

Final

Wetland Determination

Landfills and Fill Areas Fort McClellan, Alabama

Landfill No. 1, Parcel 78(6)

Landfill No. 2, Parcel 79(6)

Landfill No. 3, Parcel 80(6)

Landfill No. 4, Parcel 81(5); Industrial Landfill, Parcel 175(5)

Fill Area North of Landfill No. 2, Parcel 230(7)

Fill Area East of Reilly Airfield, Parcel 227(7)

Former Post Garbage Dump, Parcel 126(7)

Fill Area Northwest of Reilly Airfield, Parcel 229(7)

Fill Area at Range 30, Parcel 231(7)

Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7)

Stump Dump, Parcel 82(7)

Prepared for:

**U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama
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Prepared by:

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**Task Order CK09
Contract No. DACA21-96-D-0018
Shaw Project No. 796886**

April 2003



April 17, 2003

IT-MC-CK09-0190
Project No. 796886

Mr. Lee Coker
U.S. Army Corps of Engineers, Mobile District
Attn: EN-GE/Lee Coker
109 St. Joseph Street
Mobile, Alabama 36602

**Contract: Contract No. DACA21-96-D-0018/CK09
Fort McClellan, Alabama**

**Subject: Jurisdictional Wetland Determination Approval and Final Wetland Determination,
Landfills and Fill Areas, Fort McClellan, Alabama**

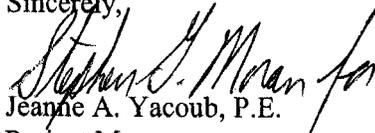
Dear Mr. Coker:

On March 21, 2003, a representative of the USACE-Mobile District (Regulatory Branch, Operations Division) completed an on-site field inspection of the flagged wetlands located within an approximate 200-foot perimeter of each landfill and fill area at Fort McClellan. Approval of the jurisdictional determination was granted for a 5-year period on April 2, 2003 (USACE File No. ALJ03-00524-K). A copy of the letter of approval has been included in an appendix to the *Final Wetland Determination* report submitted herein.

Correspondence included from the Regulatory Branch office states that Section 404 of the Clean Water Act of 1977 (33 USC 1344) prohibits filling activities in waters and wetlands of the United States, unless authorized by permit. Filling activities include slab-on-grade construction, some pile-supported structures, grading, land clearing with heavy equipment, and construction of a built-up road. Additionally, if landfills or fill areas are surveyed for inclusion on a legal description or property plat, a copy of the survey must be submitted to the USACE District Regulatory Branch for review and approval.

At your request, I have distributed copies of this letter as indicated below. If you have questions, or need further information, please contact Steve Moran at 865.694.7361 or me at 770.663.1429.

Sincerely,


Jeanne A. Yacoub, P.E.
Project Manager

Attachments

Distribution: Lisa Holstein, FTMC (1 copy)

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1.0 Introduction

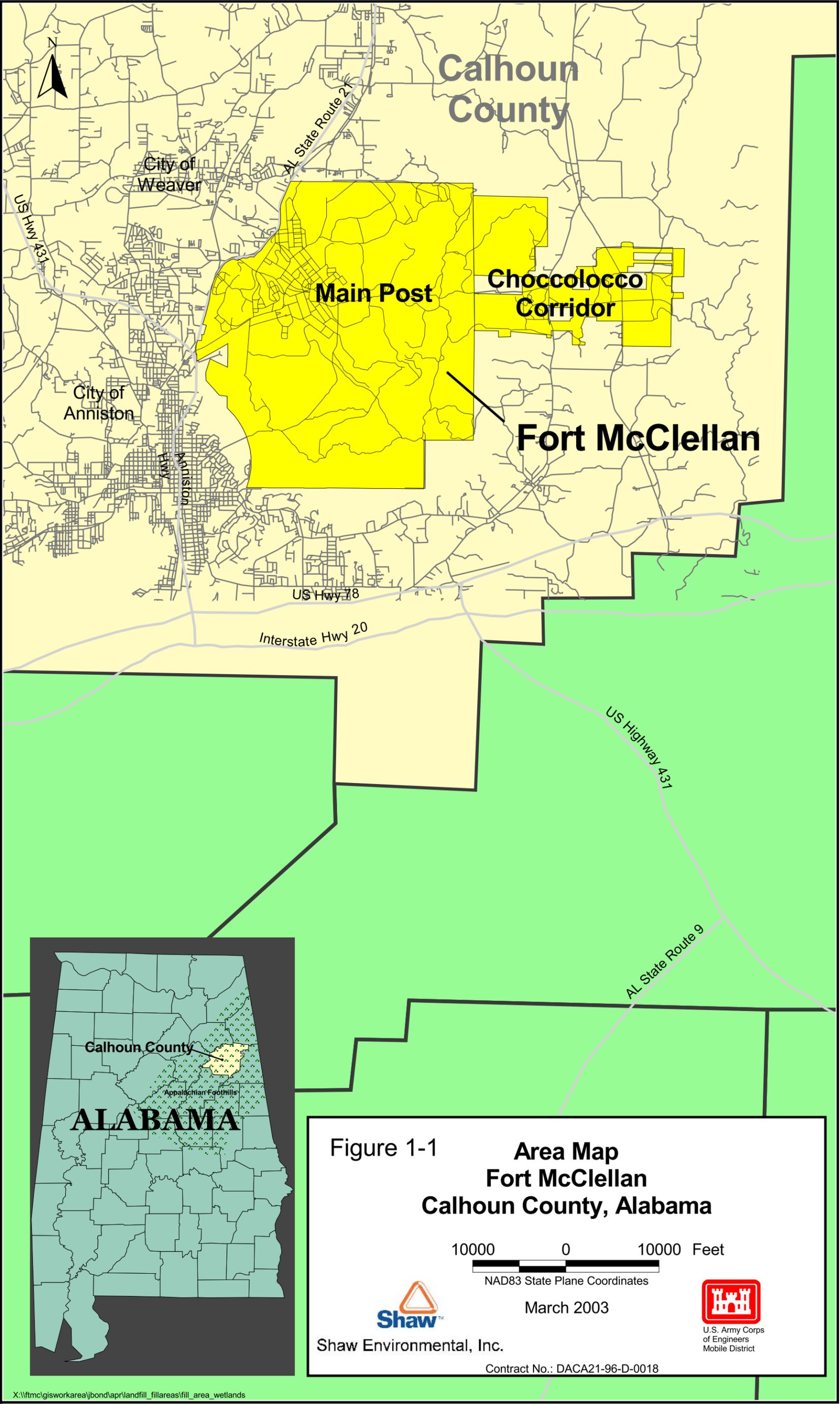
The U.S. Army has selected Fort McClellan (FTMC), located in Calhoun County, Alabama, for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. The 1990 Base Closure Act, Public Law 101-510, established the process by which U.S. Department of Defense installations would be closed or realigned. The BRAC Environmental Restoration Program requires investigation and cleanup of federal properties prior to transfer to the public domain. The U.S. Army is conducting environmental studies of the impact of suspected contaminants at parcels at FTMC under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE contracted Shaw Environmental, Inc. (formerly IT Corporation) to conduct wetland delineations on the landfills and fill areas of FTMC under Contract Number DACA21-96-D-0018, Task Order CK09.

This delineation was performed to determine the extent of federally regulated jurisdictional wetlands and waters of the United States. The delineation activities were conducted December 9 through 13, 2002, and were performed within an area extending approximately 200 feet beyond the perimeter of each designated landfill and fill area on the Main Post of FTMC.

Site Description. Fort McClellan is located in northeast Alabama in the foothills of the Appalachian Mountains near the cities of Anniston and Weaver in Calhoun County, Alabama (Figure 1-1). FTMC is approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn, and 95 miles west of Atlanta, Georgia. FTMC currently consists of two main parcels called the Main Post (18,929 acres) and the Pelham Range (22,245 acres). The Main Post is bounded by the Choccolocco Corridor to the east (formerly leased to the Army by the State of Alabama). The corridor connects the Main Post with the Talladega National Forest. The wetland delineations described in this report occurred primarily in the central portion of the Main Post (Figure 1-2).

The FTMC topography is generally undulating, as much of it lies in the foothills of the Appalachian Mountains. Several perennial and annual streams with associated wetlands are located in low areas throughout the site.

Landfill No. 1, Parcel 78(6), is located in the western portion of the Main Post and encompasses approximately six acres. The site occupies the hillside between Avery Drive and Coxwell Avenue on Wygant Hill. Landfill No. 1 was a sanitary landfill operated from 1945 until 1947.



