



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8960

June 29, 2015

Dr. Stacie M. Propst
732 Montgomery Highway #405
Birmingham, Alabama 35216

Dear Dr. Propst:

In response to your Preliminary Assessment Petition, enclosed you will find a Preliminary Assessment (PA) report that has been completed by the U.S. Environmental Protection Agency. The PA report recommends further evaluation of the site under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) 42 U.S.C., Chapter 103, also known as Superfund.

If you have questions or need additional information from the EPA, please contact Dawn Taylor (404) 562-8575 or Jennifer Wendel (404)562-8799 of my staff.

Sincerely,

A handwritten signature in blue ink, appearing to read "Franklin E. Hill".

Franklin E. Hill, Director
Superfund Division

Enclosure

cc: Phil Davis, ADEM



FINAL PRELIMINARY ASSESSMENT

Pinson Valley Neighborhood Site
Tarrant, Jefferson County, Alabama

EPA ID No. ALN000404036

June 29, 2015

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Figure 1-Location of Pinson Valley Neighborhood and 35th Avenue Superfund site

Figure 2- Features of interest in the Site area

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1.0 INTRODUCTION

This Preliminary Assessment (PA) was prepared by the United States Environmental Protection Agency, in response to a petition submitted pursuant to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) 42 U.S.C. § 9605(d). This petition was addressed to the U.S. Environmental Protection Agency's Region 4 Regional Administrator, Heather McTeer Toney, and dated July 1, 2014 (Ref. 2). The petition specifically requested that the EPA conduct a PA of potential releases of hazardous substances from the ABC Coke Division of Drummond Company, Inc., located at 900 Railroad Avenue in Tarrant, Jefferson County, Alabama, and the impact of those releases on the neighborhoods surrounding the facility (Ref. 2, p. 7, Figure 1, Figure 2). As provided by CERCLA, citizens may petition the EPA to conduct a PA of suspected hazards to public health and the environment resulting from the release or threatened release of hazardous substances. The EPA has carefully reviewed the petition and found that sufficient facts and details were provided to warrant this PA. The site will be assessed as the Pinson Valley Neighborhood site and will be referred to as such (the Site).

A PA is a limited-scope investigation performed by the EPA and/or the states. The PA distinguishes between sites that pose little or no threat to human health and the environment and sites that warrant further investigation. The PA also identifies sites requiring assessment for possible emergency response actions. The primary focus of the PA is the review of existing information about a site and its environs to assess the threats, if any, posed to public health, welfare, or the environment, and to determine if further investigation under CERCLA/SARA is warranted. The scope of the PA includes reviewing information available from federal, state, and local agencies. Using these sources of existing information, a site is then evaluated using the EPA Hazard Ranking System (HRS) criteria to assess the relative threat associated with actual or potential releases of hazardous substances at the site. The EPA has adopted the HRS to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL identifies sites where the EPA may conduct remedial response actions. This report summarizes the findings of the PA for the Pinson Valley Neighborhood site.

2.0 BACKGROUND

The scope of this investigation included a review of available file information and information from the 35th Avenue Superfund site which overlaps portions of the Collegeville, Fairmont and Harriman Park neighborhoods and is located less than one-mile southwest of the Pinson Valley Neighborhood (Figure 1). The EPA has documented the presence of hazardous substances, including; benzo(a)pyrene (BaP) and other polycyclic aromatic hydrocarbons (PAHs); arsenic (As); and, lead (Pb), in residential soils in the Collegeville, Fairmont and Harriman Park neighborhoods above levels which pose a threat to public health (Ref. 3, pp. 2, 3; Figure 1).

2.1 Site Location

The Pinson Valley Neighborhood site is in the western portion of Tarrant, Jefferson County, Alabama, about 1.9 miles northwest of Birmingham-Shuttlesworth International Airport. The geographic coordinates of the Site are set at the address of the first petitioner named in the PA petition, 1056 Overton Avenue, Tarrant, Alabama. The approximate center of the property is 33° 34' 41" N latitude and 86° 46' 42" W longitude (Figure 2; Ref. 2, p. 2).

Jefferson County's climate is humid subtropical with hot summers, mild winters, and precipitation during all months of the year. The average annual rainfall for Tarrant (Birmingham Weather Service Office Airport, #010831), Alabama is 53.59 inches. The average annual temperature is 42°F, with an average summer temperature of 73.6°F and average winter temperature of 52.0°F (Ref. 4).

2.2 Operational and Regulatory History

The Pinson Valley Neighborhood is in close proximity to, and possibly impacted by, releases from the ABC Coke facility. During a search for further information on Tarrant, Alabama, two additional potential source areas were identified: National Cast Iron and Pipe Company and Vulcan Rivet and Bolt Company (Ref. 9; Figure 2).

