estimated to have been burned. Also, prior to the mid 1960s, very small amounts of chlorinated hydrocarbons were used. Acetone was the primary solvent and cleaning liquid in use.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. This SWMU is included as part of IR Site 2 under the IR Program. No further action is planned for this SWMU under a proposed NFRAP.
SWMU 5, Former Burning Ground II (This SWMU is IR Site 3)	D8	A burning ground of approximately 40 feet by 200 feet (clay covered surface), used for burning reactive wastes consisting of propellants and explosives. Approximately 200 pounds of waste materials per day were burned.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. This SWMU is IR Site 3 under the IR Program. No further action is planned for this SWMU under a proposed NFRAP.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 6, Current Burning Ground (This SWMU is included as part of IR Site 1)	D3	A fenced-in area measuring 280 feet by 1,250 feet, consisting of nine burning locations (pads). Typical wastes managed include: nitroglycerin, nitrocellulose, ammonium perchlorate, butanetriol trinitrate, HMX, RDX, and various propellants and explosives manufactured from the above. Most of the wastes generated at the facility between the 1940s and 1970, including flammable wastes, were disposed by burning; ash residues reportedly contained aluminum oxide and residual solvents such as methylene chloride and 1,1,1-TCA.	The RFA recommended that monitoring should continue at this SWMU under interim status. Investigated under IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.
SWMU 7, Inert Burning Ground (This SWMU is included as part of IR Site 1)	D3	Approximately 20 foot by 20 foot area located outside the fenced area of the Current Burning Ground. The unit managed waste materials contaminated with explosives, including explosive contaminated waste rags. These rags may also have been contaminated with solvents including methylene chloride and TCE.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. Investigated under IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 8, Acid Disposal Pits (This SWMU is included as part of IR Site 1)	D3	Two unlined, crushed-limestone-filled, earthen pits approximately 10 feet by 10 feet in area and 4 feet in depth. Waste acids and bases generated by lab operations were poured into the pit and the chemicals were allowed to percolate through the limestone.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. Investigated under IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.
SWMU 9, Inert (Non-ordnance) Landfill (This SWMU is IR Site 5)	South of Plant 2	Landfill approximately 420 feet long, 110 feet wide, and 20 feet deep. This unit received empty drums, unknown lab and photographic chemicals, scrap metal and plastic, large quantities of broken fluorescent tubes containing mercury, sandblasting grit, wood products, construction debris waste, fiberglass, and other resin-coated fibers. The empty drums were formerly used to store chemicals such as methylene chloride, TCE, acetone, and ammonium perchlorate. Chunk metallic lead potentially may have been disposed here.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. This SWMU is IR Site 5 under the IR Program. A ROD was signed for soil and waste remediation on January 1997. Construction of a landfill cap was completed and has been operational since October 1997. Based on the October 22, 1997 meeting, further action is planned for groundwater at IR Site 5.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 10, Beryllium Landfill (This SWMU is IR Site 7)	Off of Route 956	Earthen pit measuring approximately 10 x 10 feet in area and 6 feet in depth. A maximum of two pounds of beryllium and 100 pounds of excess lab chemicals were disposed here. Reportedly, the unit contained several hundred pounds of beryllium-contaminated wiping tissues, gloves, and sample containers. Glassware from the labs was also disposed at this unit.	RFA recommended an RFI for this SWMU, and that the RFI be coordinated with the ongoing activities of the RI. Soil removal at this site/SWMU was completed under the IR Program in 1994, with final disposition of the wastes in March 1997. See IR Site 7. Based on the May 1999 meeting, no further action is planned for IR Site 7.
SWMU 11, Former Burn Cages and Ash Landfill (This SWMU is included as part of IR Site 1)	D3	Unit consists of an ash landfill and at least 2 burn cages. During the 1960s and 1970s the facility burned paper, cafeteria garbage, packaging materials and non-explosive materials in open wire mesh cages. The ash generated from the burning was disposed at the landfill located adjacent to the cage areas. The landfill also contains ash and unburned waste from the Inert Burning Ground, demolition debris, empty solvent drums, and rocket motor casings.	RFA recommended an RFI for this SWMU and that the RFI be coordinated with the ongoing activities of the RI. Investigated under IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May1999 meeting, no further action is planned for SWMU 1.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 12, Former Alodine Treatment Tank (This SWMU is included as part of AOC N)	D2, outside of Bldg. 167	Industrial wastewater from the Alodine process (aluminum surface chemical conversion process) was pre-treated at the unit for chromium reduction and precipitation. As of 1980, 4,200 gallons of Alodine process wastewater were treated at this unit on a monthly basis. According to waste hauler=s profiles, Alodine waste contains up to 2% hexavalent chromium.	The RFA recommended no further action for this SWMU. The agencies agreed with this recommendation under the condition that possible releases from this tank be considered in the investigation of SWMU 52 (the current tank). Based on the October 22, 1997 meeting, further action is planned for AOC N.
SWMU 14, Current Alodine Waste Storage Area I (This SWMU is included as part of AOC N)	D2, Bldg. 167	Concrete area used to store Alodine waste and Alodine contaminated rags. According to waste hauler=s profiles, Alodine waste contains up to 2% hexavalent chromium.	The RFA recommended no further action for this SWMU. The agencies agreed with this recommendation under the condition that possible releases from this tank be considered in the investigation of SWMU 52. Based on the October 22, 1997 meeting, further action is planned for AOC N.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 16, Plant 1 Wastewater Treatment System	D7, Bldg. 294	Wastewater treatment plant which treated all of the facilities sanitary wastewater along with some industrial wastes from photographic processing and several labs. Also wastewater containing residual RDX, pre-treated wastewater from the Alodine process, and some water from oil/water separators was discharged to this unit. Also, a portion of the facilities stormwater sewer system was routed to this unit from the 1970s until 1984.	The RFA recommended that soil samples be collected in the overflow area. These samples were collected as part of the Phase II RI. The analytical results indicated that no analytes were detected above the EPA Region III RBC values; therefore, no further action was recommended for this SWMU. Since industrial wastes were reportedly treated at this treatment plant, collection of soil samples was recommended when the treatment plant is demolished. Treatment plant has been demolished and samples are pending. Based on the October 22, 1997 meeting, further action is planned for this SWMU.