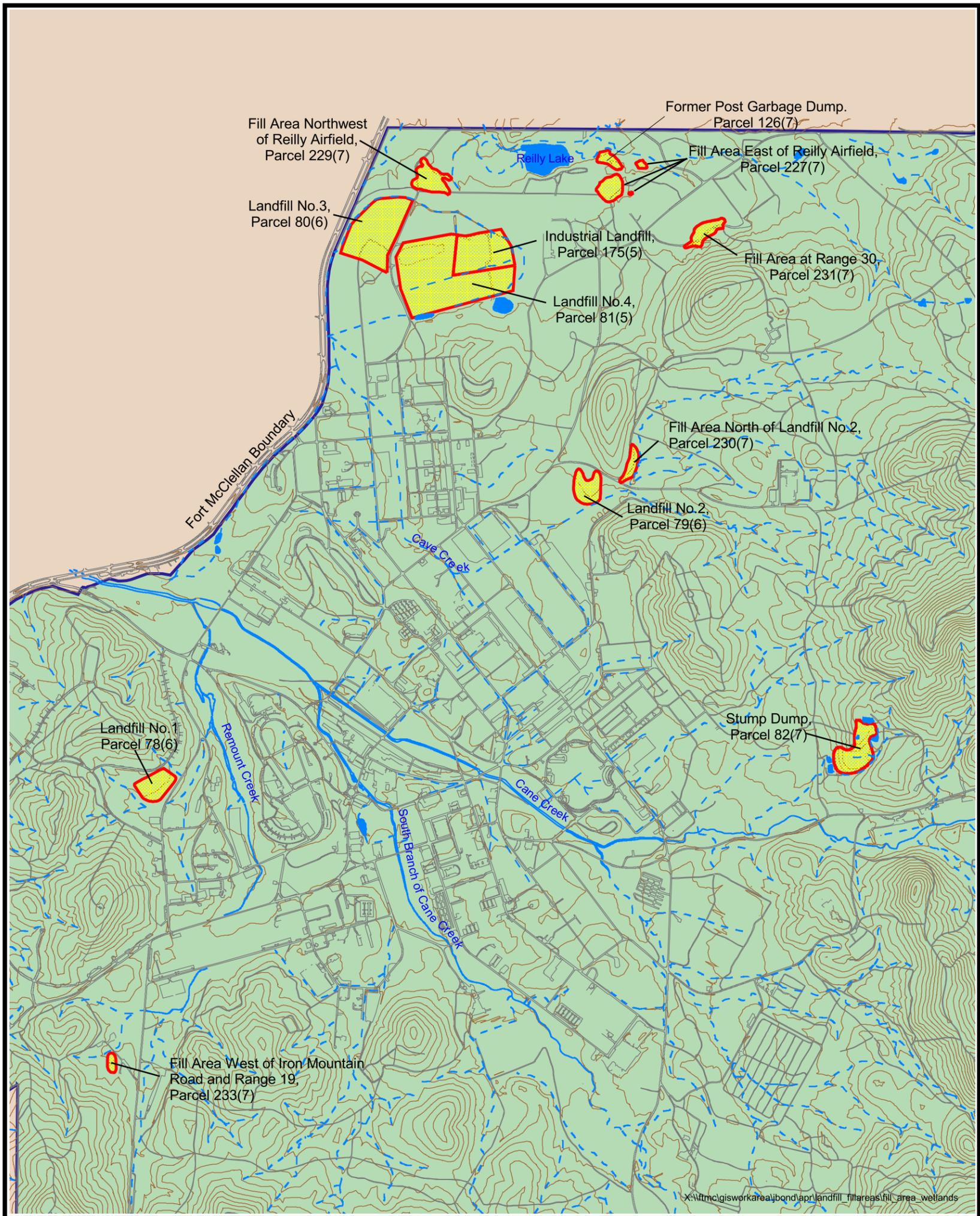
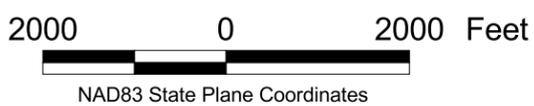


Figure 1-2 Landfills and Fill Areas
Fort McClellan, Alabama



Shaw Environmental, Inc.

April 2003

Contract No.: DACA21-96-D-0018



U.S. Army Corps
of Engineers
Mobile District

Legend

-  Surface Water Features (dashed where intermittent)
-  Roads
-  Topographic Contours (25-foot Interval)
-  Surface Water Feature (may be ephemeral)
-  Main Post
-  Landfill/Fill Area Boundary

Landfill No. 2, Parcel 79(6), is located in the central portion of the Main Post at the southern base of Cemetery Hill, south of United Road and east of Goode Road. The landfill area is approximately 5.6 acres. Landfill No. 2 was a sanitary landfill operated from circa 1927 until 1969.

Landfill No. 3, Parcel 80(6), encompasses a total area of approximately 23 acres and is located in the northwestern corner of the Main Post between Anniston-Jackson Highway (Route 21) to the west, Gobbler Road to the east, the installation's boundary to the north, and Cave Creek farther to the south. Landfill No. 3 was a sanitary landfill operated from 1947 to 1967.

Landfill No. 4, Parcel 81(5), is located at the northern end of the Main Post, east of Landfill No. 3. It covers a total of 43.3 acres. Landfill No. 4 was a sanitary landfill operated from 1967 to 1994. **The Industrial Landfill, Parcel 175(5)**, is located on approximately 15.9 acres in the northeast corner of Landfill No. 4. The Industrial Landfill is a permitted landfill receiving construction debris since 1995.

Fill Area North of Landfill No. 2, Parcel 230(7), is located in the north-central part of the Main Post, northeast of former Landfill No. 2. The fill area is located immediately east of an unimproved road that extends north from United Road. The Fill Area North of Landfill No. 2 encompasses a total area of approximately 2 acres. The exact dates of operation are unknown, but the landfill is identified on an aerial photograph taken in 1961. The type of waste received is not known.

Fill Area East of Reilly Airfield, Parcel 227(7), is located in the northern portion of the Main Post, north of the eastern end of Reilly Airfield. **Former Post Garbage Dump, Parcel 126(7)**, occupies a portion of the northern slope of the Fill Area East of Reilly Airfield, adjacent to and within a wetlands area. The total area of both sites combined is approximately 6.5 acres. The fill areas were identified on 1949 and 1961 aerial photographs. Waste type received in the Fill Area East of Reilly Airfield is unknown. The Former Post Garbage Dump received sanitary waste.

Fill Area Northwest of Reilly Airfield, Parcel 229(7), is located in the northwestern corner of the Main Post, adjacent to Reilly Airfield and west-southwest of Reilly Lake. The site is located north of Landfill No. 4 and west of Reilly Lake campground. The fill area encompasses approximately 6 acres. The fill area was identified on a 1954 aerial photograph. Waste type received is not known.

Fill Area at Range 30, Parcel 231(7), is located in the north-central portion of the Main Post east of Falcon Road. An unimproved dirt road traverses the fill area. The size of the fill area could not be determined from past reports; however, it was originally estimated to be about 6 acres. Current estimates of the actual fill area are closer to 3.9 acres, based on trenching, field observation, and sampling efforts. Waste type received is not known. The period of operation is also unknown, possibly from the late 1940s to early 1980s.

Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7), is located in the southwestern portion of the Main Post, approximately 550 feet west of Iron Mountain Road and immediately southwest of an unnamed asphalt road. The parcel covers approximately 1.1 acres. Unexploded ordnance cleanup activities are ongoing in this area. The type waste received is unknown; however, the area may have been a fill area only. The period of operation is unknown; the area is identified on a 1949 aerial photograph.

Stump Dump, Parcel 82(7), is located in the western portion of the Main Post, north of Baines Gap Road, and encompasses approximately 10 acres. The site is on the side of a steep hill, with an elevation difference of approximately 150 feet between the lowest portion of the site and the highest. The site is mostly devoid of natural vegetation, and there are five man-made impoundments adjoining the site. There is also a drainage ditch lined with riprap along the eastern and southern boundaries of the site. The Stump Dump was a fill area that received debris from before 1985 to 1988.

2.0 Methodology

The 1977 Clean Water Act amended the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States.

For regulatory purposes under the Clean Water Act, the term “wetlands” means “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.” (33 Code of Federal Regulations [CFR] 328)

For regulatory purposes under the Clean Water Act (33 CFR 328), the term "waters of the United States" means

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) of this section.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds as defined in 40 CFR 123.11[m] which also meet the criteria of this definition), are not waters of the United States.

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the U.S. Environmental Protection Agency (EPA).

It should be noted that the USACE and the EPA generally do not consider the following waters to be waters of the United States, and these are, therefore, nonjurisdictional. However, the USACE and EPA reserve the right on a case-by-case basis to determine that a particular body of water within these categories of waters is a water of the United States.

- a. Non-tidal drainage and irrigation ditches excavated on dry land
- b. Artificially irrigated areas which would revert to upland if the irrigation ceased
- c. Artificial lakes created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- d. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons
- e. Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States.

The wetlands and waters of the United States were delineated on the landfills and fill areas of FTMC in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987). The U.S. Fish and Wildlife Service's *National List of Vascular Plant Species that Occur in Wetlands* (1997) was consulted to determine the presence or absence of wetland vegetative communities.

Isolated wetland features that were not adjacent to any wetlands or waters of the United States were not considered jurisdictional and therefore were not flagged.

Upon determining the vegetative community boundaries, the soils were analyzed for indicators of wetland conditions. A shovel was used to view samples of the upper soil horizons in order to determine if hydric soils were present. Hydric soils are defined as soils formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. In addition to the hydric soil criteria established in the Wetlands Delineation Manual, *Field Indicators of Hydric Soils in the United States* (U.S. Department of Agriculture [USDA], 1998) was referenced to determine the presence of additional characteristic soil morphologies (indicators) resulting from prolonged saturation and/or inundation. Because of the possible presence of unexploded ordnance in the landfills and fill areas of FTMC and potential exposure concerns from unknown materials deposited in landfills, soil disturbance from digging shallow test pits was performed only outside landfill fill area boundaries. None of the test pits were deeper than fourteen inches below the surface because hydric soil indicators were consistently present within this depth.

