

Appendix A: Tables

The sample results indicated in the following tables are from the February 2001 sampling rounds conducted during the remedial investigation by EPA (1).

Table 1. Soil Data

The soil samples listed in the table below were surface soil samples collected within zero to six inches of the surface. (mg/Kg unless otherwise indicated).

Sample Location	Contaminant		Comparison Value	
	Substance	Max. level	Concentration	Reference
South Warehouse	Aluminum	26,000 (j)	4000	pica child EMEG
Cafeteria area	Boron	2600	20	pica child EMEG
Baghouse area	Cadmium	25	10	child EMEG
Ball Mill building	Cobalt	95	20	pica child EMEG
Baghouse area	Lead	3300	not available	
between ABI Process bldg.	Vanadium	140	6	pica child EMEG
Baghouse area	Zinc	2700	2000	child EMEG
Perimeter- south	PCB (aroclor 1260)	320,000 µg/kg	not available	
Underground storage tank area	Benzene	19,000(j)	10	CREG

(j) estimated value
pica is the tendency in children to eat non-food items
CREG: Cancer Risk Evaluation Guide
EMEG: Environmental Media Evaluation Guide (ATSDR)

Table 2. Subsurface Soils

Subsurface soil samples were collected at depths of one to ten feet bgs. (all units mg/Kg unless otherwise indicated)

Sample Location	Contaminant		Comparison Value	
	Substance	Max. level	Concentration	Reference
Cafeteria Area	Aluminum	36,000 (j)	4000	pica child EMEG
Baghouse Area	Arsenic	6.9 (j)	0.05	CREG
Ball Mill residue pile	Boron	1,800 (j)	20	pica child EMEG
Ball Mill building	Cadmium	27(j)	10	pica child EMEG
South field, east side	Chromium total	140 (j)	not available	
Between Process Buildings	Cobalt	73.00	20	pica child EMEG
Ball Mill Building	Copper	10,000.00	not available	
Ball Mill Building	Lead	2,400 (j)	not available	
Ball Mill Building	Mercury	0/19	not available	
Residential Area	Thallium	1.60	not available	
Between Process Buildings	Vanadium	150.00	6	pica child EMEG
Ball Mill Buildings	Zinc	22,000.00	20000	child EMEG
Ball Mill Buildings	PCB (aroclor 1260)	320,000µg/kg (j)	not available	
Underground storage tank area	Benzene	19,000µg/kg	10 000 µg/kg	CREG
Underground storage tank area	Toluene	180,000 µg/kg	40 ppm	pica child EMEG

CREG: Cancer Risk Evaluation Guide
 EMEG: Environmental Media Evaluation Guide (ATSDR)
 pica is the tendency in children to eat non-food items

Table 3. Surface Water Data (all units µg/L)

Sample Location	Contaminant		Comparison Value	
	Substance	Max. level	Concentration	Reference
Cedar Creek	Aluminum	5400	50	SMCL
Dunham Creek	Arsenic	2.6 (a)	0.02	CREG
Cedar Creek	Boron	14000	100	child EMEG
Dunham Creek	Iron	5200 (j)	300	SMCL
Cedar Creek	Lead	14	0	MCLG
Dunham Creek	Manganese	1000	50	SMCL

(a) averaged by laboratory
 (j) estimated value
 CREG: Cancer Risk
 EMEG: Environmental Media Evaluation Guide (ATSDR)
 MCLG: Maximum Contaminant Level Goal(EPA)
 SMCL: Secondary Maximum Contaminant Level (EPA)

Table 4. Groundwater Data (all units µg/L)

Sample Location	Contaminant		Comparison Value	
	Substance	Maximum Level	Concentration	Reference
Ball Mill Residue Pile(t)	Boron	110,000.00	100	child EMEG
Perimeter Area (North)(t)	Cobalt	220.00	100	child EMEG
South field, East side(t)	Lead	23.00	15	MCL MCL
Perimeter Area (North)(t)	Manganese	3,600.00	500	child RMEG
Dunham Creek (s)	Mercury	1.1(j)	not available	
Southfield (East side) (s)	Nitrate	46.00 (j)	20.00	Child RMEG
South Field (East side)(t)	Zinc	850 (j)	600.00	pica child EMEG
Cafeteria Area(t)	Benzene	170.00	10.00	CREG
Perimeter (South/Southwest)(t)	Trichloroethylene	10.00	2.00	CREG
Drainage ditch (east side)(s)	Boron	68,000.00	100	child EMEG
Drainage ditch (East)(i)	Boron	71,000.00	100.00	child EMEG
Cedar Creek(i)	Iron	11,000.00	300.00	SDWS
Ball Mill Residue area(i)	Manganese	3,600.00	500.00	child EMEG
Cedar Creek(i)	PCB-1248	3.80	0.50	MCL
Drainage Ditch (East)(d)	Boron	480.00	100.00	child EMEG
South/Southwest Field(d)	Manganese	2,300.00	500.00	child RMEG
Perimeter (West)(d)	Thallium	11.00	0.50	LTHA
Dunham Creek(d)	PCB (aroclor 1260)	6.00	0.05	MCL