SWMU 18, Photo Solution Discharge Area I (This SWMU is IR Site 4B)	D9, adjacent Bldg. 181	An unlined land-based area which received discharges of spent photographic and x-ray solutions from developing and processing operations. Unknown quantities of silver, cyanide, and phenol may have been discharged to the soil.	The RFA recommended that an RFI be conducted at this SWMU, and that the RFI be coordinated with the ongoing activities of the RI. Investigated under IR Site 4B. Based on the October 22, 1997 meeting, further action is planned for IR Site 4B.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 19, Photo Solution Discharge Area II (This SWMU is IR Site 4A)	D1, adjacent Bldg. 231	The sewage treatment plant received discharges of spent photographic and X-ray solutions from developing and processing operations.	The RFA recommended that soil samples be collected around the unit at Building 231. Possible releases from this area have been considered in the investigation of SWMU 26. The building drainage was always connected to the sewage treatment plant and soil testing has confirmed no release. Based on the October 22, 1997 meeting, further action is planned for IR Site 4A.
SWMU 20, Solvent Disposal Pits (This SWMU is included as part of IR Site 1)	D3	Unlined earthen pits used for the disposal of explosive contaminated solvents such as TCE, PCE, and 1,1,1-TCA. The wastes were poured into the 3 pits and allowed to percolate into the soil or evaporate; the waste in the pits was then detonated.	The RFA recommended that an RFI be conducted at this SWMU and that the RFI be coordinated with the ongoing activities of the RI. Investigated as part of IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 21, Building 241 Catch Basin	D11, Bldg. 241	The unit managed water, which may have contained residual explosive materials from testing operations in the Building 241 bunker. The unit is a metal catch basin, the bottom and sides of which consisted of a fine screen which filtered the particulate residue and allowed water to pass through.	No further investigative action recommended for this SWMU. Based on the October 14, 1998 meeting, further action is planned for this SWMU.
SWMU 22, Incinerators SWMU 22A - Explosive Waste Incinerator SWMU 22B - Classified Document Incinerator SWMU 22C - Pilot Fluidized Bed Incinerator SWMU 22D - Non-Explosive Combustible Incinerator (SWMUs 22C and 22D are part of IR Site 1, SWMU 22D is also SWMU 11)	D2, D3, D6, D8	Includes an explosive waste incinerator (1942 - 1950s) which treated explosive wastes; classified document incinerator (1942 - 1980s) for scrap paper; pilot fluidized bed incinerator (1980s) for specially prepared propellant and explosive wastes; and non-explosive combustible incinerator (1960s - 1970s) for facility refuse and non-explosive combustible materials.	No further investigative action recommended for SWMUs 22A and 22B. SWMUs 22C and 22D will be investigated as part of IR Site 1. Based on the October 22, 1997 meeting, no further action is planned for SWMUs 22A and 22B. Further action is planned for IR Site 1. A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.
SWMU 23, Salvage Yard	D2, east of Bldg. 270	Unit managed scrap metals including aluminum and copper, also stores outdated equipment such as compressors (all PCB containing equipment has been removed from this area), empty drums, and, at one point, spent automotive batteries.	No further investigative action recommended for this SWMU. This SWMU will be addressed under RCRA voluntary cleanup.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 24, Satellite Accumulation Areas [24A through 24BB] (SWMUs 24S and 24T are included as part of AOC N)	D1, D2, D4, D5, D6, D7, D8	Several areas throughout the facility used to accumulate waste materials before they are transferred to the current hazardous waste storage area.	Based on the October 22, 1997 and the October 14, 1998 meeting, no further action is planned for SWMUs 24A, 24B, 24C, 24D, 24F, 24H, 24J through 24Q, 24U, 24W, 24Y, 24Z, 24AA, and 24BB. Further action is planned for 24E, 24R, and 24X. In addition, further action is planned for SWMUs 24S and 24T under AOC N. SWMU 24V is being handled under IR Site 10. A ROD was signed in August 1998 to treat groundwater. SWMU 24I was removed June 1998 and is pending regulatory concurrence.
SWMU 25, Solvent Recovery Stills [25A, 25B, and 25C] (SWMU 25B is included as part of AOC N)	D1, D2, Plant 2	Solvent recovery stills located in Buildings 8, 167, and 256that manage methylene chloride and spent solvents. 1,1,1-TCA still bottoms were generated.	No further investigative action was previously recommended for this SWMU. Based on the October 22, 1997 meeting, no further action is planned for SWMUs 25A and 25C. SWMU 25B will be further investigated under AOC N.
SWMU 26, Septic Tanks	D6, south of Bldg. 369, & 181	Unit managed industrial and sanitary wastewater. Industrial wastewater was generated from photographic processes and lab glassware washing. Industrial wastewater potentially contained solvents, including acetone and photographic solutions.	No further investigative action recommended for this SWMU. Based on the May 1999 meeting, further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 27A, Plant 1 Drainage Ditch System	Throughout the facility (D1, D2, D3, D5, D6, D7, D8, D11)	A system of open earthen drainage ditches, catch basins, and culverts throughout the facility which serve as a stormwater drainage system. This system also receives washdown from some of the process buildings (e.g. Bldg. 181) and discharge from the settling basin (SWMU 44 that was removed in 1993).	SWMU 27A was recommended for further action (Phase II RFI).
SWMU 28, Silver Recovery Units	D1, Bldg. 181 and 300, D9	Three units which are used to reclaim silver from photographic and x-ray development waste. Silver sludge is collected by plant personnel before transfer off site.	No further investigative action recommended for this SWMU. Based on the October 22, 1997 meeting, no further action is planned for this SWMU.