After plant communities and soils were identified, the presence or absence of wetland hydrology was determined for final definition of the upland and wetland boundaries. Hydrology is often the least exact of the three parameters used in defining wetlands. Some indicators of wetland hydrology include drainage patterns, sediment deposition, watermarks, visual observation of saturation, and plant adaptations.

On-site routine wetland determination field data forms depicting representative conditions along the delineation are included in Appendix A of this report. Photographs of the area of study are included in Appendix B.

3.0 Site Characterization

3.1 Regional Geology

Calhoun County includes parts of two physiographic provinces, the Piedmont Upland Province and the Valley and Ridge Province. The Piedmont Upland Province occupies the extreme eastern and southeastern portions of the county and is characterized by metamorphosed sedimentary rocks. The generally accepted range in age of these metamorphic rocks is Cambrian to Devonian.

The majority of Calhoun County, including the Main Post of FTMC, lies within the Appalachian fold-and-thrust structural belt (Valley and Ridge Province) where southeastward-dipping thrust faults with associated with minor folding are the predominant structural features (Figure 3-1). The fold-and-thrust belt consists of Paleozoic sedimentary rocks that have been asymmetrically folded and thrust faulted, with major structures and faults striking in a northeast-southwest direction. Geologic formations within the Valley and Ridge Province portion of Calhoun County have been mapped by Warman and Causey (1962), Osborne and Szabo (1984), and Moser and DeJarnette (1992) and vary in age from Lower Cambrian to Pennsylvanian.

3.2 Area Soils

Soils in the study areas are described below. Some descriptions of soil survey mapping units (or “soil phases”) are included to more specifically describe the interrelations of the expected series. A soil phase can represent a kind of soil, a combination of soils, or miscellaneous land types. Of the eleven soils presumed to be in the study areas, three are considered by the Alabama USDA Soil Conservation Service to be either hydric soils or soils likely to contain hydric inclusions. Atkins Series soils are considered hydric, and Anniston Series and Allen Series soils are likely to have inclusions of Lee Series hydric soils. The Alabama USDA Soil Conservation Service *Calhoun County, Alabama, Hydric Soils List* (1991) was cross-referenced to determine if the soils are classified as hydric.

Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds. The presence of hydrogen sulfide gas is a strong indicator of hydric soil. In areas where soils are formed from parent material with low iron and manganese concentrations, features related to accumulations of organic carbon are typically used to determine hydric soils.

Topography, slope, parent material, and drainage are common characteristics used in separating the dominant soil types. For the purposes of this wetland delineation, it was not necessary to

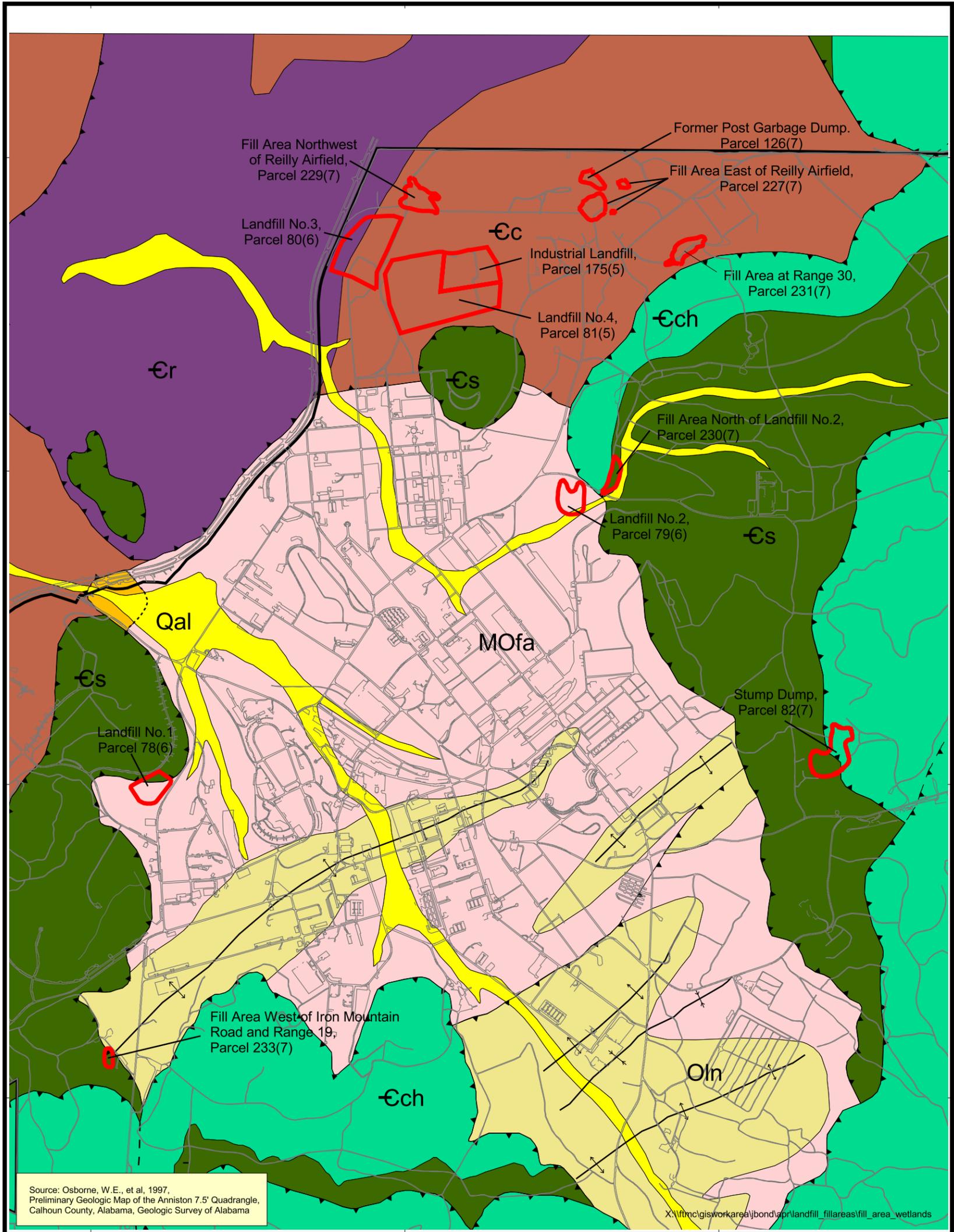
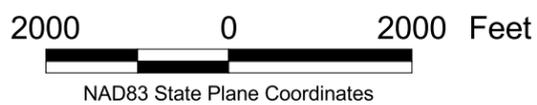


Figure 3-1

Geologic Map



Shaw Environmental, Inc.



April 2003



U.S. Army Corps of Engineers
Mobile District

Contract No.: DACA21-96-D-0018

Legend	
	Syncline
	Anticline
	Thrust Fault (barbs on upper sheet)
	Roads
	Main Post Boundary
	Landfill/Fill Area Boundary
Geology	
	Quaternary - alluvium
	Limestone - age unknown
	Mississippian/Ordovician - Floyd & Athens Shale, Undifferentiated
	Ordovician - Little Oak and Newala Limestones, Undifferentiated
	Cambrian - Conasauga Formation
	Cambrian - Rome Formation
	Cambrian - Shady Dolomite
	Cambrian - Chilhowee Group, Undifferentiated

determine whether the dominant soils listed below are present at the particular study areas on the Main Post of FTMC. However, according to the USDA *Soil Survey for Calhoun County, Alabama (1958)*, the soils described below are the dominant soils within the vicinity of the study areas (Figure 3-2).