(t) temporary monitoring well

(s) shallow monitoring well

(i) intermediate monitoring well

(d) deep monitoring well

(j) estimated value

LTHA: Lifetime Health Advisory for drinking water (EPA)

MCL: Maximum contaminant Level for drinking water (EPA)

SDWS: Secondary Drinking Water Standard (EPA)

Table 5. Sediment Samples (all units mg/Kg unless otherwise indicated)

Sample Location	Contaminant		Comparison Value	
	Substance	Max. level	Concentration	Reference
Dunham Creek	Aluminum	33,000 (j)	2000	pica child EMEG
Dunham Creek	Arsenic	11	0.5	CREG
South Process ditch	Boron	810 (j)	20	pica child EMEG
Cedar Creek	Lead	2700	400	HHRA
Dunham Creek	Vanadium	68	6	pica child EMEG
South Process Ditch	Dieldrin	250µg/kg (n)	3 0µg/kg	HHRA
Cedar Creek	PCB (aroclor 1260)	42,000µg/kg (c)	220µg/kg	HHRA
Northwest Ditch	Benzopyrene	560µg/kg	62 µg/kg	CREG

(c) results confirmed by GCMS

(j) estimated value

(n) presumptive evidence

CREG: Cancer Risk

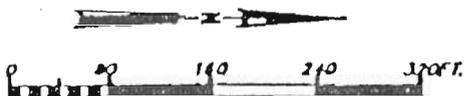
EMEG: Environmental Media Evaluation Guide

HHRA: Human Health Risk Assessment (EPA)

