
American Brass, Inc.

Headland, Alabama

EPA Facility ID: ALD981868466

Basins: Lower Chattahoochee and Upper Choctawhatchee

HUCs: 03130004 and 03140201

Executive Summary

American Brass, Inc. (ABI) is an inactive foundry in Headland, Alabama approximately 31 km (19 mi) west of the Chattahoochee River and 9.8 km (6.1 mi) southeast of the Choctawhatchee River. Soil, groundwater, surface water, and sediment at the ABI property have been contaminated with trace elements and PCBs at concentrations that exceed screening guidelines. The Choctawhatchee River is one of the only remaining significant habitats of the federally endangered and state protected Gulf sturgeon, and is therefore of primary concern to NOAA. Sampling has not been conducted downstream from the site to determine the extent of contaminant transport from the ABI property to NOAA trust resources.

Site Background

The American Brass, Inc. (ABI) site property occupies approximately 60 hectares (148 acres) in Headland, Alabama. The Choctawhatchee River flows through Florida and into the Gulf of Mexico approximately 170 km (106 mi) southwest of the ABI site. The Chattahoochee River runs along the Georgia-Alabama border into Florida where it flows into the Gulf of Mexico approximately 190 km (118 mi) south of the ABI property.

ABI operated as a smelter/foundry from May 1977 to December 1992 (ADEM 1995). Scrap metals were melted down at ABI to extract brass, which was then produced into ingots. Two by-products of this process were finely crushed slag and furnace dust. The Ball Mill Stockpile and the Slag Storage Area are two locations where these by-products were stored (Figure 2). The exact location of the Ball Mill Stockpile was not available. Retired furnace bricks, saturated with brass, were stored in the Brick Pile located on the east side of the ABI property (ADEM 1995). In addition to these waste piles, above-ground storage tanks (ASTs) known to store fuel oil and diesel are located at the north end of the ABI property (Figure 2). Cooling water and ash from the ABI furnaces were disposed of in a clay-lined settling pond located at the northeast corner of the ABI property (USEPA 1998). Information was not available on whether one of the two ponds identified in Figure 2 was the disposal pond.

The U.S. Environmental Protection Agency (EPA) prepared a Hazard Ranking System package in 1998 and is currently conducting a Remedial Investigation for the ABI site. The Alabama Department of Environmental Management (ADEM) completed a Site Investigation for ABI in 1996. The U.S. EPA placed the ABI site on the National Priorities List in May 1999 (USEPA 2000).

The primary pathway to transport contaminants from the ABI property to NOAA trust resources is via surface water. A portion of the runoff from the site property flows northwest to a small tributary called Dunham Creek that connects to a larger tributary, Blackwood Creek, approximately 5.0