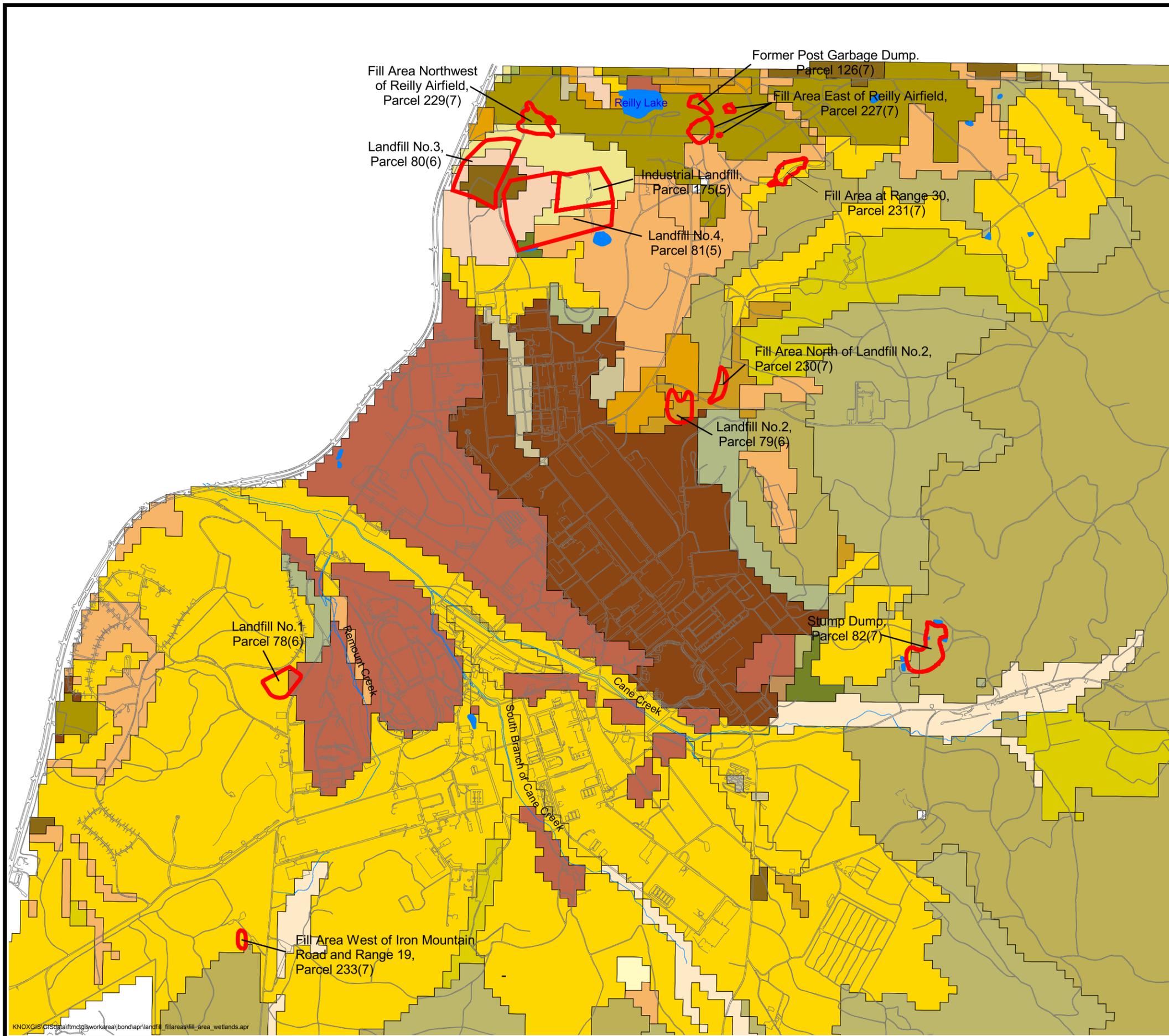
Allen Series: Soils are deep, strongly acid, and well drained and have developed in old local alluvium. Fragments of sandstone and quartzite are found on the surface and throughout the soil. The parent material is washed from the higher-lying Linker, Muskingum, Enders, and Montevallo soils, which developed from shale, quartzite, and weathered sandstone. The surface horizon is mainly dark grayish brown, fine, sandy loam or loam; the subsoil is dark red, fine, sandy clay loam. *Anniston and Allen gravelly loams* are mapped at Landfill No. 1, Fill Area at Range 30, Fill Area West of Iron Mountain Road and Range 19, and the Stump Dump. *Anniston and Allen stony loams* are mapped at the Stump Dump. Allen soils are not listed as hydric on the Calhoun County hydric soils list (Alabama USDA Soil Conservation Service, 1991).

Anniston Series: Soils are strongly acid and well drained and develop in old local alluvium. The parent material is washed from the higher-lying Linker, Muskingum, Enders, and Montevallo formations. Sandstone and quartzite gravel and cobbles are on the surface and throughout the soil. The surface horizon is mainly very dark brown loam. The subsoil is mainly dark red, sandy clay loam. *Anniston and Allen gravelly loams* are mapped at Landfill No. 1, Fill Area at Range 30, Fill Area West of Iron Mountain Road and Range 19, and the Stump Dump. *Anniston gravelly clay loam* is mapped at Landfill No. 4, Industrial Landfill, Fill Area East of Reilly Airfield, Former Post Garbage Dump, and Fill Area at Range 30. *Anniston and Allen stony loams* are mapped at the Stump Dump. Anniston soils are not listed as hydric on the Calhoun County hydric soils list.

Atkins Series: Soils are poorly drained and strongly acid and develop in general alluvium. The parent material has washed from soils underlain by sandstone and shale. Soils have a dark grayish brown, mottled silt loam surface. Subsoils are light brownish gray to light olive gray, mottled silt loam or clay loam. Atkins soils are associated with the Pope, Philo, and Stendal soils. *Atkins silt loam* is mapped at Landfill No. 2 and Fill Area North of Landfill No. 2. Atkins silt loam is listed as hydric on the Calhoun County hydric soils list.

Cumberland Series: Soils are deep, well drained, and found on stream terraces. Cumberland Series soils developed in general alluvium that washed from soils derived mainly from limestone, cherty limestone, shale, and sandstone. The surface soil is dark reddish brown gravelly loam; the subsoil is dark red, silty clay to gravelly, silty, clay loam. Cumberland soils

Figure 3-2 Area Soils Map



Legend

- Roads
- Surface Drainage Feature
- Surface Water Feature (may be ephemeral)
- Landfill/Fill Area Boundary
- Anniston and Allen gravelly loams
- Anniston and Allen stony loams
- Anniston gravelly clay loam
- Atkins Series
- Atkins and Stendal soils, local alluvium
- Atkins silt loam
- Camp Series
- Camp silt loam
- Cumberland and Decatur Series
- Cumberland gravelly clay loam
- Cumberland gravelly loam
- Decatur and Cumberland loams
- Jefferson Series
- Jefferson gravelly fine sandy loam
- Jefferson stony file sandy loam
- Lehw Series
- Lehw-Montevallo soils
- Locust Series
- Locust gravelly fine sandy loam
- Monongahela Series
- Monongahela loam
- Montevallo Series
- Montevallo shaly silt loam
- Montevallo shaly silty clay loam
- Philo and Stendal Series
- Philo and Stendal fine sandy loams
- Philo and Stendal soils, local alluvium
- Pope Series
- Pope fine sandy loam
- Purdy Series
- Purdy silt loam
- Rarden Series
- Rarden silt loam
- Rarden silty clay loam
- Sequatchie Series
- Sequatchie gravelly fine sandy loam
- Stony Rough Land
- Stony rough land, limestone
- Stony rough land, sandstone
- Terrace escarpments
- Tyler Series
- Tyler silt loam
- mine or quarry (A)
- mine or quarry (D)
- water (A)



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are associated with Etowa, Captina, Taft, Decatur, and Robertsville soils. *Cumberland gravelly loam* is mapped at Fill Area East of Reilly Airfield, Former Post Garbage Dump, and Fill Area Northwest of Reilly Airfield. *Decatur and Cumberland loams* are mapped at Landfill No. 3, Landfill No. 4, and Industrial Landfill. Cumberland soils are not listed as hydric on the Calhoun County hydric soils list.

Decatur Series: Soils are strongly acid and well drained and have developed on uplands from limestone residuum and old valley fill of similar origin. The surface horizon is dark reddish brown loam. The subsoil is dark red, silty clay. Decatur soils are associated with the Dewey, Fullerton, and Clarksville soils. *Decatur and Cumberland loams* are mapped at Landfill No. 3, Landfill No. 4, and Industrial Landfill. Decatur soils are not listed as hydric on the Calhoun County hydric soils list.

Locust Series: Soils are strongly to very strongly acid and moderately well drained and developed from old local alluvium that washed from sandstone, shale, and cherty limestone ridges. Surface soil is dark grayish brown, fine sandy loam. Subsoil is yellowish brown, fine sandy clay loam. Locust soils are associated with Anniston, Allen, Cane and Jefferson soils. *Locust gravelly fine sandy loam* is mapped at Landfill No. 2. Locust Soils are not listed as hydric on the Calhoun County hydric soils list.

Montevallo Series: Soils are shallow, well drained, and strongly acid and have developed in the residuum of interbedded shale and fine-grained sandstone or limestone. The surface is very dark grayish brown to very dark brown shaly silt loam. Fragments of shale and limestone are commonly found on and in this soil. Montevallo soils are associated with the Lehew, Rarden, Consauga, and Enders soils, which are better drained, more shallow, and more strongly acid. *Montevallo shaly silty clay loam* is mapped at Landfill No. 1. Montevallo soils are not listed as hydric on the Calhoun County hydric soils list.

Purdy Series: Soils are poorly drained and strongly acid and are found on stream terraces. They occur in small areas throughout the Main Post and have developed from general alluvium that has washed from soils derived from sandstone, shale, limestone, and other material. Surface soil is mottled, very dark gray to dark grayish brown silty loam. Subsoil is highly mottled, light brownish gray fine sandy clay. Purdy soils are associated with Holston, Monongahela, Nolichucky, and Tyler soils. *Purdy silt loam* is mapped at Landfill No. 3, Landfill No. 4, Industrial Landfill, and Fill Area Northwest of Reilly Airfield. Purdy soils are not listed as hydric on the Calhoun County hydric soils list.