Appendix B: Figures

Figure 1. Site Location Map





LEGEND

- ⊙ 1 - PRODUCTION WELL
 - ⊠ - MONITORING WELL
- NOTE: LOCATIONS ARE APPROXIMATE

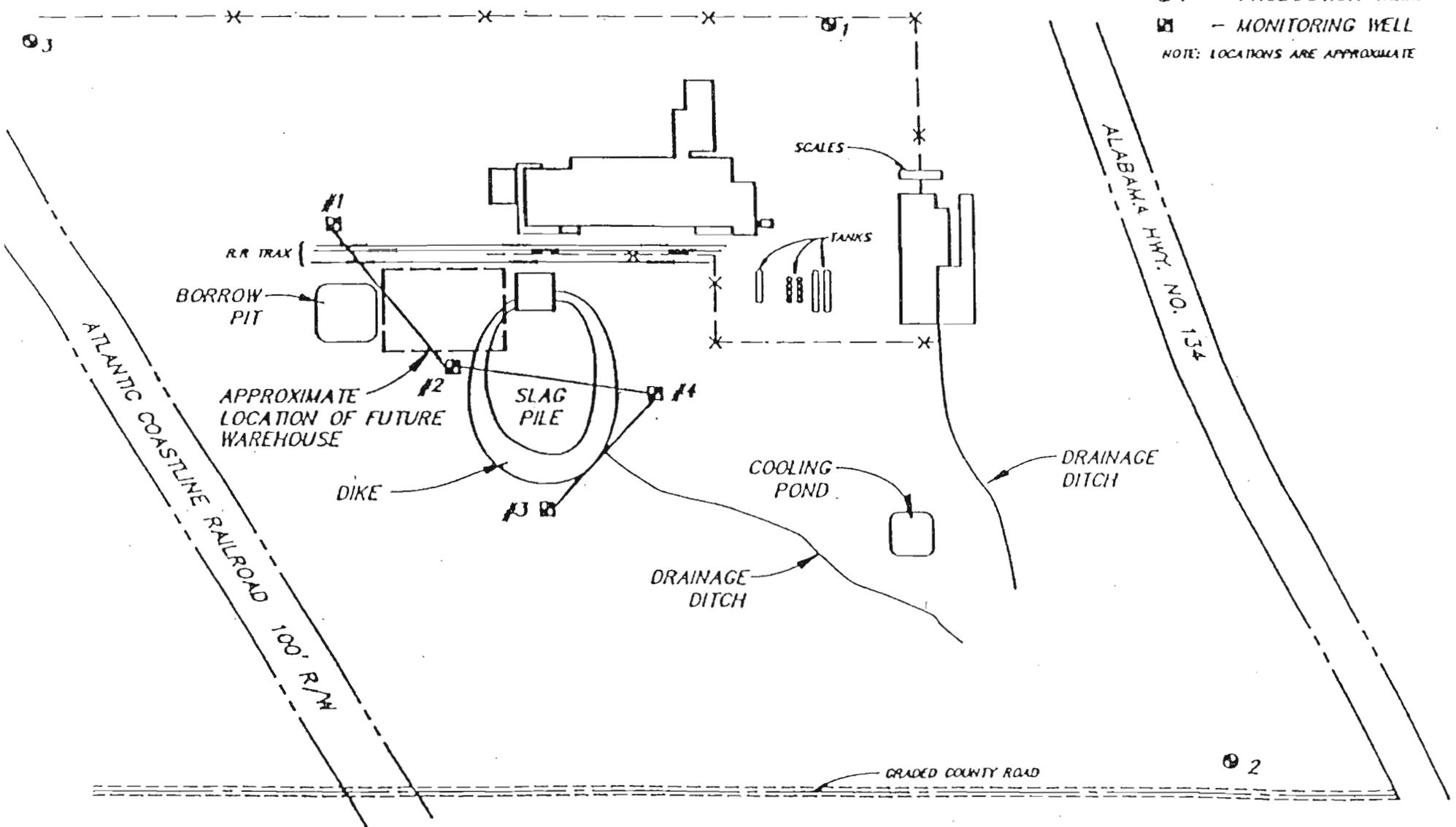


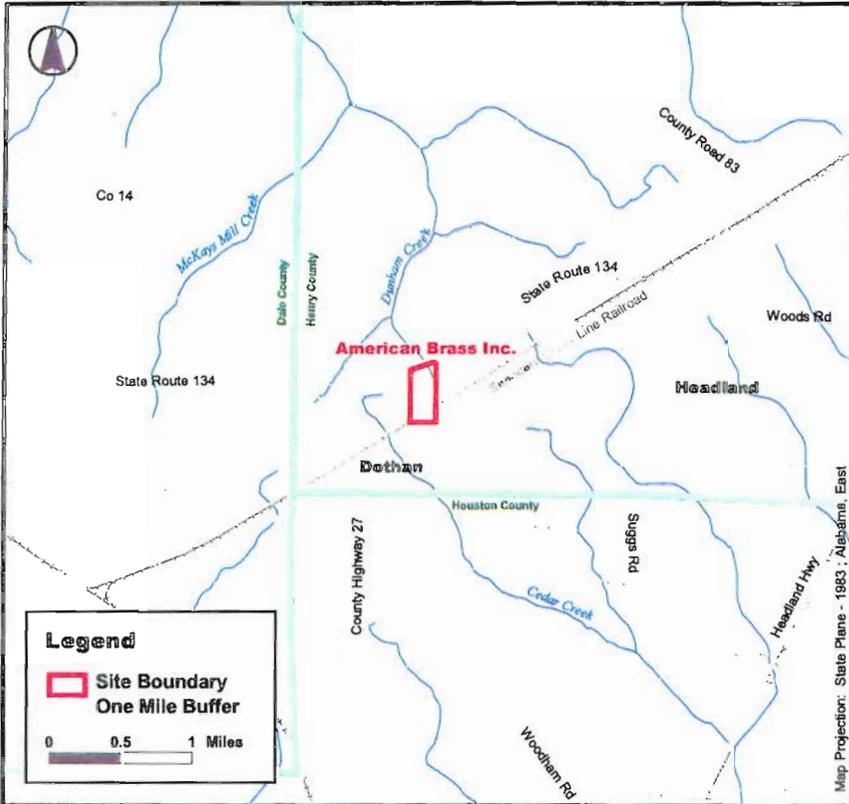
Figure 2

Facility Layout
 American Brass, Inc.
 Headland, AL.

American Brass Inc.

Headland, Alabama

CERCLIS No. ALD981868466



Henry County, Alabama

Demographic Statistics Within One Mile of Site*

Total Population	148
White	128
Black	19
American Indian, Eskimo, Aleut	0
Asian or Pacific Islander	0
Other Race	0
Hispanic Origin	0
Children Aged 6 and Younger	21
Adults Aged 65 and Older	16
Females Aged 15 - 44	32
Total Housing Units	57

Base Map Source: 1995 TIGER/Line Files

Demographics Statistics Source: 1990 US Census
*Calculated using an area-proportion spatial analysis technique