SWMU 29, Dust Collectors and Baghouses [29A through 29K] (SWMU 29F is included as part of AOC N)	Several areas throughout the facility (D1, D7, D8, D2)	Includes dust collectors and baghouses located at Buildings 2, 8, 35, 36, 145, 167, 256, 262, 300, and 344. Typical wastes managed at these units include sawdust, metal residues, and fly ash. Dust collectors at Buildings 262 and 2003 collected product, not waste. Thus, they should not have been classified as SWMUs.	No further investigative action was previously recommended for this SWMU. SWMU 29F will be included in AOC N. Based on the October 22, 1997 meeting, no further action is planned for SWMU 29A through 29E and 29G through 29K. Further action is planned for 29F which is included as part of AOC N.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 30, Spray Booth Filters (SWMU 30 in Building 167 included as part of AOC N)	Several areas throughout the facility (D1, D8)	The facility operates several paint and coating spray booths for painting and lining rocket motor cases, wooden signs, and other components. According the waste profiles, paint wastes contain paint resins, enamels, epoxides, and urethanes. In addition, MIK, MIBK, xylenes, toluene, petroleum distillates, 1,1,1-TCA, and TCL constituents are present in these wastes.	No further investigative action was previously recommended for this SWMU. Spray booth filters located in Building 167 will be included in AOC N. Based on the October 22, 1997 meeting, no further action is planned for the spray booth filters except for the one located in Building 167 (AOC N).
SWMU 31, Laboratory Waste Areas	Each lab area	Five-gallon plastic containers equipped with fitted lids, which are used to collect waste propellants from lab test areas. These units manage propellant waste materials that have been tested with VOCs, isocyanates, and inorganics. The propellants may contain NG, HMX, RDX, and AP; in addition some propellants may contain lead.	No further investigative action was previously recommended for this SWMU. No further action is planned for this SWMU.
SWMU 32, PCB Rags Storage Area	D1, Bldg. 23	An accumulation area measuring approximately 10 feet by 7 feet. Unit managed one drum of PCB-contaminated rags and one drum containing a PCB capacitor. In addition, a drum containing PCB fluid used for topping off electrical equipment was stored here.	The RFA recommended no further action. The agencies accepted this recommendation. During a site visit, two canisters of pesticide were observed. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 33, Dumpsters	Throughout the facility	Leased side-loading and roll-off dumpsters. Most dumpsters receive non-hazardous general refuse including kitchen refuse, paper refuse, non-hazardous cured resin and composite materials, shop waste, waste tires, and non-hazardous ash from burning activities. Spray Booth filters are also disposed in these units.	No further investigative action was previously recommended for this SWMU No further action is planned for this SWMU.
SWMU 34, Oil/Water Separators	D1, D2, D8	Seven units located in Buildings 215, 252, 300, 341, 2026, and 8501. The primary waste managed by these units is waste lubricating oil from air compressors.	The RFA recommended no further action. Oil-stained soils were observed behind Building 252, and oil was observed in a shallow excavation adjacent to Building 341. Oil and visibly stained soils will be removed from both areas and confirmatory sampling will be performed. Based on the October 22, 1997 meeting, further action is planned for this SWMU.
SWMU 35, Paper Mulcher Waste Accumulation Area	D1, Bldg. 1	A temporary storage area for paper mulch generated by the facility=s security disintegrator machine. The unit manages paper mulch generated from classified documents and scrap paper.	No further investigative action was previously recommended for this SWMU. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 36, Oil Pit	Bldg. 215	A below grade circular pit measuring two feet in diameter and two feet in depth. This unit contained a dark, highly viscous petroleum substance during the RFA site visit.	The RFA recommended that the integrity of the oil pit be evaluated, and if impaired, soil sampling should be performed. A 55-gallon drum filled with No. 5 fuel oil and adjacent soils were removed to clean the area. Confirmatory soil samples indicated no contamination. However, core samples collected from F-Well (IR Site 11) investigation showed additional contamination below a clay layer that was previously determined to be clean. Based on the October 22, 1997 meeting, further action is planned for this SWMU.
SWMU 37, Wastewater Sumps [37A through 37Q, 37S through 37X] (SWMU 37N is part of AOC N)	Throughout the facility (D1, D2, D5, D6, D8, D11)	Currently 24 units have been identified. These units have received or have potentially received contact cooling water from propellant machining operations, building washdown water from structures at which solid explosives are processed, wastewater containing materials other than propellants and explosives, coolants, oil, solvents, Alodine wastewater, salts, sands, and sediment.	Further investigation for SWMUs 37B, 37G, 37J, 37P, 37S, 37V, 37W, and 37X. SWMU 37N will be included as part of AOC N. SWMUs 37C, 37D, 37E, 37T, and 37U were removed June 1998 and are pending regulatory concurrence. No further action is planned for SWMUs 37A, 37F, 37H, 37I, 37K, 37L, 37M, 37O, and 37Q.
SWMU 38, Parts Cleaners	D1	Several units located at Building 2014, Building 7, one of the satellite accumulation areas, Building 145,and Building 224. Solvents include 1,1,1-TCA and Varsol solvent.	No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 39, Weir	D7, near Bldg. 344; D11	Concrete skimmers are located along two of the swales, which are part of the drainage ditch system. These units were constructed to provide secondary containment in the event of a fuel oil release from a boiler.	The RFA recommended that soil samples be collected around and upstream of the unit. Because this weir is part of the drainage ditch system on Plant 1, it is associated with SWMU 27A. Based on the October 22, 1997 meeting, further action is planned for this SWMU.
SWMU 40, Laboratory Exhaust Filter	D1, Bldg. 12	Disposable filter mechanism located outside of the Strand Bomb Testing Laboratory. It is approximately 18 inches above ground surface, and the majority of the surrounding ground surface is covered with cement. This unit manages combustion products from propellant testing.	This SWMU was removed and is pending regulatory concurrence.
SWMU 41, Automotive Maintenance Area Drain	D1, Bldg. 7	Below grade collection drain located at Building 7. This unit manages washdown water and liquids from inside the building; waste oil, coolants, and solvents are used regularly in this area.	The RFA recommended that the integrity of the unit be assessed, and if impaired, soil samples to be collected. Soil sampling was conducted; low levels of VOCs were detected. Possible releases from this SWMU have been considered during the investigation of SWMU 37B - Building 7 Wastewater Sump. Based on the October 22, 1997 meeting, further action is planned for this SWMU.
SWMU 42 is AOC F	NA	NA	NA