Stony Rough Lands: This miscellaneous land type consists of rough, mountainous areas with many outcrops of sandstone and quartzite bedrock, loose rock fragments, and scattered patches of sandy soil. The soil is generally shallow. *Stony Rough Land sandstone* is mapped at Fill Area North of Landfill No. 2, Fill Area at Range 30, Fill Area West of Iron Mountain Road and Range 19, and the Stump Dump. Stony Rough Land soils are not listed as hydric on the Calhoun County hydric soils list.

Tyler Series: Soils are poorly drained and strongly acid and are located on low stream terraces. These soils occupy small areas throughout the Main Post and are developed in old general alluvium that washed from soils derived from sandstone, shale, limestone, and other materials. Surface soil is a grayish brown silt loam. Subsoil is a light yellowish brown, mottled, fine sandy clay loam. Tyler soils are associated with Holston, Monongahela, Nolichucky, and Purdy soils. *Tyler silt loam* is mapped at Landfill No. 3, Landfill No. 4, and Industrial Landfill. Tyler soils are not listed as hydric on the Calhoun County hydric soils list.

3.3 Regional Hydrogeology

The hydrogeology of Calhoun County has been investigated by the Geologic Survey of Alabama (Moser and DeJarnette, 1992), the U.S. Geological Survey in cooperation with the Geology Survey of Alabama (Warman and Causey, 1962), and the Alabama Department of Environmental Management (Planert and Pritchette, 1989). Groundwater in the vicinity of FTMC occurs in residuum derived from bedrock decomposition, within fractured bedrock, along fault zones, and from the development of karst frameworks. Groundwater flow may be estimated to be toward major surface water features. However, because of the impacts of differential weathering, variable fracturing, and the potential for conduit flow development, caution must be exercised in using surface topography as an indicator for groundwater flow direction in the area. Groundwater flow direction in areas with well-developed residuum horizons may subtly reflect the surface topography, but it also may exhibit the influence of pre-existing structural fabrics or the presence of perched water horizons on unweathered ledges or impermeable clay lenses.

Precipitation in the form of rainfall averages about 54 inches annually in Anniston, Alabama, with infiltration rates annually exceeding evapotranspiration rates (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1999). Precipitation and subsequent infiltration provide recharge to the groundwater flow system in the region. The main recharge areas for the aquifers in Calhoun County are located in the valleys. The ridges generally consist of sandstone, quartzite, and slate, which are resistant to weathering, relatively unaffected by faulting, and therefore relatively impermeable. The ridges have steep slopes and

thin to no soil cover, which enhance runoff to the edges of the valleys (Planert and Pritchette, 1989).

The thrust fault zones typical of the county form large storage reservoirs for groundwater. Points of discharge occur as springs, effluent streams, and lakes. Coldwater Spring is the largest spring in the State of Alabama, with a discharge of approximately 32 million gallons per day. This spring is the main source of water for the Anniston Water Department, from which FTMC buys its water. The spring is located approximately 5 miles southwest of Anniston and discharges from the brecciated zone of the Jacksonville Fault (Warman and Causey, 1962).

Shallow groundwater on FTMC occurs principally in the residuum developed from Cambrian sedimentary and carbonate bedrock units of the Weisner Formation, Shady Dolomite, and locally in lower Ordovician carbonates. The residuum may yield adequate groundwater for domestic and livestock needs but may go dry during prolonged dry weather. Groundwater within the residuum serves as a recharge reservoir for the underlying bedrock aquifers. Bedrock permeability is locally enhanced by fracture zones associated with thrust faults and by the development of solution (karst) features.

Planert and Pritchette identified two major aquifers: the Knox-Shady and the Tuscumbia-Fort Payne aquifers. The continuity of the aquifers has been disrupted by the complex geologic structure of the region, such that each major aquifer occurs repeatedly in different areas. The Knox-Shady aquifer group occurs over most of Calhoun County and is the main source of groundwater in the county. It consists of the Cambrian and Ordovician-aged quartzite and carbonates. The Conasauga Dolomite is the most utilized unit of the Knox-Shady aquifer, with twice as many wells drilled as any other unit (Moser and DeJarnette, 1992).

3.4 Regional Surface Hydrology

FTMC lies within the Coosa River drainage basin. The Coosa River is located west of FTMC, flows southwesterly, and forms the western boundary of Calhoun County. The principle tributaries draining from the Main Post and the investigated study areas are Cave Creek in the northern portion of the Main Post and Cane Creek, South Branch of Cane Creek, and Remount Creek in the southern portion of the Main Post (Figure 3-3). These creeks flow generally to the west-northwest across the Main Post toward the Coosa River. These sub-watersheds are composed of numerous smaller, annual and perennial tributaries and runoff ditches throughout the Main Post.

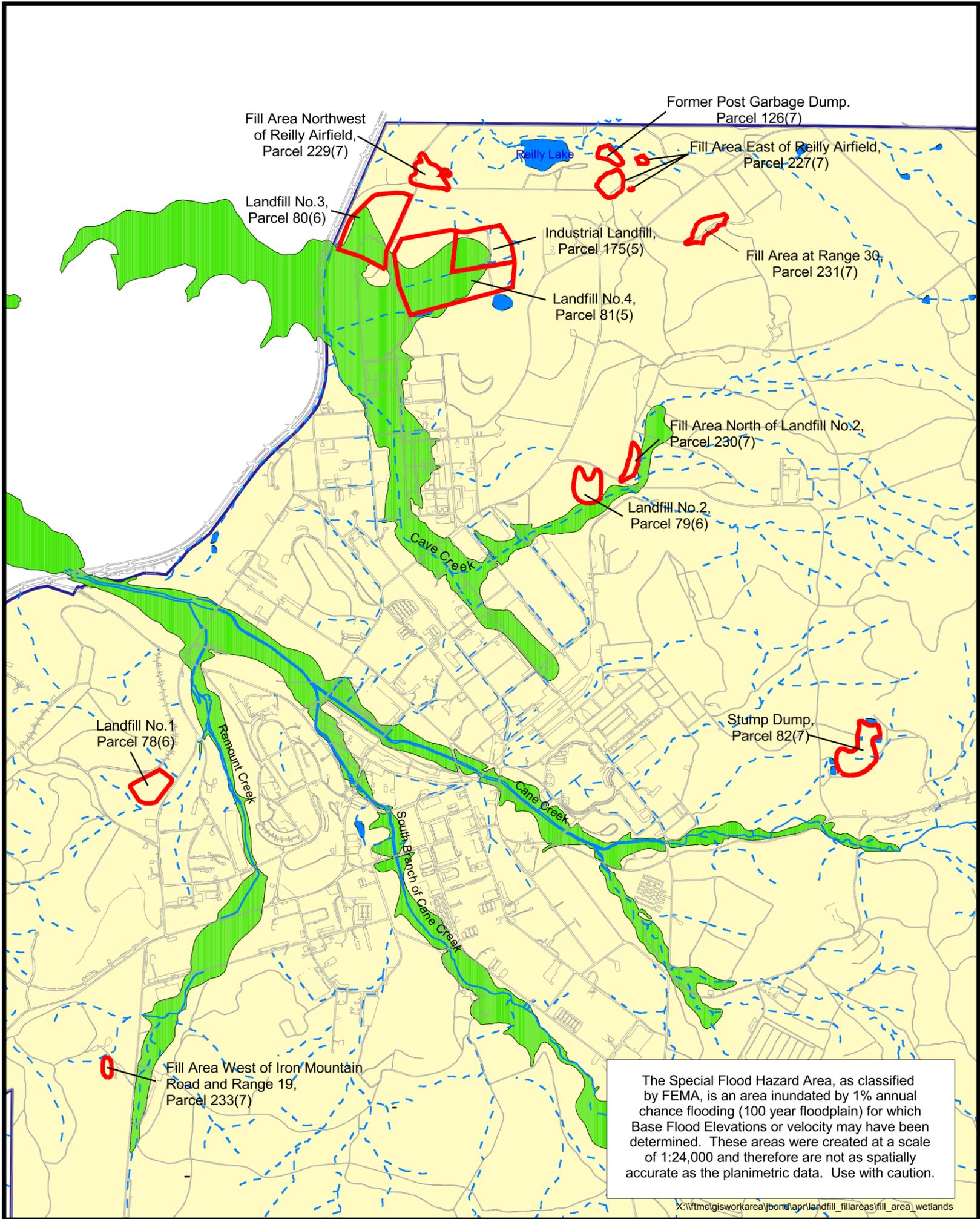


Figure 3-3

Surface Drainage and Floodplains

2000 0 2000 Feet

NAD83 State Plane Coordinates



Shaw Environmental, Inc.

April 2003

Contract No.: DACA21-96-D-0018



U.S. Army Corps of Engineers
Mobile District

Legend	
	Surface Drainage Features (dashed where intermittent)
	Roads
	Landfill/Fill Area Boundary
	100 Year Floodplain
	Surface Water Feature (may be ephemeral)
	Main Post Boundary

Also shown on Figure 3-3 are floodplains as determined by the Federal Emergency Management Agency. These areas, the 100-year floodplain, have a 1 percent annual chance of being inundated by flooding (for which base flood elevations have been determined). As shown on the figure, the following sites appear to be impacted:

- Landfill No. 3, Parcel 80(6)
- Landfill No. 4, Parcel 81(5)
- The Industrial Landfill, Parcel 175(5).