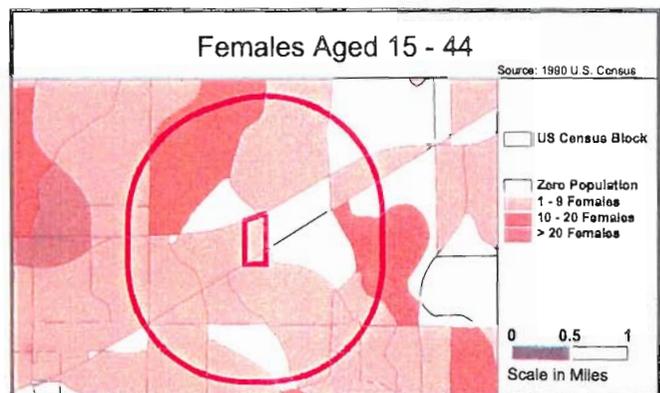
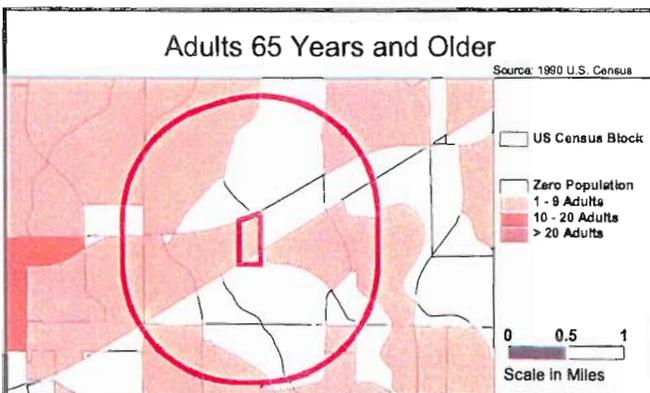
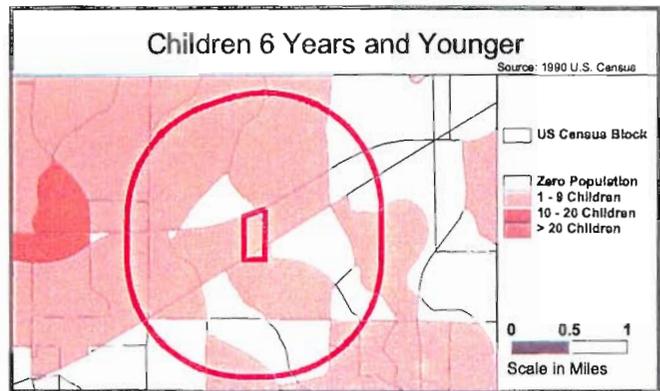
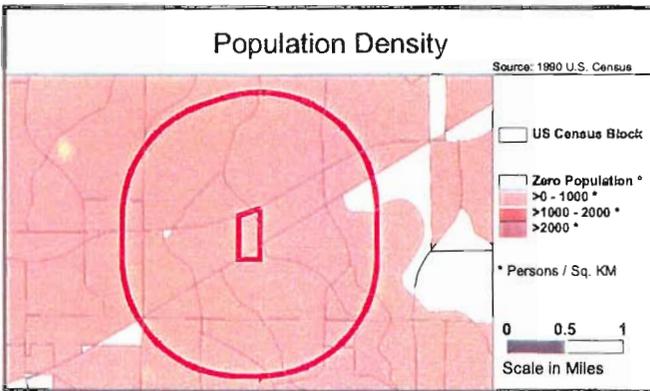


Figure 4. Entrance to ABI from Hwy 134



Figure 5. Sign on front fence



Figure 6. Entrance to ABI from Arnold Faulkner Road



Appendix C: Community Survey

Community Interest:

1. Which topics would you like to learn more about? *(check all that apply)*
 - Chemicals at the American Brass Inc. property
 - Health effects of chemicals at the American Brass Inc. property
 - How to protect my health
 - Other:
2. How do you learn best? *(check all that apply)*
 - Pamphlets English
 - Newsletters Other language:
 - Technical documents Education level:
 - Small group discussions Special needs:
 - Lecture/Presentation
 - Other:
3. Are you concerned about the chemicals at the American Brass Inc. property?
 - Yes *(list or describe concerns below)*
 - No

Please describe any concerns you might have: _____

4. What is the best way for us to notify you about public availability sessions?
 - Letters Newspapers *(paper/section)*
 - Radio *(station/time)* _____ TV *(station/show)*
 - Public notices *(where)*:
 - Other:
5. Where would you like to meet?
 - Headland _____ School Blanche R Solomon Memorial Library
 - Headland Health Department Headland City Hall
 - Other public buildings:
6. When are the best times for you to attend future meetings?