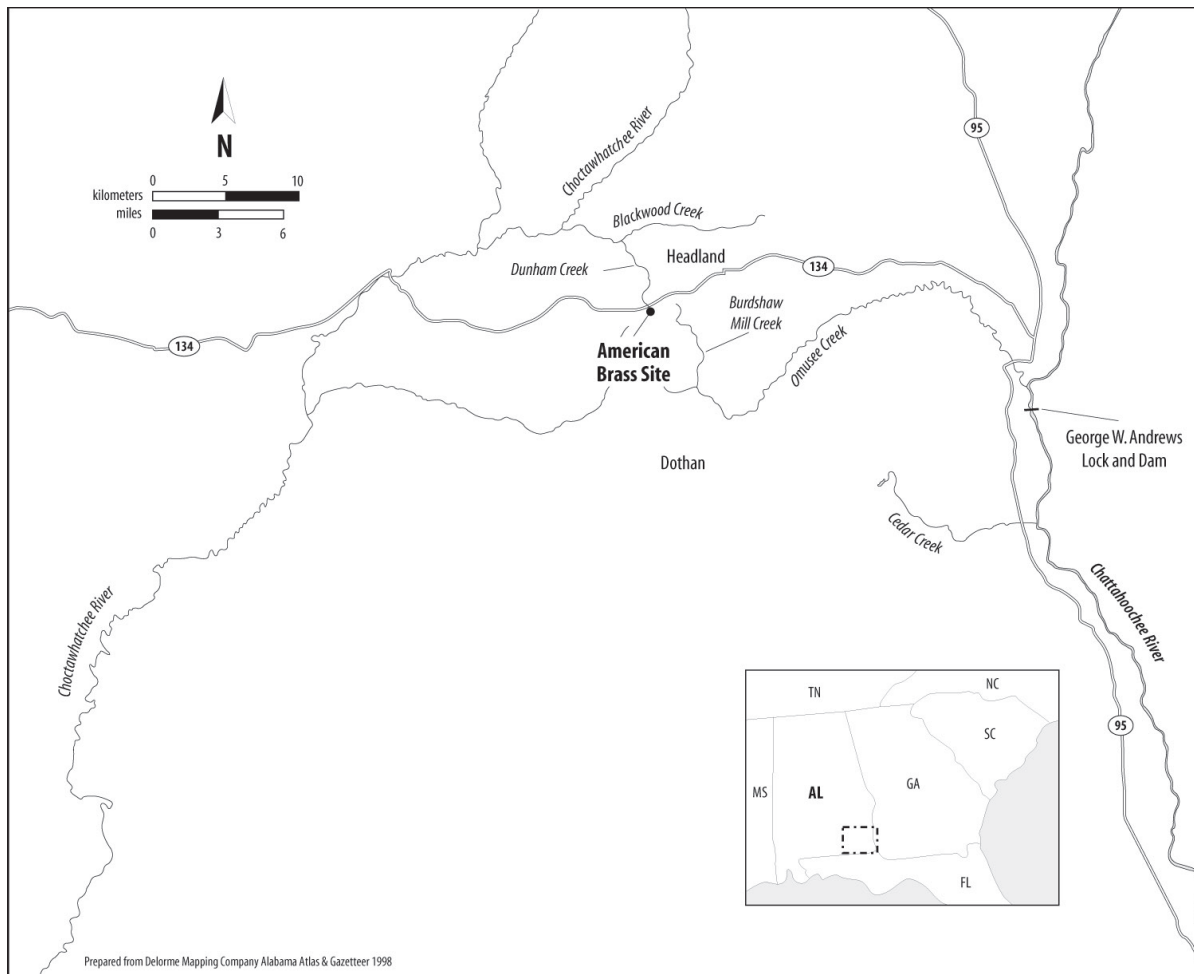


Figure 1. Location of the American Brass Site in Headland, Alabama.

km (3.1 mi) upstream (Figure 1). Blackwood Creek then flows west 4.7 km (2.9 mi) into the Chocotawhatchee River. Another potential surface water pathway is via Burdshaw Mill Creek, which originates approximately 2 km (1 mi) east of the ABI site. Approximately 5 km (3 mi) downstream of its origin, Burdshaw Mill Creek connects with the larger Omusee Creek, which then flows 27.6 km (17.1 mi) into the Chattahoochee River (Figure 1). The secondary pathway to transport contaminants from the ABI site to NOAA trust resources is via groundwater. At the site property groundwater flows east and is encountered between 5.5 and 8.8 m (18 and 29 ft) below ground surface.

NOAA Trust Resources

The American Brass facility lies on a surface water divide of the Chattahoochee and Chocotawhatchee river basins. Within the Chocotawhatchee basin, Dunham and Blackwood creeks are the primary NOAA trust habitats of concern. Very little information was available on these low-gradient, secondary tributary streams.

In the Chocotawhatchee River, the trust species of concern to NOAA are the anadromous Gulf sturgeon and Alabama shad, and the catadromous American eel (Table 1). There are no dams on the Chocotawhatchee River and, because it is one of the few remaining free-flowing rivers in the region, it provides important spawning habitat for the Gulf sturgeon (Weathers 2000; Figure 1). Due to