Current landfill cover elevations at Landfill No. 3, Landfill No. 4, and the Industrial Landfill would prevent floodwaters from overtopping the existing fill. The Federal Emergency Management Agency map does not reflect the current soil cover elevations of these landfills.

3.5 Vegetative Communities

The vegetative communities identified at the study areas are described below. Lists of the plant species observed in the wetlands and uplands during the site inspections are included in Tables 3-1 and 3-2, respectively.

3.5.1 Wetlands

A summary of the delineation of wetlands and waters of the United States observed at each of the fill areas is located in Table 3-3. Three distinct wetland classes within the palustrine system were identified within the study areas.

The palustrine wetland system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent. It also includes wetlands lacking such vegetation but having all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 meters at low water; and (4) salinity due to ocean-derived salts less than 0.5 percent. General descriptions and locations of the three observed wetland classes in the study area are as follows:

Freshwater Palustrine Emergent Persistent Class (PEM1): The emergent wetland class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Perennial plants usually dominate these wetlands. Persistent emergent wetlands are dominated by species that normally remain standing at least until the beginning of the next growing season.

Table 3-1

Vegetation Observed in Wetlands, December 9-13, 2002
Landfills and Fill Areas
Fort McClellan, Alabama

Trees and Shrubs		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Acer rubrum</i>	Red Maple	FAC
<i>Alnus serrulata</i>	Smooth Alder	FACW
<i>Celtis occidentalis</i>	Northern Hackberry	FAC
<i>Clothra alnifolia</i>	Coast Pepper-Bush	FACW
<i>Cornus ammomum</i>	Silky Dogwood	FACW+
<i>Cornus foemina</i>	Stiff Dogwood	FACW-
<i>Fraxinus pennsylvanica</i>	Green Ash	FACW
<i>Ligustrum vulgare</i>	European Privet	UPL
<i>Lindera benzoin</i>	Northern Spicebush	FACW
<i>Liquidambar styraciflua</i>	Sweet Gum	FAC+
<i>Liriodendron tulipifera</i>	Tulip Poplar	FACU
<i>Nyssa sylvatica</i>	Black Gum	FAC
<i>Pinus taeda</i>	Loblolly Pine	FAC
<i>Platanus occidentalis</i>	Sycamore	FACW-
<i>Quercus nigra</i>	Water Oak	FAC
<i>Quercus phellos</i>	Willow Oak	FACW-
<i>Salix nigra</i>	Black Willow	OBL
<i>Vaccinium corymbosum</i>	Highbush Blueberry	FACW
Grasses, Sedges, and Rushes		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Eleocharis obtusa</i>	Blunt Spikerush	OBL
<i>Juncus effusus</i>	Soft Rush	FACW
<i>Scirpus cyperinus</i>	Woolgrass	OBL
Vines		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Berchemia scandens</i>	Alabama Supplejack	FACW
<i>Lonicera japonica</i>	Japanese Honeysuckle	FAC-
<i>Smilax rotundifolia</i>	Common Greenbrier	FAC
<i>Toxicodendron radicans</i>	Poison Ivy	FAC
Ferns		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Osmunda regalis</i>	Royal Fern	OBL

† Key to indicator categories

OBL: Obligate Wetland, occur almost always (estimated probability >99%) under natural conditions in wetlands.

FACW: Facultative Wetland, usually occur in wetlands (estimated probability 67%-99%), but occasionally found in nonwetlands (estimated probability 1%-33%).

FAC: Facultative, equally likely to occur in wetlands or nonwetlands (estimated probability 34%-66%).

FACU: Facultative Upland, usually occur in nonwetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

UPL: Obligate Upland, occur in wetlands in another region, but occur almost always (estimated probability >99%) in nonwetlands in the region specified.

NL: Not found on national listings of plants occurring in wetlands.

A positive (+) sign following an indicator indicates a frequency toward the higher (wetter) end of a category.

A negative (-) sign following an indicator indicates a frequency toward the lower (drier) end of a category.

An asterisk following an indicator denotes a tentative assignment of the indicator.

Sources for Tables 1A and 1B:

1996 National List of Vascular Plant Species that Occur in Wetlands.

(All Regions) U.S. Fish and Wildlife Service, March, 1997

Table 3-2

**Vegetation Observed in Uplands, December 9-13, 2002
Landfills and Fill Areas
Fort McClellan, Alabama**

Trees and Shrubs		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Acer rubrum</i>	Red Maple	FAC
<i>Celtis occidentalis</i>	Northern Hackberry	FAC
<i>Fagus grandifolia</i>	American Beech	FACU
<i>Juniperus virginiana</i>	Eastern Red Cedar	FACU-
<i>Ligustrum vulgare</i>	European Privet	UPL
<i>Liquidambar styraciflua</i>	Sweetgum	FAC+
<i>Liriodendron tulipifera</i>	Tulip Poplar	FACU
<i>Pinus palustris</i>	Longleaf Pine	FACU+
<i>Pinus taeda</i>	Loblolly Pine	FAC
<i>Platanus occidentalis</i>	Sycamore	FACW-
<i>Prunus serotina</i>	Black Cherry	FACU
<i>Quercus alba</i>	White Oak	FACU
<i>Quercus falcata</i>	Southern Red Oak	FACU-
<i>Quercus nigra</i>	Water Oak	FAC
<i>Quercus rubra</i>	Northern Red Oak	FACU
<i>Rosa multiflora</i>	Muliflora Rose	UPL
<i>Rubus allegheniensis</i>	Allegheny Blackberry	UPL
<i>Vaccinium corymbosum</i>	Highbush Blueberry	FACW
Vines		
Scientific Name	Common Name	† Wetland Indicator Status
<i>Lonicera japonica</i>	Japanese Honeysuckle	FAC-
<i>Toxicodendron radicans</i>	Poison Ivy	FAC

† Key to indicator categories

OBL: Obligate Wetland, occur almost always (estimated probability >99%) under natural conditions in wetlands.

FACW: Facultative Wetland, usually occur in wetlands (estimated probability 67%-99%), but occasionally found in nonwetlands (estimated probability 1%-33%).

FAC: Facultative, equally likely to occur in wetlands or nonwetlands (estimated probability 34%-66%).

FACU: Facultative Upland, usually occur in nonwetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

UPL: Obligate Upland, occur in wetlands in another region, but occur almost always (estimated probability >99%) in nonwetlands in the region specified.

NL: Not found on national listings of plants occurring in wetlands.

A positive (+) sign following an indicator indicates a frequency toward the higher (wetter) end of a category.

A negative (-) sign following an indicator indicates a frequency toward the lower (drier) end of a category.

An asterisk following an indicator denotes a tentative assignment of the indicator.

Sources for Tables 1A and 1B:

1996 National List of Vascular Plant Species that Occur in Wetlands.

(All Regions) U.S. Fish and Wildlife Service, March, 1997

Table 3-3

**Jurisdictional Wetland Determination Summary
Landfills and Fill Areas
Fort McClellan, Alabama**

(Page 1 of 2)

Description	Parcel No.	Survey Points	Figure No.	Photo No.	Wetland Classification	Comments
Landfill No. 1	Parcel 78(6)	W(1-25) X(1-30) Y(1-11) Z(1-17)	4-1	20	Waters of the US	Waters of the US were flagged to the west and south of the fill area. No other wetlands were encountered.
Landfill No. 2	Parcel 79(6)	O(1-33)	4-2	15, 16, 17	Waters of the US, PFO1, PEM1	Cave Creek runs along a portion of the southern edge of the fill area and was flagged as waters of the US. This line connected to a small forested wetland pocket southwest of the fill area that extended further north to a smaller emergent pocket. No other wetlands were encountered.
Landfill No. 3	Parcel 80(6)	E(1-27) F(1-11) G(1-3) H(1-19)	4-3	1	Waters of the US, PFO1	The entire creek channel around the western and northern boundaries of the fill area was flagged as waters of the US. A forested wetland area southwest of the fill area was flagged as PFO1. This PFO1 area drained into the previously described creek channel.
Landfill No. 4 and Industrial Landfill	Parcels 81(5) and 175(5)	I(1-21) J(1-9) K(1-7) P(1-15) Q(1-10) R(1-23) S(1-16)	4-4	2, 3, 4, 5, 6, 7	Waters of the US, PFO1	A large PFO1 wetland area exists to the east of the fill area, and was flagged to a point at least 200 feet away from the fill area boundary. This wetland area joined into a creek that was flagged as waters of the US (P and Q survey lines). A large PFO1 wetland area existed across Gobbler Rd. to the west of the landfill area. This area was flagged to a point at least 200 feet away from the fill area boundary. This wetland area drained east into a creek channel across Gobbler Rd. The R and S survey lines continue as waters of the US along this creek channel until it eventually merges with another channel near the end of Landfill No. 3 survey lines (E and H).
Fill Area North of Landfill No. 2	Parcel 230(7)	N(1-35)	4-5	13, 14	Waters of the US, PFO1	The west bank of Cave Creek was flagged as the waters of the US border of the large PFO1 area that exists to the east of the fill area. The creek ran along the eastern edge of the fill area. A small PFO1 pocket draining into the creek from the western bank was also flagged. The PFO1 wetland east of the fill area and adjacent to Cave Creek extends beyond 200 feet from the fill area boundary.
Fill Area East of Reilly Airfield and Former Post Garbage Dump	Parcels 227(7) and 126(7)	T(1-55) U(1-28) V(1-8)	4-6	18, 19	PFO1, PSS1, PEM1	Forested PFO1 wetlands were observed and flagged to the north and northeast of the 2 acre mound. A small upland inclusion (V survey points) was observed inside this wetland system. These forested areas opened up into the emergent wetland (PEM1) beaver pond area, which was flagged. There was also a scrub/shrub wetland area (PSS1) just west of the beaver pond.
Fill Area Northwest of Reilly Airfield	Parcel 229(7)	A(1-21) B(1-16) C(1-4) D(1-7)	4-7	None.	Waters of the US, PFO1	A large ravine east of the fill area was flagged as waters of the US and a small PFO1 area was flagged that drained into the ravine NE of the fill area.