	Morning	Afternoon	Evening
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

Appendix D: Glossary

ATSDR Plain Language Glossary of Environmental Health Terms

Absorption: How a chemical enters a person's blood after the chemical has been swallowed, has come into contact with the skin, or has been breathed in.

Adverse Health Effect:

A change in body function or the structures of cells that can lead to disease or health problems.

ATSDR: The Agency for **T**oxic **S**ubstances and **D**isease **R**egistry. ATSDR is a federal health agency in Atlanta, Georgia that deals with hazardous substance and waste site issues. ATSDR gives people information about harmful chemicals in their environment and tells people how to protect themselves from coming into contact with chemicals.

Cancer: A group of diseases which occur when cells in the body become abnormal and grow, or multiply, out of control

Carcinogen: Any substance shown to cause tumors or cancer in experimental studies.

CERCLA: See **C**omprehensive **E**nvironmental **R**esponse, **C**ompensation, and **L**iability **A**ct.

Chronic Exposure: A contact with a substance or chemical that happens over a long period of time. ATSDR considers exposures of more than one year to be *chronic*.

Completed Exposure Pathway:

See **Exposure Pathway**.

Comparison Value: (CVs)

Concentrations or the amount of substances in air, water, food, and soil that are unlikely, upon exposure, to cause adverse health effects. Comparison values are used by health assessors to select which substances and environmental media (air, water, food and soil) need additional evaluation while health concerns or effects are investigated.

Comprehensive Environmental Response, Compensation, and Liability

- Act (CERCLA):** CERCLA was put into place in 1980. It is also known as **Superfund**. This act concerns releases of hazardous substances into the environment, and the cleanup of these substances and hazardous waste sites. ATSDR was created by this act and is responsible for looking into the health issues related to hazardous waste sites.
- Concern:** A belief or worry that chemicals in the environment might cause harm to people.
- Concentration:** How much or the amount of a substance present in a certain amount of soil, water, air, or food.
- Contaminant:** See **Environmental Contaminant**.
- Dermal Contact:** A chemical getting onto your skin. (see **Route of Exposure**).
- Dose:** The amount of a substance to which a person may be exposed, usually on a daily basis. Dose is often explained as the amount of a substance(s) per body weight per day.
- Duration:** The amount of time (days, months, years) that a person is exposed to a chemical.
- Environmental Contaminant:** A substance (chemical) that gets into a system (person, animal, or the environment) in amounts higher than that found in **Background Level**, or what would be expected.
- Environmental Media:** Usually refers to the air, water, and soil in which chemical of interest are found. Sometimes refers to the plants and animals that are eaten by humans. **Environmental Media** is the second part of an **Exposure Pathway**.
- U.S. Environmental Protection Agency (EPA):** The federal agency that develops and enforces environmental laws to protect the environment and the public's health.

Epidemiology:	The study of the different factors that determine how often, in how many people, and in which people will disease occur.
Exposure:	Coming into contact with a chemical substance.(For the three ways people can come in contact with substances, see Route of Exposure).
Exposure Assessment:	The process of finding the ways people come in contact with chemicals, how often and how long they come in contact with chemicals, and the amounts of chemicals with which they come in contact.
Exposure Pathway:	A description of the way that a chemical moves from its source (where it began) to where and how people can come into contact with (or get exposed to) the chemical. ATSDR defines an exposure pathway as having 5 parts: <ol style="list-style-type: none"> 1. Source of Contamination, 2. Environmental Media and Transport Mechanism, 3. Point of Exposure, 4. Route of Exposure, and 5. Receptor Population. <p>When all 5 parts of an exposure pathway are present, it is called a Completed Exposure Pathway. Each of these five terms is defined in this Glossary.</p>
Frequency:	How often a person is exposed to a chemical over time; for example, every day, once a week, twice a month.
Hazardous Waste:	Substances that have been released or thrown away into the environment, and under certain conditions, could be harmful to people who come into contact with them.
Health Effect:	ATSDR deals only with Adverse Health Effects (see definition in this Glossary).
Indeterminate Public Health Hazard:	The category is used in Public Health Assessment documents for sites where important information is lacking (missing or has not yet been gathered) about site-related chemical exposures.
Ingestion:	Swallowing something, as in eating or drinking. It is a way a chemical can enter your body (See Route of Exposure).