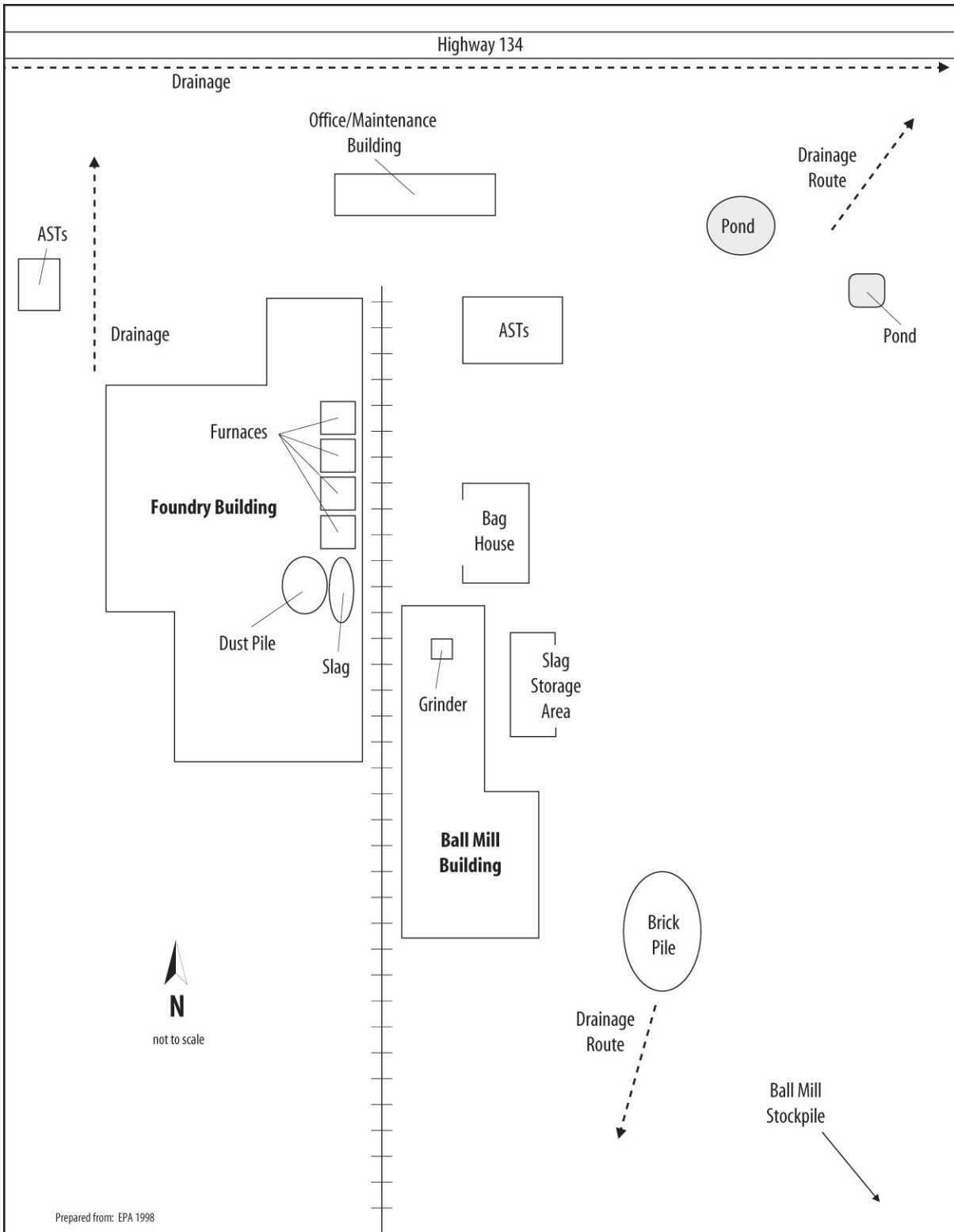


Figure 2. Detail of the American Brass Site.

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Table 1. NOAA trust resources of concern in the Chattahoochee and Choctawhatchee rivers downstream from the American Brass Inc., site property (Scheidegger 1996; Weathers 2000).

Species		Habitat Use			Fisheries	
		Spawning Ground	Nursery Ground	Adult Forage	Comm. Fishery	Recr. Fishery
Common Name	Scientific Name					
ANADROMOUS/CATADROMOUS						
American eel	<i>Anguilla rostrata</i>			◆		
Gulf sturgeon ^{a, b}	<i>Acipenser oxyrinchusdesotoi</i>	◆	◆			
Alabama shad	<i>Alosa alabamae</i>	◆				

a Federally endangered

b Protected by the State of Alabama

loss of habitat, the Gulf sturgeon is listed as federally endangered by the U.S. Fish and Wildlife Service, and is also listed as protected by the State of Alabama (Weathers 2000). Gulf sturgeon have been collected in the Choctawhatchee approximately 40 km (25 mi) downstream from Dunham Creek, but it is not known how much farther upstream they migrate, or whether they would use Blackwood or Dunham creeks (Scheidegger 1996).

Ongoing studies show that Alabama shad enter the Choctawhatchee River each year to spawn (Scheidegger 1996). Information was not available on the use of the river by Alabama shad near the site property or in Blackwood or Dunham creeks. Although specific information on the presence of American eel in the Choctawhatchee and Chattahoochee rivers was unavailable, it is known that they use the rivers in the southern half of Alabama (Scheidegger 1996).