ABC Coke

The ABC Coke facility's address has been listed as 900 Railroad Avenue, 900 Huntsville Road, 1 Railroad Avenue, and Alabama Street at Huntsville Avenue. It is bordered by the CSX Railroad and industrial areas to the east, the inactive APAC Mid-South limestone quarry to the south, the City of Tarrant Public Works building to the north, Five Mile Creek to the north and northwest, and a sewage disposal plant and a second limestone quarry to the west and southwest respectively. There is a three-foot berm surrounding the entire APAC quarry which separates it from ABC Coke (Figure 2; Ref. 2, p. 2). The quarry to the southwest is owned by Vulcan Materials (Ref. 32). There are two water bodies located within the property boundaries: the middle pond (3 acres) and the upper pond (10 acres). Numerous railroad spurs and buildings occupy the eastern portion of the property (Ref. 5, p. 5; Figure 2).

ABC Coke Division has operated at the facility from 1919 through the present, although the names and ownership have changed hands several times (Ref. 28, pp. 5-13). ABC Coke has also been known as Birmingham Coke and ByProducts Company [or Birmingham By-Products Coke Company (BBCC)]; Alabama By-Products Corporation (ABC); and Drummond Company Inc. (Ref. 28, pp. 5-13).

Coke is the residue from the destructive distillation of coal (Ref. 27, p. 2). BaP is a known contaminant from coke ovens, and arsenic, while also present in local soils, is present at high concentrations in the coal from Birmingham and north Alabama, the same coal used in many of the coke ovens (Refs. 25, p. 3; 33 p. 1; 34). ABC Coke produces foundry coke and furnace coke from three coke oven batteries (Ref. 29, p. 4). The Wilputte battery (#1A) has 78 ovens and produces 75% of the total coke; the two remaining Koppers-Becker batteries (#5 and #6) have 54 ovens and produce the remaining 25% of the coke (Refs. 29, p. 4; 30, p. 57). Coal is placed in the coke batteries, in the absence of air, at a temperature of approximately 2,100 degrees Fahrenheit (Ref. 29, p. 4). The coal breaks down in this destructive distillation process, creating coke oven gas and coke (Ref. 29, p. 4). The volatile products from the coal and coal tar derivatives are recovered and separated in the coke by-products recovery plant (Ref. 29, p. 4). Listed hazardous waste generated in the coke by-products plant and other solid wastes are recycled into the coke ovens using a waste recycling process, called the Kipin process (Ref. 29, p. 4).

ABC Coke receives waste materials, such as tar decanter sludge, for recycling from the coke by-products plant and from facilities in Ohio, New Jersey and Alabama (Ref. 29, p. 4). Further information regarding processes at the ABC Coke facility is located in References 30, pages 4 through 11; 34, pages 57 through 59; and 35, pages 2 through 4.

ABC Coke operates a biological wastewater treatment system, including tanks with secondary containment, an equalization basin, a post-aeration basin and a separate storm water runoff basin, whose discharge to Five Mile Creek is regulated by a National Pollution Discharge and Elimination System (NPDES) permit (Refs. 5, pp. 3, 5-6, 22; 29, p. 17). ABC Coke regularly (at least twice a year) removes all sludge and sediments from these ponds and units, dewateres these materials, and recycles them through its process (Ref. 28, pp. 17-18). An area near Five Mile Creek was used for tar storages, a practice that ended around 1950; coke is stored in this area (Refs. 5, pp. 3, 5-6, 22-23; 32, pp. 16-17). Three coke oven batteries used by ABC Coke use coke oven gas for fuel (Ref. 30, p. 57). Factors affecting emissions from the combustion stack include incomplete combustion in the flues or cracks in the brickwork between an oven chamber and flue (Ref. 30, p. 58). ABC Coke practices periodic silica dusting, the spraying of a silica-containing dust inside an oven before charging it with coal (Ref. 30, pp. 58-59). The dust fuses to the silica brick lining the oven and sealing any small cracks (Ref. 30, pp. 58-59). Repairs to brickwork, jambs, through-walls and end flues are reportedly conducted as needed (Ref. 30, p. 59).

Water is used to quench the glowing coke (Ref. 28, p. 17). The process consumes water and uses up all water internally in the process (Ref. 28, p. 17). The quenching process and the process air emissions are both regulated under 40 C.F.R. §§ 63.7280—63.7352, whose requirements are incorporated into the facility's Title V permit (Ref. 29, p. 17). ABC Coke's air emissions have been regulated by the Jefferson County Department of Health (JCDH) since the mid-1970s (Refs. 28, p. 15; 76, pp. 402-404). A Major Source Operating Permit in 2003 replaced 22 existing permits (Refs. 28, p. 15; 76, pp. 36-37, 49). The 2003 Major Source Operating Permit reduced the emissions sources to 14; this permit was replaced in 2008 (Refs. 28, p. 15; 76, pp. 36-37, 105-107).

In 1980, a CERCLA notification was filed concerning the possible deposition of tar sludge in an onsite landfill at Alabama By-Products (Ref. 5, p. 6-7).