Inhalation:	Breathing. It is a way a chemical can enter your body (See Route of Exposure).
MRL:	Minimal Risk Level. An estimate of daily human exposure by a specified route and length of time -- to a dose of chemical that is likely to be without a measurable risk of adverse, noncancerous effects. An MRL a predictor of adverse health effects.
NPL:	The National Priorities List. (Which is part of Superfund.) A list kept by the U.S. Environmental Protection Agency (EPA) of the most serious, uncontrolled or abandoned hazardous waste sites in the country. An NPL site needs to be cleaned up or is being looked at to see if people can be exposed to chemicals from the site.
No Apparent Public Health Hazard:	The category is used in ATSDR's Public Health Assessment documents for sites where exposure to site-related chemicals may have occurred in the past or is still occurring but the exposures are not at levels expected to cause adverse health effects.
No Public Health Hazard:	The category is used in ATSDR's Public Health Assessment document for sites where there is evidence of an absence of exposure to site-related chemicals.
PHA:	Public Health Assessment. A report or document that looks at chemicals at a hazardous waste site and tells if people could be harmed from coming into contact with those chemicals. The PHA also tells if possible further public health actions are needed.
Point of Exposure:	The place where someone can come into contact with a contaminated environmental medium (air, water, food or soil). For examples: the area of a playground that has contaminated dirt, a contaminated spring used for drinking water, the location where fruits or vegetables are grown in contaminated soil, or the backyard area where someone might breathe contaminated air.
Population:	A group of people living in a certain area; or the number of people in a certain area.

PRP:	Potentially Responsible Party. A company, government or person that is responsible for causing the pollution at a hazardous waste site. PRPs are expected to help pay for the clean up of a site.
Public Health Assessment(s):	See PHA .
Public Health Hazard:	The category is used in PHAs for sites that have certain physical features or evidence of chronic, site-related chemical exposure that could result in adverse health effects.
Public Health Hazard Criteria:	PHA categories given to a site which tell whether people could be harmed by conditions present at the site. Each are defined in the Glossary. The categories are: <ul style="list-style-type: none"> Urgent Public Health Hazard Public Health Hazard Indeterminate Public Health Hazard No Apparent Public Health Hazard No Public Health Hazard
Receptor Population:	People who live or work in the path of one or more chemicals, and who could come into contact with them (See Exposure Pathway).
Reference Dose (RfD):	An estimate, with safety factors (see safety factor) built in, of the daily, life-time exposure of human populations to a possible hazard that is <u>not</u> likely to cause harm to the person.
Route of Exposure:	The way a chemical can get into a person's body. There are three exposure routes: <ul style="list-style-type: none"> - breathing (also called inhalation), - eating or drinking (also called ingestion), and - or getting something on the skin (also called dermal contact).
Safety Factor:	Also called Uncertainty Factor . When scientists don't have enough information to decide if an exposure will cause harm to people, they use safety factors and formulas in place of the information that is not known. These factors and formulas can help determine the amount of a chemical that is <u>not</u> likely to cause harm to people.

SARA:	The Superfund Amendments and Reauthorization Act in 1986 amended CERCLA and expanded the health-related responsibilities of ATSDR. CERCLA and SARA direct ATSDR to look into the health effects from chemical exposures at hazardous waste sites.
Source (of Contamination):	The place where a chemical comes from, such as a landfill, pond, creek, incinerator, tank,, or drum. Contaminant source is the first part of an Exposure Pathway
Superfund Site:	See NPL .
Survey:	A way to collect information or data from a group of people (population). Surveys can be done by phone, mail, or in person. ATSDR cannot do surveys of more than nine people without approval from the U.S. Department of Health and Human Services.
Toxic:	Harmful. Any substance or chemical can be toxic at a certain dose (amount). The dose is what determines the potential harm of a chemical and whether it would cause someone to get sick.
Toxicology:	The study of the harmful effects of chemicals on humans or animals.
Tumor:	Abnormal growth of tissue or cells that have formed a lump or mass.
Urgent Public Health Hazard:	This category is used in ATSDR's Public Health Assessment documents for sites that have certain physical features or evidence of short-term (less than 1 year), site-related chemical exposure that could result in adverse health effects and require quick intervention to stop people from being exposed.

Appendix E: Comments

Comments

A comment period (January 6, 2003 through March 31, 2003) was held for this document. Responses were few and are addressed below.

1. Page 7, "Summary", 1st paragraph: Text states the "previously posted warning signs are no longer in place." In July 2002, EPA purchased a new warning sign with the applicable EPA contact information and the city of Headland posted this sign on the front fence facing Highway 134. EPA has made contact with the site owner, the Headland Industrial Development Board, regarding the potential physical dangers from trespassers, particularly in light of the graffiti seen on the building in July 2002. The City and County have expressed their intention to step up police patrols of the site to discourage trespassing. With that said, on January 9, 2003, I [C. Thompson, EPA] received a call from Michelle Watson with the Headland Observer newspaper, who stated that the sign was down as of yesterday, and might have been blown down in a Christmas Eve storm. I have inquired to the City and the Headland Industrial Development Board as to the whereabouts and condition of the sign.