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 43, Soil Pile	D1, Bldg. 7	Soil was excavated from the area behind Bldg. 7 when six USTs were removed. The soil was contaminated with diesel fuel and gasoline (BTEX) from the UST cleanup operations. The soil was land farmed on plastic sheeting.	No further action is planned for this SWMU.
SWMU 44, Settling Basin	D1, Bldg. 7	When the tanks and surrounding soil were removed from Bldg. 7 the excavation pits filled with water. Air stripping was conducted on the water and the water is then pumped to a manmade basin. Solids are allowed to settle and water is discharged to the drainage ditch system. The unit receives water from the excavation area with TPH levels of less than 50 ppb.	The RFA recommended water samples be collected. Effluent water samples were collected and evaluated. The agencies agreed that no further actions were necessary at this SWMU. No further action is planned for this SWMU.
SWMU 45, Air Stripper	D1, Bldg. 7	An air stripper was temporarily installed behind Bldg. 7 (see SWMU 43 and 44 description). The unit receives water from the excavation area with a TPH content of less than 10 ppb. The facility has estimated that emissions of VOCs total less than one half pound per hour during operation.	No further action is planned for this SWMU.
SWMU 46 is AOC G	NA	NA	NA
SWMU 47 is AOC H	NA	NA	NA
SWMU 48 is AOC I	NA	NA	NA
SWMU 49 is AOC J	NA	NA	NA
SWMU 50 is AOC K	NA	NA	NA
SWMU 51 is AOC L	NA	NA	NA