In March 1985, a CERCLA Site Inspection (SI) Report for Alabama By-Products, Inc. was prepared by Environmental Protection Systems, Inc. Five sediment samples were collected during the SI event: (1) a drainage ditch background sample, (2) a ditch sample, (3) a Five Mile Creek background sample, (4) a Five Mile Creek sediment sample, and (5) a sludge composite sample from the equalization basin. The chemicals of concern detected were several PAHs and phenols (nitrophenol, phenanthrene, dinitrocresol, 2-chlorophenol, 4,6-dinitro-o-cresol and 2,4-dichlorophenol). Based on its findings, further action was recommended. (Ref. 5, pp. 15, 18, 26-32).

On November 10, 1993, a Site Inspection Prioritization (SIP) report for the ABC Coke Division of Drummond Corporation was submitted to the EPA by Dynamac Corporation. This report summarized previous assessments of the site and recommended further investigation for ABC Coke, however, the EPA gave a No-Further Remedial Action Necessary (NFRAP) designation to the Site (Ref. 23, pp.1, 15-16).

The EPA conducted two sampling events in support of a Removal Investigation of Five Mile Creek near Tarrant, Alabama from April 23 through 26, 2012, and January 28 through February 1, 2013 (Ref. 6, pp. 12-14). The report determined that “Based on the recreational use of the creek further downstream and surrounding residential areas the contaminated sediments pose a potential direct contact threat to the public and may warrant further investigation under CERCLA (Ref. 6, p. 24).

For the samples taken in the stretch of Five Mile Creek adjacent to and downstream of the ABC Coke facility, arsenic was detected in sediment samples ranging from 8.34 milligrams per kilogram (mg/kg) to 26.7 mg/kg. The EPA Regional 4 Screening Levels for Contaminants in Sediment (EcoSSV) for arsenic is 7.24 mg/kg (Ref. 6, pp. 20, 39-41; Ref. 37). Four sediment samples had the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, naphthalene, phenanthrene, and/or pyrene detected at concentrations above the EcoSSV of 330 micrograms per kilogram ($\mu\text{g/kg}$) (Ref. 6 pp. 20, 39-41; Ref. 37).

Benzo(a)pyrene was detected at concentrations two to three times greater than the residential soil

Removal Management Level (RML) in the overburden soil samples collected on ABC Coke property (Ref. 6, p. 21). The RML for benzo(a)pyrene is 1.5 mg/kg, which is set at 10 times the Regional Soil Screening Level (RSL) (Ref. 35).

Former National Cast Iron and Pipe

The former National Cast Iron and Pipe (NCIP) facility occupied property which is now the City of Tarrant Municipal Complex. A CERCLA Brownfield Site Inspection (BF-SI), dated August 1, 2005, for the Municipal Complex site was identified during a search for information on Tarrant, Alabama (Ref 8). The Municipal Complex is located off of Valley Parkway (Highway 79) and Commerce Way (Ref. 8, p. 3). The inspection and sampling was conducted in July, 2003 (Ref. 8, p. 27). The report states this property was a 16-acre site which consisted of nine lots (790 Elizabeth Avenue, 2500, 2508, 2509, 2515, 2518, 2519, 2528, and 2529 Commerce Way, Tarrant, AL) (Ref. 8, p.4).

In 1913, the NCIP Company acquired the site and adjacent lands. NCIP then constructed a cast and ductile iron foundry to manufacture pipe and fittings for the waterworks industry. In 1938, the name changed due to new ownership to Clow Corporation (Ref. 8, p. 4). The Clow Corporation eventually closed in June 1980 (Ref 10). During its years of operations, the property contained a settling pond and a landfill used to control foundry wastes (Ref 8, p. 4). In 1984, the property was sold to McWane Steel Corporation (McWane Cast Iron). The manufacturing facilities were demolished by McWane leaving only five buildings (Ref 11). In 1986, McWane Corporation donated the site to the City of Tarrant (Ref. 8, p. 4).

During the 2003 BF-SI, five groundwater wells were installed and seven soil borings were completed. Twenty-four (24) composite surficial soil samples, seven (7) sediment samples and seven (7) surface water samples were collected (Ref. 8, pp. 5-12).

Analytical results indicated that arsenic, cadmium, chromium, lead and naphthalene were present above their EPA RSLs for tap water and Alabama Department of Environmental Management (ADEM) drinking water standards in three groundwater samples (Refs. 8, p. 6; 35; 36).

Naphthalene was detected in one sample above its RSL. Soil sample results indicated that lead

exceeded the RSL of 400 mg/kg in all surface and subsurface samples (Refs.8, p. 13; 35). PAHs were detected above RSLs in Boring B-3 between 0 and 13 feet (Ref. 8, p. 13). Seven surface water samples and seven sediment samples were collected from Five Mile Creek – two of which were upstream from the Municipal Complex site (Ref. 8, p. 8). Arsenic was detected in three sediment samples exceeding the EcoSSV (Refs. 8, p. 9; 37). Cyanide was detected in two sediment samples. Polychlorinated bi-phenyls (PCBs) were detected in two sediment samples (Ref. 8, p. 9). The PAHs fluoranthene, pyrene, benzo(a)pyrene benzo(a)anthracene and chrysene were detected in four sediment samples above their EcoSSV (Refs. 8. p. 9; 37)

The BF-SI report determined that environmental sampling of each medium indicated the presence of constituents above the applicable screening values. It also stated that additional sampling may be warranted depending upon future land use (Ref. 8, p. 14). The City of Tarrant is searching for documentation of cleanup activities (Ref. 40). At present, it is not known what happened to any ponds or waste material onsite.