A visit to the site was made in July 2002. At that time no signs were posted. During a subsequent conversation with an EPA representative it was mentioned that posted signs had once again been removed. A follow-up call was made to the Houston County Health Department - Environmental division requesting an update on postings at the site. The county environmentalist drove by the site in April 2003, and noted that a "Danger – Keep Out" sign was posted as well as the placement of concrete barriers at the front entrance prohibiting entry onto the site. There was no mention of concrete barriers at other entrances onto the site. The reference to postings at this site has been changed in the narrative.

2. Page 8: ADPH recommends that the property should be restricted and warning signs should be posted until ABI is fully remediated. The Department [ADEM] understands that the US Region IV Environmental Protection Agency (EPA) and the City of Headland are in the process of coordinating several security measures, e.g., installation of concrete barriers across the front and the back entrances, that will restrict the public to access the property.

See response above.

3. Page 9. "Site Description and Operational History," 4th paragraph: Regarding the direction of groundwater flow, the site sits on a groundwater divide. Please see Section 2.2.4 of the RI Report, which discusses the Hydrogeology of the site. The Lisbon aquifer may serve as a potable source for the two residences immediately adjacent to the site, but EPA does not have enough information to say this definitively. Instead of stating "the Lisbon Aquifer serves as a source of potable water..." It may be more accurate to state "the Lisbon Aquifer may serve as a source of potable water..."

According to the Site Investigation for American Brass, July 1996, Groundwater Pathway, Section 5.1 Geology, the Lisbon Aquifer ...is a primary private well aquifer for individual residences located near the facility. The Remedial Investigation Report, September 2001, referenced in the above comment states:” Locally the Lisbon aquifer supplies private wells with drinking and irrigation water.”

ADPH realizes that additional research may not support the original assumption that the water supply for the private wells is the Lisbon aquifer. For that reason, the word “may” has been added.

4.. *Next paragraph: The “Headland Industrial Board” should be changed to read the “Headland Industrial Development Board.”*

This correction has been made.

5. *“Demographics, Land Use, and Natural Resources Use,” Page 12, 1st paragraph: Text states that there are no day care facilities within 1 mile of the site. One of the adjacent residences [names withheld] has in the past served as an after-school day care for a small number of children. It is not documented that the residence still serves as a day care.*

It was not documented in the material forwarded to ADPH that any residences within the stated one mile radius of the site served as a day care facility.

The concern over the vicinity of schools and daycare centers to a site is to establish an exposure scenario. An after-school care facility for a small number of relatives or neighborhood children would not in all likelihood create an exposure risk greater than that of children visiting during the normal course of the day.

6. *“ADPH and ATSDR Involvement,” Page 12, last paragraph: Change “public meeting hosted by EPA,” to public availability session hosted by EPA.”*

This change has been made.

7. *“Soil Pathway”:* Throughout this section, mercury is referred to as a constituent which may be a concern at the site. Mercury was detected in a very few of the samples at levels below the screening levels that EPA uses, and as such, is not considered a constituent of concern at the site. However, EPA realizes that ADPH may have different screening levels.’’

Although not considered a constituent of concern by EPA, ATSDR and ADPH consider mercury a contaminant of concern because ATSDR does not have a comparison level for mercury. Any compounds or chemicals found at a site that are listed by ATSDR but have no comparison value are considered contaminants of concern. For ATSDR and ADPH, contaminants of concern require further study to determine if human exposure to the chemical is possible and the health effects associated with possible exposure.

8. *“Soil Pathway”*: Page 15, 1st paragraph, 2nd line: Insert “and waste material” after “soil.” In the 4th line after “feet,” insert “in some areas.” The ball mill residue pile was excavated to different depths across the footprint of the former pile depending on the depth of discolored waste material found but in some areas was excavated to seven feet. In the remainder of the paragraph, the description of post-removal sampling should be clarified to include post removal sampling across the entire site vs. just the ball mill residue pile.

These additions and corrections have been made.

9. *“Surface Water Pathway,”* 2nd paragraph, Page 15: Please check the reference showing Dunham Creek feeding into Blackwood Creek. The RI refers to Dunham Creek leading to Choctawhatchee River, but does not reference Blackwood Creek.

The Preliminary Assessment, July 1995, section 4.1 Hydrologic Setting references Blackwood Creek. This reference has been indicated in the narrative.

10. *“Surface Water Pathway,”* 3rd paragraph, Page 15: Suggest adding “that would be large enough for human consumption” at the end of the paragraph.