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 52, Current Alodine Treatment Tank (This SWMU is part of AOC N)	D2, south of Bldg. 167	A treatment tank which was open on top with a plastic containment structure (6 feet in diameter by 2 feet deep) beneath it. The tank and containment structure were on a concrete pad. This treatment tank operated at the same location as the former Alodine treatment tank (see SWMU 12 description). This unit managed spent Alodine.	This SWMU was recommended for further action (Phase II RFI). The tank was removed in 1995. Based on the October 22, 1997 meeting, further action is planned for AOC N.
SWMU 53, Former PCB Storage Area	D1, Bldg. 25	Fully enclosed wooden shed with a concrete base. 55-gallon drums of PCB material and hydraulic equipment units, which contained PCB oil, were stored at this unit.	No further action is planned for this SWMU.
SWMU 54, Building 7 UST Removal Site	D1, Bldg. 7	Former location of 7 USTs which held gasoline and diesel. These tanks were removed as part of the facility UST removal program in 1992. This unit manages contaminated soil and water (BTEX associated with gasoline and fuel oil from the former tanks).	The RFA recommended that an RFI be conducted to assess the nature and extent of contamination. A data package including documentation of pre-removal sampling, the removal action taken, confirmatory sampling, and groundwater monitoring was provided and reviewed. The removal effort was conducted under the direction of the WV DEP UST Division. Since the SWMU will continue to be monitored under the authority of the WV DEP UST Division, the agencies agreed to no further action for this SWMU under the IR Program. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 55, Building 2 UST Removal Site	D1, Bldg. 2	Former location of 2 USTs, which were used to store heating, oil. These tanks were removed as part of the facility UST removal program in 1991. This unit manages contaminated soil (TPH associated with the heating oil from the former tanks).	The RFA recommended that an RFI be conducted to assess the nature and extent of contamination. A data package including documentation of pre-removal sampling, the removal action taken, confirmatory sampling, and groundwater monitoring was provided and reviewed. The tanks were not regulated, so no formal reporting of the removal effort was required. The work was monitored by the WV DEP and verbal authorization was given to close the excavation. Confirmatory soil sample results were evaluated. The agencies agreed that no further actions were necessary for this SWMU. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 56, Building 3 UST Removal Site	D1, Bldg. 3	Former location of 4 USTs, which were used to store No. 5 fuel, oil. These tanks were removed as part of the facility UST removal program in 1991. This unit manages contaminated soil from No. 5 fuel oil spill from the former tanks (TPH levels less than 50 ppm).	The RFA recommended that an RFI be conducted to assess the nature and extent of contamination. A data package including confirmatory sampling was provided and reviewed. The tanks were not regulated, so no formal reporting of the removal effort was required. The work was monitored by the WV DEP and verbal authorization was given to close the excavation providing that a groundwater monitoring well was installed in the excavation of Tank 3-1. The well was installed and sampled. The groundwater results were reviewed. The agencies agreed that no further actions were necessary for this SWMU. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 57, Building 300 UST Removal Site	D1, Bldg. 300	Former location of one UST which was apparently used to store No. 5 fuel oil. This tank was removed as part of the facility UST removal program in 1991. This unit manages contaminated soil from apparent No. 5 fuel oil releases.	The RFA recommended that an RFI be conducted to assess the nature and extent of contamination. A data package including confirmatory sampling was provided and reviewed. The tank was not regulated, so no formal reporting of the removal effort was required. The work was monitored by the WV DEP. The agencies agreed that no further actions were necessary for this SWMU. No further action is planned for this SWMU.
SWMU 58, Building 2 PCB Spill Area	D1	A PCB spill was reported from hydraulics associated with a large hydraulic press, which had once operated in the building.	This SWMU was not identified in the RFA. A remedial action of this reported PCB spill area was completed, but documentation of the remedial action was not available. Based on the October 22, 1997 meeting, further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 59, Building 3 Drain	D1, Building 3	Unknown	This SWMU was not identified in the RFA, but added to the list after it was observed by the WVDEP during their site visit. The agencies agreed that no further actions were required at this SWMU as long as possible releases from the drain are considered in the investigation of SWMUs 26 and 27A. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
SWMU 60, Building 23 Pesticide Storage Area	D1, Bldg. 23	Storage area used by a former maintenance supervisor to store tools.	This SWMU was not identified in the RFA. It was added to the list after two pesticide spray pump canisters were observed in the area during the site visit for SWMU 32. According to the former maintenance supervisor, the canisters were old fire extinguishers obtained when the fire department disallowed the use of carbon tetrachloride. The extinguishers were filled with methylene chloride and used to remove wasps from work areas. He stated that pesticides were never stored in this area. The agencies accepted the explanation and agreed that no further actions were required for this SWMU. No further action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC A, Underground Storage Tanks	Several locations in Plant 1 (D1, D7, D8, D4)	This AOC is comprised of 14 USTs. Several of the USTs have been removed and/or closed in place. Seven USTs remain in service; six of these tanks are regulated.	The RFA recommended that RCRA Phase II soil samples be collected where USTs had been removed at Buildings 100 and 504. It was also recommended that the USTs located at Building 224 be integrity tested, and if leaks were detected, soil samples be collected. The removal actions have been coordinated with the WV DEP UST Unit and Office of Environmental Enforcement. As long as the WV DEP UST Unit provides this oversight, the other agencies agreed that no further action is required for this AOC under the IR Program. Groundwater contamination detected in this area will be considered in conducting investigations and remedial actions under the IR Program.
AOC B, PCB Transformers Storage Area	D1, east of Bldg. 157	Concrete pad measuring approximately 20 feet by 30 feet. This unit served as a staging area for transformers which were designated for reuse at the facility. All transformers were removed from the area in 1991 and 1992.	Further investigative action is planned for this SWMU.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC C, Condensate Discharge Area	D8, Bldg. 105	An earthen area, partially vegetated, which measures approximately 4 feet by 5 feet. A pipe extending from Building 105 discharged a warm liquid leaving a reddish-brown residue. According to the facility, this color is due to iron oxide from the iron condensate piping.	The RFA recommended that soil samples be collected from around the unit. The analytical data from these samples indicated that the condensate comes from steam generated in the boilers at Building 344. The agencies agreed that no further actions are required at this AOC since the condensate discharge will be regulated as Class 5 injection wells or under the NPDES for the facility. No further action is planned for this AOC.