Former Vulcan Rivet and Bolt Company

The former Vulcan Rivet and Bolt Company property is composed of 7.5 acres at 1020 and 1040 Pinson Valley Parkway (Ref. 12, p. 6; Figure 2). The facility manufactured rivets and bolts from 1919 until October 2000 (Ref. 12, p. 8). The property is now owned by the City of Tarrant (Ref. 12, p. 6). The City of Tarrant entered into the State Brownfield - Voluntary Cleanup Program June 9, 2008 (Ref. 12, p.38). A report of the Voluntary Cleanup Closure of the site was submitted to ADEM by MACTEC Engineering and Constructing on May 16, 2011, documenting cleanup actions at the site (Ref. 12).

A Phase I Environmental Assessment of the Vulcan Rivet and Bolt site was conducted in 2005 as part of the Five Mile Creek Greenway Project. This report indicated that the buildings in the south had been used for storage and packaging of finished goods. The central buildings housed the forge and tapping area while the cold forging, wastewater neutralization parts and materials storage area were located in the northern buildings. Wastes from site operations included spent acid containing a combination of heavy metals such as iron, nickel, copper, zinc, chromium, lead

and arsenic, drums of oil and oily material, and general debris. Limited areas of visibly stained surficial soils were apparent around the facility (Ref. 12, p. 9).

A 2006 Phase II Environmental Assessment performed for the Vulcan Rivet and Bolt site indicated that arsenic, lead, iron and manganese were detected in surface soil samples at concentrations which exceeded the RSLs (Refs. 12, pp.11-12, 23-24; 35). Site remediation activities included building demolition and asbestos removal; debris and drum removal; removal of the top 18-inches to two feet of soil in hot-spot locations; and the placement of a geotextile liner and a six-inch compacted clay layer; and site backfilling with clean material. An environmental covenant specified the use of engineering controls to prohibit onsite water well installation, residential and certain commercial uses was also implemented (Ref 12, pp. 17-22, 19).

3.0 GROUNDWATER MIGRATION PATHWAY

3.1 Hydrogeologic Setting

The Pinson Valley Neighborhood site is in the Opossum Valley southeast of the Opossum Valley Fault. The Site is in the outcrop area of the Ketona Dolomite and, in the more hilly terrain of the neighborhoods southwest of Highway 79, the Chepultepec and Copper Ridge Dolomite Formations (Ref 41). The Ketona comprises 400-600 feet of relatively thick-bedded dolomite, while the Copper Ridge and Chepultepec Formations are members of the Knox Group, which ranges up to 2,000 feet in thickness in the Site area (Ref. 42, p. 3). These rock types are susceptible to dissolution by groundwater, with beds that are folded and fractured, further increasing the amount of dissolution and porosity (Ref. 43, p. 13).

The Copper Ridge and Chepultepec Formations, which underlie most of the Site area, are considered good aquifers with well yields in Jefferson County ranging up to 750 gallons/minute (Ref. 44, p. 12). Recharge into the aquifers is very limited, with streams draining the majority of precipitation away. Springs are numerous in the area (Ref. 44, p. 13).

3.2 Ground Water Targets

The only public drinking water supplier within a 4-mile radius of the Site is the Birmingham Water Works Board System No. AL0000738. It uses no groundwater for drinking water. Public drinking water is readily available and the property does not lie within a Wellhead Protection Area. Due to the urban nature of the area, domestic drinking water wells are not expected in the vicinity of the Site. (Ref. 14)

3.3 Ground Water Conclusions

Although groundwater may be impacted by contaminants from the Site, no groundwater for drinking water is being used by the public. Therefore, any potential contamination from the Site would not impact the drinking water for the City of Birmingham.

4.0 SURFACE WATER MIGRATION PATHWAY

4.1 Hydrologic Setting

The Site is located in the Birmingham-Big Canoe Valley District of the Alabama Valley and Ridge Province. Relief is characterized by a series of broad, flat valleys and low, narrow ridges that expose limestones, dolomites, shales, sandstones and cherts. Total relief can be up to 400 feet from the valley floor to ridge top, but is normally less. The Site itself lies 1.5 miles southeast of the Opossum Valley area, south of Sand Mountain. The immediate area is relatively flat in the valley; however, to the east of Tarrant City the terrain becomes rather hilly (Ref. 5, p. 10).

Runoff from the surrounding area drains to Five Mile Creek. Five Mile Creek receives treated wastewater from several neighboring industries. The ABC Coke facility has constructed a dam to pool the water for a process water inlet. This dam was constructed across Five Mile Creek at the NPDES Discharge point. The plant's discharge point is located on the downstream side of the overflow dam. The pump house for process water is upstream of the dam (Ref. 5, pp. 10, 23).