Table 3-3

**Jurisdictional Wetland Determination Summary
Landfills and Fill Areas
Fort McClellan, Alabama**

(Page 2 of 2)

Description	Parcel No.	Survey Points	Figure No.	Photo No.	Wetland Classification	Comments
Fill Area at Range 30	Parcel 231(7)	Not surveyed.	4-8	8, 9, 10, 11, 12	No jurisdictional wetlands observed.	A small non-jurisdictional emergent wetland area (PEM1) was observed and photographed along the access road that goes across the fill area in a west/east direction. This small area drained into a larger pond that was located just south of the fill area. This open water feature (including the emergent area on the road) was isolated and did not have any associated wetland fringe areas.
Fill Area West of Iron Mountain Road and Range 19	Parcel 233(7)	Not surveyed.	4-9	None.	No jurisdictional wetlands observed.	A small non-jurisdictional depressional area that was holding excess stormwater due to the recent rainfall was observed.
Stump Dump	Parcel 82(7)	L(1-25) M(1-13)	4-10	None.	Waters of the US	The drainage-ways leading to the south and west away from the fill area were observed and flagged as Waters of the US.

Notes:

PEM1 - Freshwater Palustrine Emergent Persistent Class : The emergent wetland class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. Persistent emergent wetlands are dominated by species that normally remain standing at least until the beginning of the next growing season.

PSS1 - Freshwater Palustrine Scrub/Shrub Broad Leaved Deciduous Class: The scrub/shrub wetland class includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Scrub/shrub wetlands may represent a successional stage leading to forested wetland, or they may be relatively stable communities.

PFO1 - Freshwater Palustrine Forested Broad Leaved Deciduous Class: The forested wetland class is characterized by woody vegetation that is 6 m (20 ft.) tall or taller. Forested wetlands are most common in the eastern United States and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. They occur only in the palustrine and estuarine systems and normally possess an overstory of trees, an understory of young trees and/or shrubs, and an herbaceous layer.

Waters of the United States - For regulatory purposes under the Clean Water Act (33 CFR 328) the term "waters of the United States" means:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) of this section.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any

At FTMC, these wetland communities are located primarily in and around the beaver pond area. Smaller emergent features were observed on or around Landfill 2 as well. Isolated emergent wetland features were observed at Landfill 3 and the Fill Area at Range 30. They vary widely in vegetative composition, but the dominant plants tend to be soft rush, woolgrass, sedges, and other rush species.

Freshwater Palustrine Scrub/Shrub Broad-Leaved Deciduous Class (PSS1): The scrub/shrub wetland class includes areas dominated by woody vegetation less than 6 meters (20 feet) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Scrub/shrub wetlands may represent a successional stage leading to forested wetland, or they may be relatively stable communities.

At FTMC, this wetland type was primarily located in patches west of the beaver pond area and east of Reilly Lake (near Fill Area East of Reilly Airfield). The dominant shrubs in these areas are smooth alder and silky dogwood. Some mature black willows as well as some mature green ash are interspersed in this scrub/shrub community.

Freshwater Palustrine Forested Broad-Leaved Deciduous Class (PFO1): The forested wetland class is characterized by woody vegetation that is 6 meters (20 feet) tall or taller. Forested wetlands are most common in the eastern United States and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. They occur only in the palustrine and estuarine systems and normally possess an overstory of trees, an understory of young trees and/or shrubs, and an herbaceous layer.

This wetland class, commonly called wooded swamp, is the dominant wetland class found on the study areas throughout FTMC. The four co-dominant trees of this community are red maple, willow oak, water oak, and sweet gum. Some other canopy tree species found in the wooded swamps include loblolly pine, black gum, northern hackberry, and sycamore.

The understory of the wooded swamps is quite sparse in most places; however, individual highbush blueberries, coast pepperbushes, and stiff dogwoods were frequently observed. In some areas, vines of Alabama supplejack, poison ivy, and common greenbrier form thickets.

3.5.2 Uplands

Most of the upland regions of the study areas are forested areas. The forests are best described as a mixed southern pine/oak forest community. Northern and Southern red oak, white oak,

loblolly pine, black cherry, tulip poplar, and American beech dominate these forested areas. The understory includes European privet, multiflora rose, Allegheny blackberry, Japanese honeysuckle, and common greenbrier.

4.0 Results and Discussion

The jurisdictional wetlands and waters of the United States delineated at FTMC were located with flagging in the field and were surveyed using global positioning system following the completion of the on-site determination. Using the survey data, Shaw Environmental, Inc. has prepared maps indicating the probable locations and extent of jurisdictional wetlands and waters of the United States located in the study areas. Figures 4-1 through 4-10 (provided at the end of the report) depict the areas delineated as jurisdictional wetlands and/or waters of the United States that are present at each parcel.

Three freshwater wetland class types in the palustrine system are found in or around the study areas on the Main Post. These wetland class types include emergent persistent, scrub/shrub broad-leaved deciduous, and forested broad-leaved deciduous wetlands. Most of the wetland areas are associated with nearby creeks and their tributaries.

The dominant upland vegetative communities of the site are indicative of middle to late stage successional mixed coniferous/deciduous forests. Other upland habitats in the study areas include maintained/mowed landscape areas.

- **Landfill No. 1, Parcel 78(6)** - Waters of the United States were flagged to the west and south of the fill area. No other wetlands were encountered.
- **Landfill No. 2, Parcel 79(6)** - Cave Creek runs along a portion of the southern edge of the fill area and was flagged as waters of the United States. This line connected to a small, forested wetland pocket southwest of the fill area that extended further north to a smaller emergent pocket. No other wetlands were encountered.
- **Landfill No. 3, Parcel 80(6)** - The entire creek channel around the western and northern boundaries of the fill area was flagged as waters of the United States. A forested wetland area southwest of the fill area was flagged as PFO1. This PFO1 area drained into the previously described creek channel. Pooled water in depressional troughs was observed on top of the fill area. Some isolated, nonjurisdictional PEM1 wetland pockets were also observed on the fill area.
- **Landfill No. 4, Parcel 81(5), and Industrial Landfill, Parcel 175(5)** - Two isolated man-made, nonjurisdictional detention ponds were observed in the southeast and southwest corners of the fill area. Two nonjurisdictional cement-lined drainage-ways were observed and photographed near the central portion and the southern portion of the landfill. Both drainage-ways were flowing east. A large PFO1 wetland area existed to the east of the fill area and was flagged to a point at least 200 feet away from the fill area boundary. This wetland area joined

into a creek that was flagged as waters of the United States (shown on Figure 4-4 as survey points P1-P15 and Q1-Q10). Two isolated, nonjurisdictional wetland features were observed to the north of the fill area. A large PFO1 wetland area exists across Gobbler Road to the west of the landfill area. This area was flagged to a point at least 200 feet away from the fill area boundary. This wetland area drained east into a creek channel across Gobbler Road. The R and S survey lines continue along this creek channel as waters of the United States until the channel eventually merges with another channel near the end of the E and H survey lines from Landfill 3.

- **Fill Area North of Landfill No. 2, Parcel 230(7)** - The west bank of Cave Creek was flagged as the border of the large PFO1 area that exists to the east of the fill area. The creek runs along the eastern edge of the fill area. A small PFO1 pocket draining into the creek from the western bank was also flagged. The PFO1 wetland east of the fill area and adjacent to Cave Creek extends more than 200 feet beyond the fill area boundary.
- **Fill Area East of Reilly Airfield, Parcel 227(7), and Former Post Garbage Dump, Parcel 126(7)** - Forested PFO1 wetlands were observed and flagged to the north and northeast of the 2-acre mound. A small upland inclusion was observed inside this wetland system (shown on Figure 4-5 as survey points V1-V8). These forested areas open up into the emergent wetland (PEM1) beaver pond area, which was flagged. There is also a scrub/shrub wetland area (PSS1) just west of the beaver pond.
- **Fill Area Northwest of Reilly Airfield, Parcel 229(7)** - A large ravine east of the fill area was flagged as waters of the United States, and a small PFO1 area was flagged that drains into the ravine northeast of the fill area.
- **Fill Area at Range 30, Parcel 231(7)** - A small, nonjurisdictional emergent wetland area (PEM1) was observed and photographed along the access road that goes across the fill area in a west/east direction. This small area drains into a larger pond located just south of the fill area. This open water feature (including the emergent area on the road) is isolated and does not have any associated wetland fringe areas.
- **Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7)** - A small, nonjurisdictional depressional area was observed that was holding excess stormwater due to the recent rainfall.
- **Stump Dump, Parcel 82(7)** - Five nonjurisdictional, man-made detention ponds and associated riprap drainage-ways were observed on the fill area. Natural drainage-ways leading to the south and west away from the fill area were observed and flagged as waters of the United States.