AOC D, Building 181 Pit	D8, Bldg. 181	Round, vertical, below-grade terracotta pipe located near Building 181, which appeared to be a possible discharge outlet. There was no historical information regarding this unit.	The RFA recommended that the integrity of the pit be tested, and if unsound, soil samples be collected around the pit. Documentation and visual inspection of the "pit" by the agencies determined that the "pit" was a manhole for a sewer line to a now abandoned septic tank and no cracks or evidence of leaking was observed. Therefore, the agencies agreed that no further action was required for this AOC providing that the septic tank and drainage field be included as part of SWMU 26 investigation. No further action is planned for this AOC.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC E, Above Ground Storage Tanks Spills Area	D7, Bldg. 344	During and EPA inspection, an oil spill was noted within the diked area at the above-ground tank farm located approximately 100 feet west of Bldg. 344. No further details were provided.	The RFA suggested that a sampling and monitoring program be implemented. ABL has already completed work (with EPA Region III concurrence) to remove contamination from the area. For this reason, the agencies have agreed that no further action is required for this AOC. No further action is planned for this AOC.
AOC F, Acid Neutralization Pit (This AOC is IR Site 9)	D7, near Bldg. 344	Served as a contingency discharge area for sulfuric acid from a nearby storage tank. In August 1992, the facility replaced the sulfuric acid tank with a self-contained tank; during the replacement operation, a release of approximately 600 gallons of sulfuric acid occurred. The release was neutralized and reported to the National Response Center. The pit was backfilled in late 1992 and no contamination was found.	The RFA recommended that soil samples be collected from the pit area and between the pit area and the drainage ditch. Following the collection of samples and an inspection by the WV DEP, the agencies agreed that no further action was required for this AOC. No further action is planned for IR Site 9.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC G, X Range Area	D11	Area is a static test firing range for rocket motors and igniters that are produced at ABL. This unit manages explosive residuals, which are generated as a result of the rocket motor and igniter testing procedures. Propellants may contain AP, aluminum, NG, nitrate esters, NC, RDX, and HMX as primary ingredients. Firing has lead to erosion of the hillside, and residues from fired materials may have reached the soil. Occasionally, rocket motors being tested explode; burning propellant and motor parts are discharged onto the hillside generating small fires.	The RFA recommended that soil samples be collected n the vicinity of test firing bays at Buildings 77, 193, 194, and 242. Further action is planned for this AOC.
AOC H, Rocket Motor Test Area	500 Area	.50-caliber bullets are fired into anchored rocket motors for testing in this area. Motors are also tested for flammability in this area by placing them in bonfires. The unit manages explosive residuals, which are generated as a result of the rocket motor testing procedures. The propellants and explosives include HMX and RDX. Residues can be washed by stormwater runoff through a swale to the Sensitivity Test Area Pond, which flows to the North Branch of the Potomac River.	The RFA recommended that soil samples be collected from around the concrete pads and tunnel. Further action is planned for this AOC.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC I, Sensitivity Test Area and Pond (This AOC includes IR Site 6)	500 Area	The insensitive munitions test area is located west of the pond. Since 1989, .50 caliber bullet impact testing and flammability testing of rocket motors have been conducted in this area. This unit includes a pond, which serves as a catch basin for runoff from the sensitivity area. The unit manages explosive residuals transported by stormwater runoff from this area; water from this pond would flow to the North Branch of the Potomac River.	The RFA recommended confirmatory surface water sampling be conducted at the pond. In addition, it was recommended that sediment samples be collected. Further action is planned for this AOC.
AOC J, A and B Ranges	D1, Bldg. 3	This unit consists of two-subscale rocket motor static test firing ranges, which were used from the 1940s to the 1970s. These ranges received propellant residue as a result of rocket motor test firing operations.	No further action is planned for this AOC.
AOC K, C Range	D6, Bldg. 4	This unit was used for test firing of .50-caliber machine gun ammunition during World War II. Bullets were fired into a sand filled backstop (Building 43) during testing operations. The composition of the bullets is not known. The facility stated AIt must be assumed that all projectiles hit a backstop and were contained. Sand from this backstop has been removed and its disposition is not known. Excavations in the area have not shown evidence of projectiles as were found in connection with H Range.≡	Further action is planned for this AOC.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
AOC L, H Range	D8, north of Bldg. 275	The unit is believed to have been used as a mortar testing range during World War II. The ballistics characteristics of mortar propellant were tested by firing the materials toward the hillside. This range potentially received propellant and explosive constituents during testing operations.	No further action is planned for this AOC.
AOC M, Solid Waste Landfill	D3	Established during the October 22, 1997 meeting.	Based on the October 22, 1997 meeting, further action is planned for this AOC.
AOC N, Building 167 SWMUs	D2, Building 167	Established during the October 22, 1997 meeting.	Based on the October 22, 1997 meeting, further action is planned for this AOC.
AOC O, Impact Area from Ranges F, G, and H	D11	Established during the October 22, 1997 meeting.	Based on the October 22, 1997 meeting, further action is planned for this AOC.
IR Site 1 - Northern Riverside Waste Disposal Area	D3	See SWMUs 1, 6, 7, 8, 11, 20, and 22C and 22D descriptions	1996 Actions: RI; Focused FS for Groundwater; and Phase I Aquifer Testing 1997 Actions: Groundwater remedial design and soil FS in process A ROD was signed for groundwater remediation on April 1997. Construction of a groundwater treatment plant was completed and has been operational since September 1998. Based on the May 1999 meeting, further action is planned for soil at IR Site 1.
IR Site 2 - Previous Burning Ground (1942 – 1949)	D8, D9	See SWMU 4 description	1996 Actions: RI, Phase II RI No further action is planned for this IR Site.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
IR Site 3 - Previous Burning Ground (1950 – 1958)	D8	See SWMU 5 description	1996 Actions: RI, Phase II RI No further action is planned for this IR Site.
IR Sites 4A and 4B – Spent Photographic Developing Solutions Disposal Sites	D9, adjacent to Bldg. 181; D1 adjacent to Bldg. 231	See SWMUs 18 and 19 descriptions	Last Actions: Interim RI (October 1989) 1996 Actions: Phase II RI (August 1996) No further action is planned for IR Site 4A; further action is planned for IR Site 4B.
IR Site 5 - Inert Landfill	South of Plant 1	See SWMU 9 description	1996 and 1997 Actions: RI, Focused FS for Landfill Contents and Surface Soil, Phase I Aquifer Testing, Focused FS for Groundwater; Phase II RI; Landfill construction and design; Groundwater monitoring A ROD was signed for soil remediation on January 1997. Construction of a landfill cap was completed October 1997. Further action is planned for groundwater at IR Site.
IR Site 6 - Sensitivity Test Area Surface Water Impoundment	500 Area	See AOC I description	Last Actions: Interim RI (October 1989) Further action is planned for the IR Site.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
IR Site 7 - Beryllium Landfill	Off of Route 956	See SWMU 10 description	1994 Actions: Pit was excavated 1996 Actions: RI and EE/CA 1997 Actions: Contaminated wastes and soil were removed for off-site disposal Further action is planned for the IR Site.
IR Site 8 - Explosives Wastewater Sumps/Catch Basin	Throughout the facility (D1, D2, D5, D6, D8, D11)	See SWMU 37 description	The IAS recommended no further action at this site. No actions have been taken to date. No further action is planned for this IR Site.
IR Site 9 (AOC F) - Former Acid Disposal Pit	D7	Served as a contingency discharge area for sulfuric acid from a nearby storage tank. In August 1992, the facility replaced the sulfuric acid tank with a self-contained tank; during the replacement operation, a release of approximately 600 gallons of sulfuric acid occurred. The release was neutralized and reported to the National Response Center. The pit was backfilled in late 1992 and no contamination was found.	The IAS recommended no further action at this site. No actions have been taken to date. No further action is planned for this IR Site.