Five Mile Creek has an annual average flow rate of 94.68 cubic feet per second (cfs) at the USGS (02457595) realtime streamflow gauging station near Republic located 8.5 miles

downstream from the ABC Coke plant. The two-year, seven-day low flow value is 19.33 cfs and the 10-year, 7-day low flow value is 15.08 cfs at the USGS (02457595) realtime streamflow gage on Five Mile Creek near Republic (Ref. 16).

4.2 Surface Water Targets

The Site's 15-downstream mile surface water pathway (SWP) is entirely on Five Mile Creek. The Probable Point of Entry (PPE) has been placed at the northwest corner of the ABC Coke property where it drains into Five Mile Creek (Refs. 6, p. 31; 7, p. 2). There are additional drainage systems in the residential area to the east. There appears to be five drainage ditches along the northern portion, the western portion and the southwestern portion of the Pinson Valley Neighborhood (Figure 2).

Five Mile Creek is part of the Warrior River Basin and the Locust Fork. The use classification of Five Mile Creek along the 15-mile SWP downstream of the ABC Coke plant is "Fish & Wildlife" (Ref. 17, p. 5). Although the creek may be used for recreational fishing and swimming within the 15-mile SWP, there is no fish advisory for either Five Mile Creek or Locust Fork (Ref. 23, p. 24). Recreational fishing on Five Mile Creek may be occurring, but has not been verified.

There are no drinking water intakes along the 15-downstream mile SWP (Ref. 14).

Although several wetlands appear to be along the creek adjacent to the site, there are roadways between the creek and wetlands. The closest actual (contiguous) wetland is 9.7 miles downstream from the PPE on Five Mile Creek. There are 0.88 mile of wetlands classified as palustrine forested, broadleaved deciduous (temporarily flooded); 0.07 mile of palustrine emergent, persistent (temporarily flooded) wetlands, and 0.13 mile of palustrine, unconsolidated bottom, excavated wetlands (permanent flooded). In total, there is 1.08 miles of wetlands along the 15-mile SWP (Ref. 21; Figure 4). No list of endangered/threatened species specific to Five Mile Creek could be located (Ref. 20).

4.3. Surface Water Conclusions

Surface water flows into Five Mile Creek from the Site and from drainage from the nearby facilities. There is no surface water intake along the SWP, however, there may be sensitive environments along the SWP. Protected species may utilize portions of the SWP, and there are 1.08 miles of combined wetland frontage. The ABC Coke facility is in the 100-year floodplain and floods frequently (Ref. 18). Historic sampling of the SWP has indicated contamination by heavy metals (including arsenic) and PAH compounds (including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, fluoranthene, and pyrene) (Refs. 6 pp. 20, 39-41; 8, p. 9).

5.0 SOIL EXPOSURE AND AIR MIGRATION PATHWAYS

5.1 Physical Conditions

Surface soil at the Site is a clayey or silty-clay soil with chert fragments, derived from the underlying dolomite, classified as Urban land-Tupelo-Decatur series. The soil is moderately-to-well-drained but only slowly permeable to the underlying rock (Ref. 45, pp.7-8). Surface drainage in the Site area tends to be poor and during periods of heavy rains, the soil becomes saturated and flooding periodically occurs (Ref. 19).

5.2 Soil and Air Targets

The City of Tarrant lies to the east and south of the Site. There are about 1,500 acres associated with the residential and business districts in Tarrant, Alabama. Municipal buildings, three schools and a large residential area are between the Site and Birmingham-Shuttlesworth International Airport to the east and Interstates 20/59 to the south (Figure 2). The schools, daycare and recreational areas identified in the investigative area include: Inglenook School (460 persons), Smart Kids Day Care Academy (30 persons), Tarrant High School (535 persons) and Tarrant Elementary School (407 persons). There are various churches which may have

kindergartens. The schools for Tarrant appear to be clustered around Jefferson Boulevard/Canal Alley (Figure 2).

The 2010 U.S. Census states that the average household size for Tarrant, Alabama, is 2.45 persons; for Birmingham, Alabama, is 2.31 persons; and for Jefferson County, Alabama, is 2.48 persons (Ref 22). According to the PA petition, the population within their area of concern exceeds 8,000 with more than 2,400 children (Ref. 2, p. 7, Figure 2). In addition to residents within the area of concern, workers at the ABC Coke facility and the other identified potential source areas may be exposed to contamination in surface soils.

The Birmingham area has been industrialized since the late 1870s. Prior to air emission regulations, emissions from smoke stacks, other plant processes and open storage areas fell from the facilities onto buildings, soil and gardens in neighboring communities. ABC Coke has been in operation since 1920 resulting in potential off-property depositions for 94 years. Dust and other particles blown from uncovered piles or other, similar ground-level, fugitive emission sources may have also contaminated surface soils in the area of concern. A wind rose diagram provided in the PA petition shows the predominant wind directions at the adjacent Birmingham-Shuttlesworth airport are variable, with the highest average wind speeds from the north and north-east (Ref. 2, p. 8).