Gulf sturgeon, Alabama shad, and American eel use the lower reaches of the Chattahoochee River, but several large dams restrict upstream migration of anadromous fish (Weathers 2000). Some incidental passage of fish may occur through the locks, but there is no regular upriver movement of fish for spawning. There are no plans for restoring access to upstream habitat in the Chattahoochee River for anadromous fish (Weathers 2000). There is no commercial or recreational fishing for NOAA trust species in the Choctawhatchee or Chattahoochee rivers (Weathers 2000).

Site-Related Contamination

Samples collected at the ABI property found contaminants in soil, groundwater, surface water, and sediment at concentrations that exceeded screening guidelines (Table 2). In April 1996, 10 soil samples, two sediment samples, and five groundwater samples were collected from the ABI site (PRCEM 1996). Five surface water samples and seven sediment samples were collected as part of the Site Inspection prepared by ADEM in August 1996 (ADEM 1996).

At the ABI property the primary contaminants of concern to NOAA are trace elements. Contaminants of secondary concern are polychlorinated biphenyls (PCBs). Table 2 summarizes maximum concentrations, along with the appropriate screening guidelines.

Cadmium, copper, and zinc were detected in soil from the ABI property at concentrations that exceeded screening guidelines by two orders of magnitude (Table 2; PRCEM 1996). A soil sample collected from the Slag Storage Area (Figure 2) was the source of five out of the six maximum concentrations reported for trace elements (Table 2). The maximum concentration of Aroclor 1260

Table 2. The maximum concentrations of contaminants of concern detected in environmental media collected at or near the ABI site from data presented in ADEM (1996) and PRCEM (1996).

Contaminant	Soil (mg/kg)		Ground water	Water (µg/L)		Sediment (mg/kg)	
	Soil	Mean U.S. ^a		Surface water	AWQC ^b	Sediment	TEL ^c
TRACE ELEMENTS							
Cadmium	8.2	0.06	3	3	2.2 ^d	90	0.596
Copper	9,000	17	140	3,000	9 ^d	11,000	35.7
Lead	1,100	16	31	480	2.5 ^d	30,000	35
Nickel	140	13	20	22	52 ^d	69	18
Silver	3.1	0.05	ND	ND	0.12	3.5	1.0 ^e
Zinc	17,000	48	300	4,700	120 ^d	78,000	123.1
PCBs							
Aroclor-1260	7.1	NA	1.5	ND	0.014	ND	0.0341

ND Not detected; detection limit not available.

NA Screening guidelines not available.

a Shacklette and Boerngen (1984), except for cadmium and silver, which represent average concentrations in the earth’s crust from Lindsay (1979).

b National recommended ambient water quality criteria (USEPA 1999). Freshwater chronic criteria presented.

c TEL; Threshold Effects Level; freshwater sediment value. Concentration below which adverse effects were rarely observed (geometric mean of the 15-percent concentration in the effects data set) as compiled by Smith et al. (1996).

d Criterion expressed as a function of total hardness; concentrations shown correspond to hardness of 100 mg/L.

e TEL not available; marine Effects Range-Low (ERL) presented. ERL represents the 10th percentile for the data set in which effects were observed or predicted in studies compiled by Long et al (1995).

(PCB) was detected in soil located near the Bag House (Figure 2; PRCEM 1996). Screening guidelines for PCBs in soil are not available.

Surface water samples collected at the ABI property contained concentrations of copper, lead, and zinc that exceeded the screening guidelines by an order of magnitude (Table 2; ADEM 1996). All the maximum concentrations of trace elements shown in Table 1 were detected in a sample collected from an unnamed creek located near the Ball Mill Stockpile.

Three trace elements found in groundwater at the ABI property were an order of magnitude greater than the screening guidelines. The maximum concentrations of lead and zinc were detected in a monitoring well located north of the Brick Pile (Figure 2; Table 2; PRCEM 1996). The maximum concentration of copper was detected in a residential well approximately 230 m (252 yd) east of the ABI property (Table 2; PRCEM 1996). Aroclor 1260 was detected in the monitoring well located north of the Brick Pile (Figure 2) at a concentration exceeding screening guidelines by an order of magnitude (Table 2).

Six trace elements were detected in sediment at the ABI property at concentrations that exceeded the Threshold Effects Levels (TELs; Table 2). Cadmium, copper, lead, and zinc concentrations were two orders of magnitude greater than the TELs in a sediment sample collected from the settling

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pond (PRCEM 1996). Zinc, lead, and copper were detected at concentrations exceeding the TELs in sediment collected from both Dunham Creek and the unnamed creek adjacent to the Ball Mill Stockpile.

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