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

Name	Location	Description and Wastes Managed	Status (Actions Taken and/or Reason Removed from List)
IR Site 10 – Contaminant Plume Thought to Originate Near Building 157	D1, D8	TCE has been detected in a plume originating in Subarea D1. A potential source is believed to be from a still that operated adjacent to Building 157.	1996 Actions: RI, Phase I Aquifer Testing, Focused FS for Soil and Groundwater; Phase II RI 1997 Actions: Phase II aquifer testing at Site 10 A ROD was signed for groundwater remediation on August 1998. Construction of a groundwater treatment plant was completed and has been operational since March 1999. Based on the May 1999 meeting, further action is planned for soil at IR Site 1. Further action is planned for this IR Site.
IR Site 11 - Building 215 (F-Well)	D2	An 8-inch diameter production well never used due to poor production. Well was uncovered during demolition of Building 215. Petroleum hydrocarbons and solvents found in well.	1996 Actions: Advanced Site Inspection 1997 Actions: RI Further action is planned for this IR Site.

Notes:

ABL = Allegany Ballistics Laboratory
1,1,1-TCA = 1,1,1-trichloroethane
TCE = Trichloroethene
HMX = Octahydro-1, 3, 5, 7-tetranitro-1, 3, 5, 7,-tetrazocine
TCL = Target Compound List
VOC = Volatile Organic Compounds
NA = Not Available
NG = Nitroglycerin
ppb = Parts per billion
ppm = Parts per million
UST = Underground Storage Tank
RFI = RCRA Facility Inspection

TABLE A-1 (Continued)

SWMU, AOC, AND IR SITE DESCRIPTION AND STATUS
ALLEGANY BALLISTICS LABORATORY
ROCKET CENTER, WEST VIRGINIA

RDX = Hexahydro-1, 3, 5-trinitro-1, 3, 5-triazine
PCE = Tetrachloroethene
PCB = Polychlorinated Biphenyls
MEK = Methyl Ethyl Ketone
MIBK = Methyl Isobutyl Ketone
NC = Nitrocellulose
AP = Ammonium perchlorate
RFA = RCRA Facility Agreement
BTEX = Benzene, Toluene, Ethylbenene, Xylenes
TPH = Total Petroleum Hydrocarbon
ROD = Record of Decision
RBC = Risk Based Concentration

* It should be noted that the Phase I RFI is a "Draft" document which has not been approved as an RFI by the regulatory agencies.

Attachment (2)

Environmental Protection Lease Provisions

1. The Lease must 1) provide notice that the Premises are part of real property that has been designated by the United States Environmental Protection Agency (EPA) as a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601, *et seq.*, as amended; 2) indicate that the Government has provided the Lessee a copy of the ABL Federal Facility Agreement (FFA) entered into by EPA, the West Virginia Department of Environmental Protection and the Navy and will provide the Lessee any amendments thereto; and 3) indicate that if there is a conflict between the Lease and the ABL FFA regarding Navy obligations or use of the Premises, the terms of the FFA shall govern and the Navy may act to ensure compliance with the terms of the FFA. NAVSEA should provide the Lessee with a copy of the FFA and any future amendments thereto.

2. The Lease must provide that the Lessee will not conduct or allow to be conducted on the Premises any operations or make or allow to be made any alterations that would unreasonably interfere with or otherwise restrict the actions of the Navy, EPA or WVDEP, or their respective contractors, necessary to fulfill the terms of the FFA, the requirements of the Navy Installation Restoration Program or any other environmental investigatory or response requirements.

3. The Lease must provide that the Lessee will not undertake any alterations, additions, excavations, improvements to, installations upon or otherwise modify or alter the areas of the Premises associated with the Installation Restoration Program without written approval by the Navy Remedial Project Manager for ABL.

4. The Lease must provide that upon being provided reasonable advance notice by the Government, the Lessee will not interfere with the ability of the Government, its agents or contractors to establish and maintain, for the purposes of future environmental investigations and response or remedial activities, certain designated areas on the Premises for, but not limited to, monitoring and response or remediation, well sites and related sampling stations, decontamination facilities and treatability study sites. The Lease also must provide that the Government may establish secured areas to allow for the initiation and completion of all necessary response or remedial activities to address contaminated areas on the Premises. The Lease may provide that the Government will use its best efforts to establish such designated or secured areas in non-intrusive portions of the Premises where practicable and that the Government will use its best efforts not to interfere with the Lessee's use of the Premises.