The EPA conducted a study called “Assessing Outdoor Air Near Schools” on priority schools in 22 states and two tribal areas for air quality monitoring from August 5, 2009 to November 24, 2009. Tarrant Elementary School was one of four Birmingham, Alabama schools selected as a priority school and was monitored from August 5, 2009 to November 24, 2009 (Ref. 31, pp. 1, 5, 9-10, 64, 65). The studies found levels of coke-related emissions, particularly benzene, arsenic, and BaP, in air samples at levels that pose concern for long-term exposure in the schools (Ref. 31, pp. 7-8, 9-17, 22-23, 66-73). Tarrant Elementary is located 3,273 feet east of ABC Coke (Figure 2).

At the 35th Avenue Superfund site, there have been numerous reports by residents of neighboring industries historically providing waste or byproduct materials to the public for use as fill material in residential yards. It appears this has been a common industry practice over the years in the Birmingham area (Ref. 39).

5.3 Soil Exposure and Air Pathway Conclusions

Historical industry in and around the commercial and residential property in the study area of the Site may have resulted in soil contamination in residences and schools in the Pinson Valley Neighborhood site study area. The results of sampling events conducted at the nearby 35th Avenue Superfund site in 2012 and 2013 revealed elevated concentrations of lead, arsenic, and BaP at concentrations greater than or equal to background concentrations collected from similar underlying geologic areas. (Refs. 3, p. 2; 26, pp. 4-5, 17-19, 194-358; 38). These results, coupled with the proximity of the facilities to the Site, indicate that similar contamination may be found in residential soils in the Pinson Valley Neighborhood.

6.0 SUMMARY AND CONCLUSIONS

The Ground Water Migration Pathway is not a viable pathway because of the lack of targets for the pathway. For the Surface Water Migration Pathway, residents obtain their drinking water from distant surface water intakes. Potentially, residents might use the surface water in the fifteen-mile downstream pathway as a fishery, and/or a recreational swimming outlet. Wetlands border Five Mile Creek downstream of the Site PPE. Analytical results along the pathway indicated elevated concentrations of hazardous substances that could warrant a threat to human health or the environment. For the Soil Exposure Pathway and residential soils, based on data generated by the EPA in the nearby 35th Avenue Superfund site, and the evidence attributing at least a portion of that contamination to releases from the ABC Coke facility, the Soil Exposure pathway is also a concern for the Pinson Valley Neighborhood site. Further evaluation under CERCLA is recommended.

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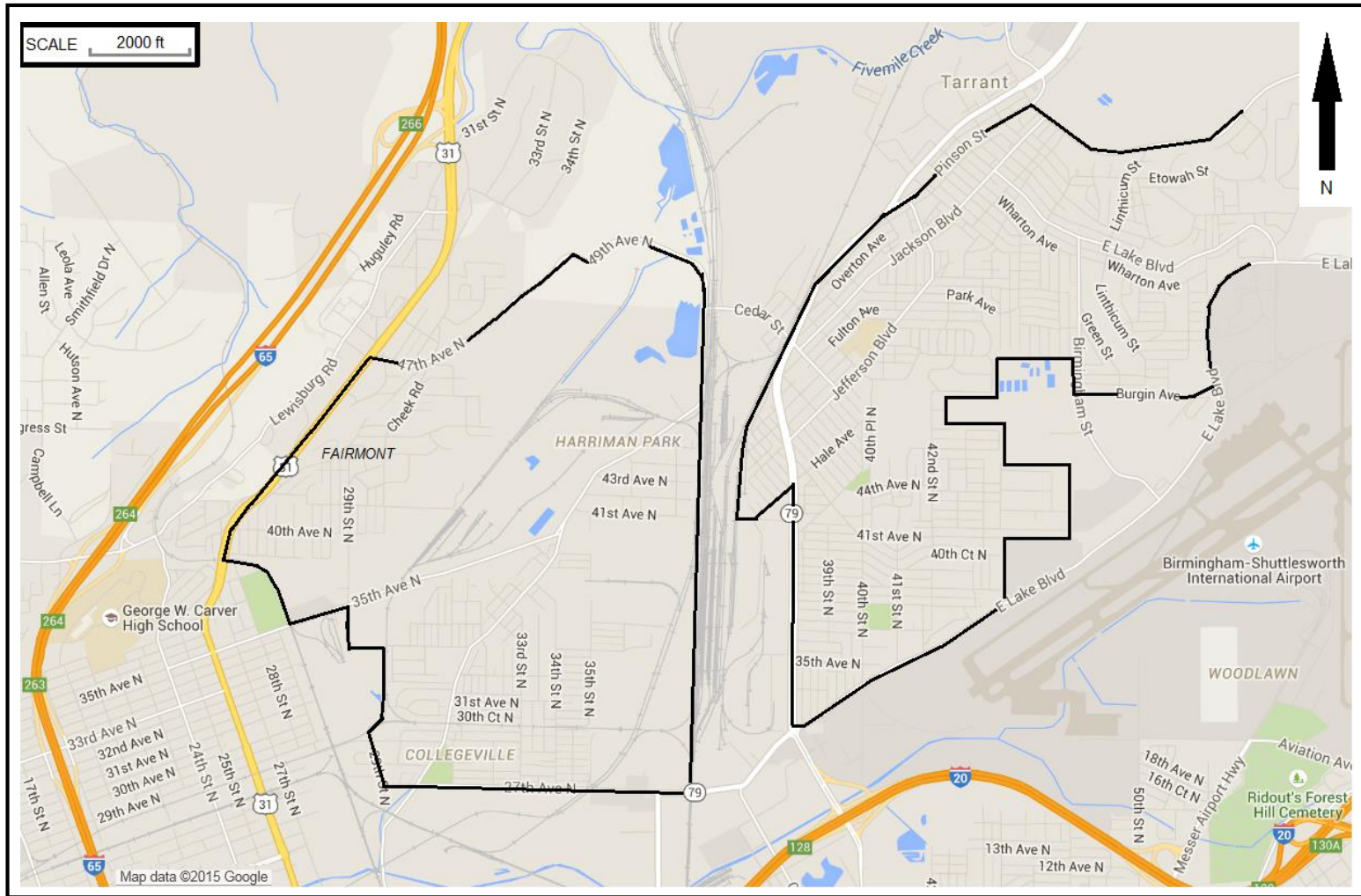