This addition has been made.

11. *“Surface Water Pathway,”* 5th paragraph, Page 15: Please clarify the reference for the point referenced in this sentence.

The Site Investigation for ABI, July 1996, Surface Water Pathway, states that the contaminants found in the sediment of Cedar Creek at Geiger Road were barium, chromium, and zinc. The levels of these contaminants were below the screening values established by ATSDR. Under Section 6.2 Targets, a reference is made to the “Statement of Fish Consumption.”

Paragraph five has been changed to read “...the levels of contaminants in the surface water and sediments were below ATSDR screening values.”

12. *“Groundwater Pathway,”* Page 16, 1st paragraph, 2nd sentence: Please see comment #2.

Please see response to comment#2. The addition has been made to the referenced paragraph.

13. *“Groundwater Pathway,”* Page 16, 2nd paragraph: These monitoring wells were installed during the RCRA closure of the slag pile in the late 1980’s, but were properly abandoned during EPA’s groundwater investigation for the RI. Please put a reference date in this paragraph.

ADPH has no record of when the four monitoring wells were installed. The PA Report, 1995, states that samplings done in 1987, 1989, and 1991 showed the presence of lead, chromium, and 1,2,3- Trichlorobenzene. The dates of sampling have been added to the narrative.

14. *“Groundwater Pathway,” 3rd paragraph: “During the remedial action...” should read “During the remedial investigation...”*

This correction has been made.

15. *“Groundwater Pathway,” Page 16, 4th paragraph: Last sentence should include detections of nitrate and ammonia as well.*

Data from the 2000 and 2002 sampling rounds indicate the presence of nitrates and ammonia at levels above the ATSDR screening values. These chemical have been added to the referenced paragraph.

16. *“Sediment Pathway,” 1st paragraph, Page 16: “Bato pond” should be capitalized. Also, another source of contamination found in Bato Pond may be from the debris which fell into the ditches from the trucks carrying waste material to the ball mill residue pile. Visual inspection of these ditches show a direct flow into Bato Pond.*

The referenced section now reads:

A pond that is located outside the foundry borders (east across Arnold Faulkner Road) has been contaminated with what has been presumed to be fly-ash blown down from the furnaces. Debris falling from trucks during the transport of waste material to the ball mill residue pile also contaminated the pond. This process settling pond (Bato pond) has an area of approximately 2500 square feet. . .

17. *Page 18: ADPH indicates that aluminum, arsenic, benzene, beryllium, boron, cadmium, copper, lead, manganese, thallium, toluene, vanadium, zinc, and Aroclor 1260 (PCB) are the contaminants of concern for surface water and groundwater pathways. Please note that nitrate was detected in most of the permanent monitoring wells during the remedial investigation effort under the CERCLA program. Concentrations of nitrate at ABI that exceed the Maximum Contaminant Level (MCL) of 10/mg/L extend into the lower portions of the Lisbon formation.*

While ADPH agrees that nitrates are a contaminant of concern for groundwater, Page 18 of this document refers to the contaminants in the completed pathways for surface soil and surface water. No completed pathway has been established for groundwater. Although it has not been confirmed, the Lisbon Aquifer may be the source for private wells in the area. Information on nitrates has been included in the “Toxicological Evaluation” section of this document.

18. *The April 23, 2001 Draft Remedial Investigation Report for ABI shows boron contamination greater than 10,000 ug/L in the groundwater at the residuum- Lisbon formation interface (e.g., about 40 feet bgs. Concentrations of boron at the residuum-Lisbon formation exceed the Risk Based Concentration (RBC) of 7,300 ug/L . The subject document should include boron and nitrate in the section entitled “Toxicological Evaluation”.*

Boron and nitrates has been added to the” Toxicological Evaluation” section.

19. *“Section B. Other Physical Hazards,” last sentence, Page 26: Please see comment #1 regarding the new warning sign.*

As indicated in the response to comment#1, a new sign and concrete barriers have been placed at the entrance onto the site from Highway 134.

20. *“Conclusions,” Page 29, 2nd paragraph: Text states that “off-site migration appears unlikely.” This statement should be clarified to reflect the contamination in Dunham and Cedar Creeks which has occurred via surface water migration offsite. The RI report shows some of this data. The February 2002 sampling data, however, shows clear evidence of offsite contaminant migration.*

This paragraph refers to hazards to nearby residents of the site. Although contaminants have been found in Dunham and Cedar Creeks, vegetation around these creeks makes them virtually inaccessible to nearby residents. Levels of groundwater contaminants found in the wells of the nearby residents were below the ATSDR screening values. The text in the document may have been misleading and has been changed.