5. The Lease must provide the authority for the Government, EPA and WVDEP, and their officers, agents, employees, contractors and subcontractors, upon reasonable notice to the Lessee, to enter upon the Premises for the purposes enumerated below and for such other purposes consistent with the provisions of the FFA and the

requirements of the Navy Installation Restoration Program: 1) to conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, testpitting, testing soil borings and other activities related to the DoN Installation Restoration Program and the FFA; 2) to inspect field activities of Government and its contractors and subcontractors in implementing the Installation Restoration Program and the FFA; 3) to conduct any test or survey required by EPA or WVDEP related to the implementation of the Installation Restoration Program and the FFA or environmental conditions at the Premises or to verify any data submitted to EPA or WVDEP by the Government relating to such conditions; or 4) to construct, operate, maintain or undertake any other response or remedial action as required or necessary under the Installation Restoration Program and the FFA, including but not limited to monitoring wells, pumping wells and treatment facilities.

6. The Lease must provide that the Lessee will comply with the provisions of any health or safety plan in effect under the Installation Restoration Program or the FFA during the course of any of the above-described actions.

7. The Lease must provide that the Lessee will notify the Government in writing within 30 days after confirming the existence of any previously unidentified environmental condition at the Premises resulting from past Government activities that suggests a response action is necessary, or, within 30 days after receiving notice of a claim by Federal, State or local regulators, or other third parties, of the existence of any condition at the Premises that suggests a response action is necessary.

8. The Lease must provide that if the Lessee or any sublessee is served with a complaint or written notice of a claim by Federal, State or local regulators, the served party will provide the Government with a copy of such document no later than 15 days following service of such document; furnish the Government copies of pertinent papers the Lessee and any sublessee receives; and provide, upon written request of the Government, reasonable access to the records and personnel of the Lessee and any sublessee for purposes of defending or resolving the need for additional action.

9. The Lease must provide that in the event that an environmental condition is discovered on the Premises that creates, in the Government's determination, an imminent and substantial endangerment to human health or the environment that has not been and cannot be abated or otherwise adequately addressed, and notwithstanding any other termination rights and procedures contained in the Lease, at the Government's option the Lease may be terminated as to the areas of the Premises affected by such condition, and that the Lessee will vacate, or require any sublessee to vacate, the subject areas of the Premises immediately upon notice from the Government of the existence of such a condition and the requirement to vacate the subject areas.

10. The Lease must provide that in the event of any sublease or assignment of this Lease, the Lessee will provide to the Government and EPA by certified mail a copy of the agreement or sublease of the Premises (as the case may be) within 14 calendar days

after the effective date of such transaction. The Lessee may delete the financial terms and any other proprietary information from the copy of any agreement of sublease furnished pursuant to this condition.

11. The Lease must provide that notwithstanding any other rights granted in the Lease, the Lessee's use of the Premises must be consistent with any property use restrictions identified in existing or future CERCLA Records of Decision (RoDs) for ABL issued by EPA and the Navy. NAVSEA should ensure that the Lessee is provided a copy of all existing and future RODs.

12. Lead-based Paint Conditions

The Lease must include a notice that: 1) the Premises do not contain residential dwellings and are not being leased for residential purposes; 2) the Premises contain buildings built prior to 1978 that may contain lead-based paint; 3) lead from paint, paint chips, and dust can pose health hazards if not managed properly; 4) the Premises may present exposure to lead from lead-based paint that may place young children at risk of developing poisoning; and 5) lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory.

The Lease must include notice that available information concerning known lead-based paint and/or lead based paint hazards, the location of lead-based paint and/or lead-based paint hazards and the condition of painted surfaces is contained in the EBS Report (Baker, 1997) that has been provided to the Lessee. Additionally, NAVSEA should provide the Lessee with a copy of a Federally approved pamphlet on lead poisoning prevention. The Lease must state that the Lessee has been provided a copy of the EBS and pamphlet.

NAVSEA should provide the Lessee the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this Lease, and the Lease should state that this option was offered to the Lessee.

The Lease must prohibit the use of any buildings or structures on the Premises for residential habitation without first obtaining the written consent of the Navy and provide that as a condition of its consent the Navy may require the Lessee to: 1) inspect for the presence of lead-based paint and/or lead-based paint hazards in and around buildings and structures on the Premises; 2) abate and eliminate lead-based paint hazards in accordance with all applicable laws and regulations; 3) comply with the notice and disclosure requirements under applicable Federal and State law; and 4) assume responsibility for any future remediation of lead-based paint found to be necessary on the Premises.

The Lease must state that: 1) the Government assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Lessee, its successors

or assigns, sublessees or to any other person, including members of the general public, arising from or incident to possession and/or use of any portion of the Premises containing lead-based paint as residential housing; 2) the Lessee agrees to indemnify and hold harmless the Government, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgements, costs and attorney's fees arising out of, or in any manner predicated upon, personal injury, death or property damage resulting from, related to, caused by or arising out of the possession and/or use of any portion of the Premises containing lead-based paint as residential housing; 3) the obligations of the Lessee shall survive the expiration or termination of the Lease and any conveyance of the Premises to the Lessee; and 4) the Lessee's obligation shall apply whenever the Government incurs costs or liabilities for actions giving rise to liability related to lead-based paint.

13. Notice of the Presence of Asbestos and Covenant

The Lease must provided notice that: 1) asbestos-containing material (ACM) has been found on the Premises as described in the EBS Report (Baker, 1997); 2) the ACM on the Premises does not currently pose a threat to human health or the environment; and 3) all known friable asbestos that posed a risk to human health has either been removed or encapsulated.

The Lease must include a provision stating that 1) the Lessee will comply with all applicable laws relating to asbestos; 2) the Navy assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Lessee, its successors or assigns, sublessees, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos on the Premises, whether the Lessee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured; and 3) the Lessee agrees to be responsible for any future remediation of asbestos found to be necessary on the Premises.