Figure 1. Pinson Valley neighborhood (right) as identified by PA Petition Request to EPA, July 1, 2014. The 35th Avenue Superfund Site is shown to the left.

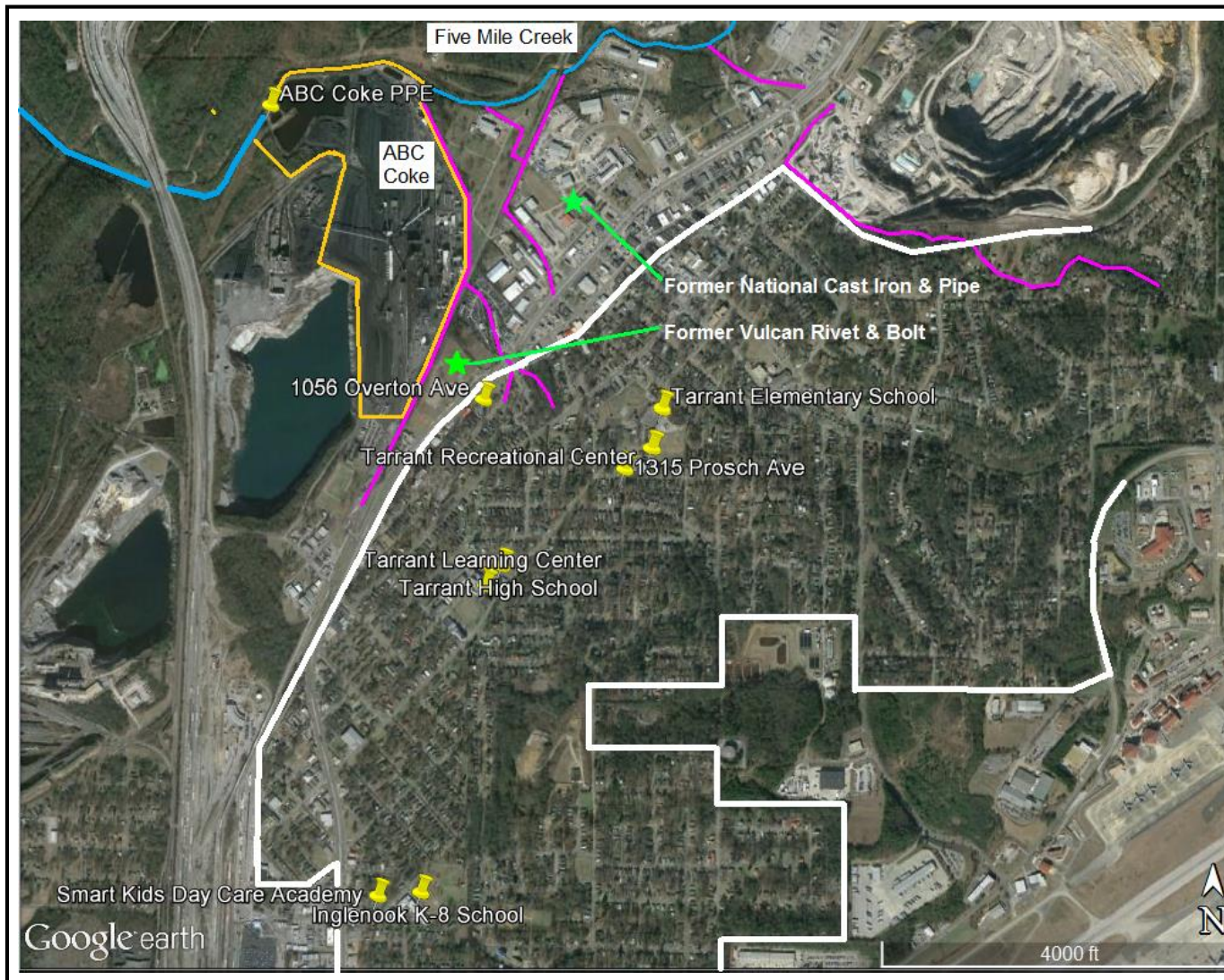
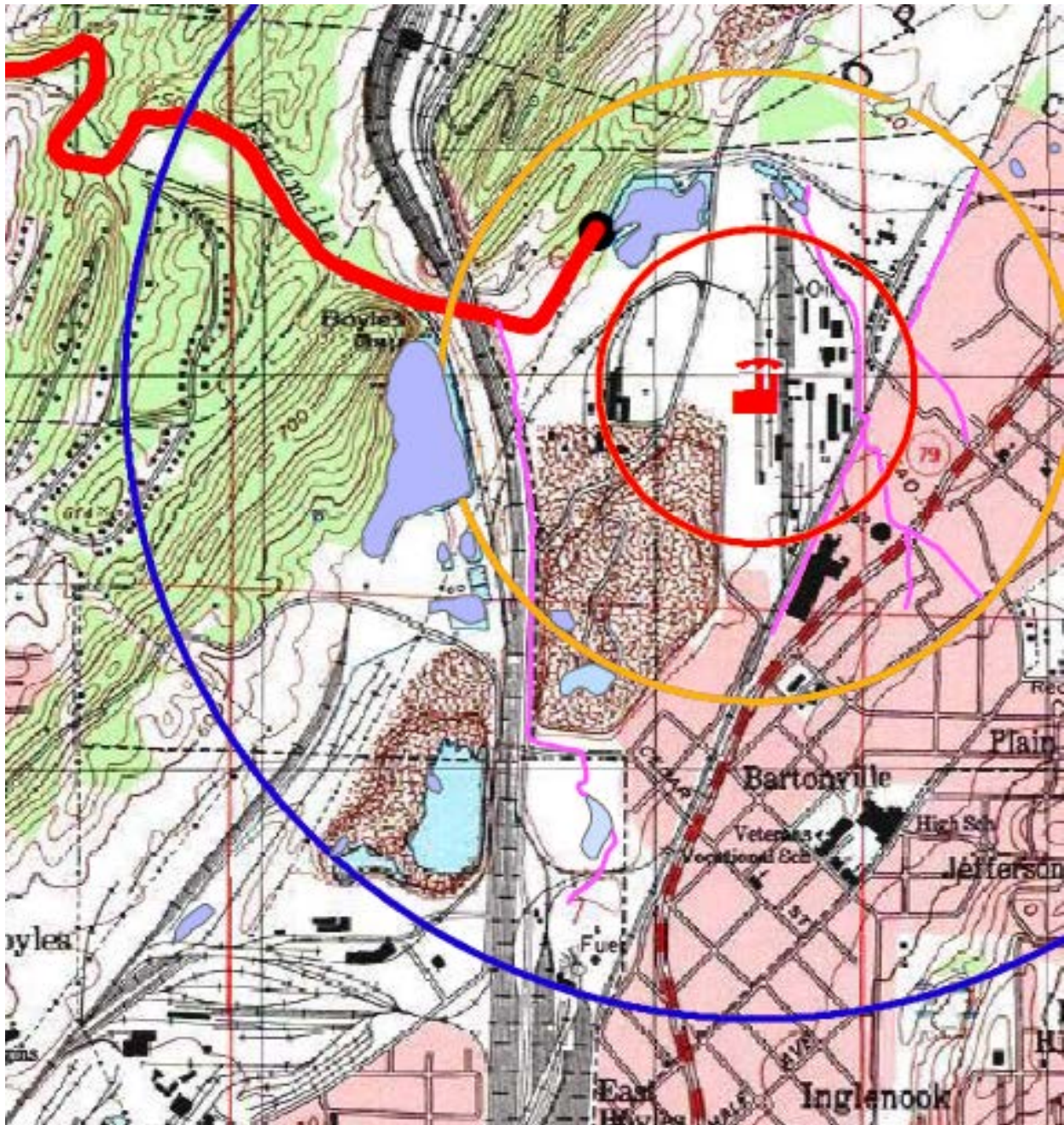


Figure 2. Features of interest in the Site area, including schools, current and former facility locations, surface water (Five Mile Creek), and drainage ditches.



| Wetland Data Type | | PEM1Ch | PSS1C |
|-------------------|-----------|--------|--------|
| L1UBHh | PEM1Cx | PEM1C | PSS1Fh |
| L1UBHx | PEM1F | PEM1Fh | PUBFx |
| PAB6H | PFO1A | PFO1Ah | PUBH |
| PAB6Hx | PFO1C | PFO1F | PUBHh |
| PEM1A | PFO1Fh | PFO1Fh | PUBHx |
| PEM1Ah | PFO1Fh | PFO1Fh | PUSCh |
| PEM1Ax | PFO1Fh | PFO1Fh | R2UBH |
| PEM1C | PFO5/UBHh | R2UBHx | R2USC |

Figure 3: Approximate Wetland locations along Five Mile Creek