On March 21, 2003, a representative of the USACE-Mobile District (Regulatory Branch, Operations Division) completed an on-site field inspection of the landfills and fill areas. Approval of the jurisdictional determination was granted on April 2, 2003, for a 5-year period (USACE File No. ALJ03-00524-K).

Section 404 of the Clean Water Act of 1977 (33 United States Code 1344) prohibits filling activities in waters and wetlands of the United States, unless authorized by permit. Filling activities include slab-on-grade construction, some pile-supported structures, grading, land clearing with heavy equipment, and construction of a built-up road. Additionally, if landfills or fill areas are surveyed for inclusion on a legal description or property plat, a copy of the survey must be submitted to the USACE District Regulatory Branch for review and approval.

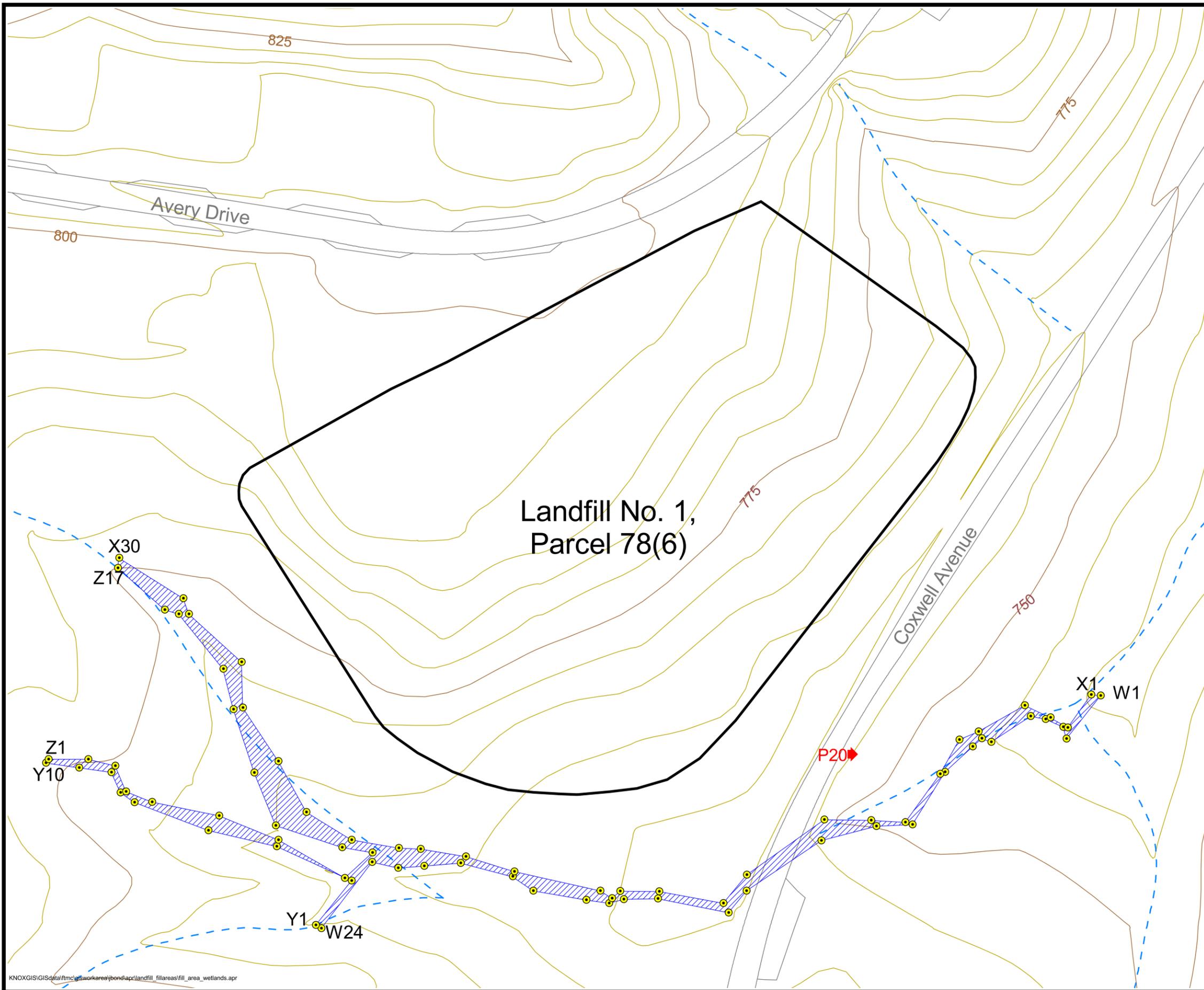
A copy of the USACE approval letter for the jurisdictional determination is located in Appendix C.

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- Warman, J. C., and L. V. Causey, 1962, *Geological Map of Calhoun County, Alabama*, U.S. Geological Survey of Alabama County Report 7, plate.

Figure 4-1 Wetland Determination

Landfill No.1, Parcel 78(6)
Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)

100 0 100 Feet

NAD83 State Plane Coordinates



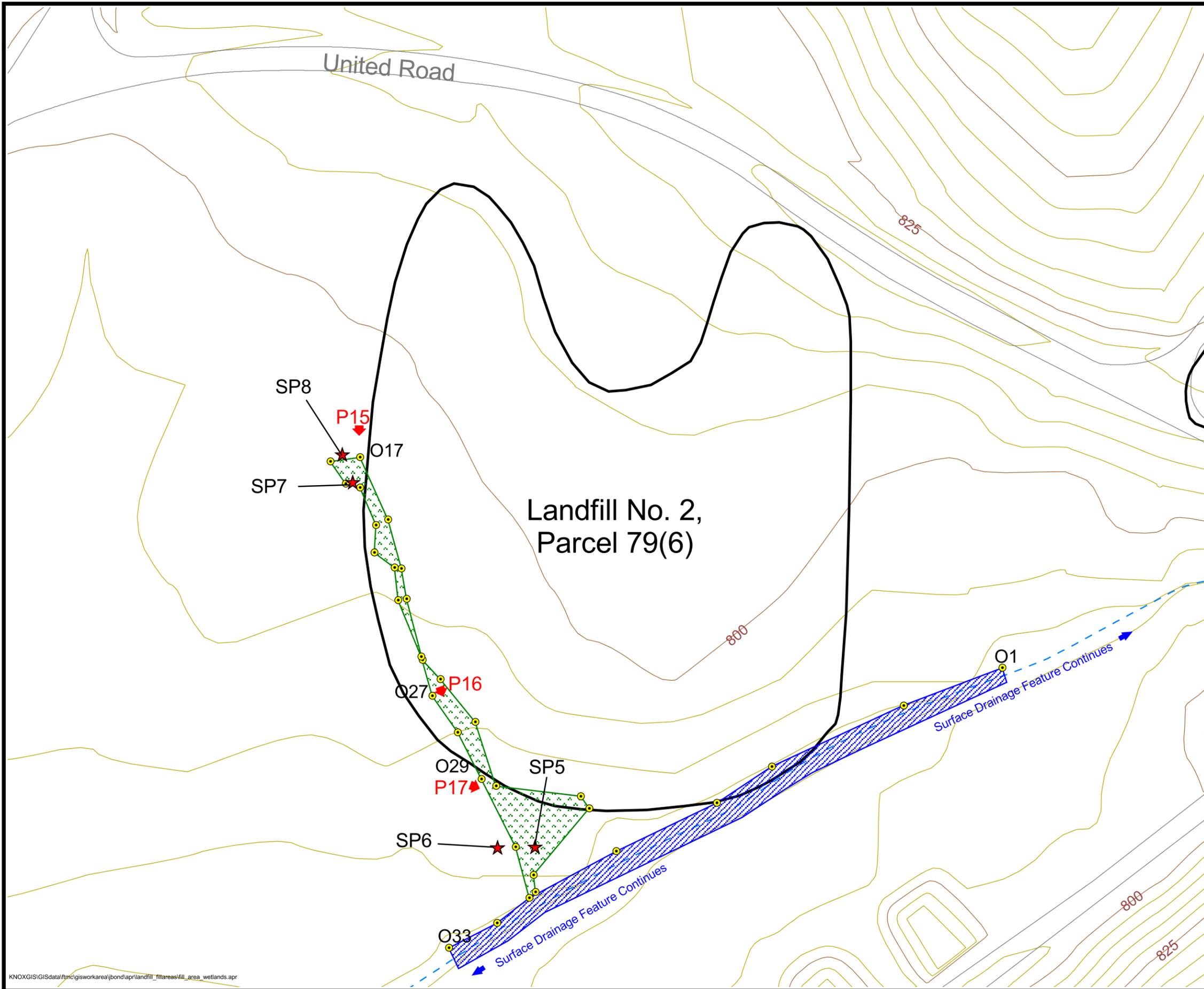
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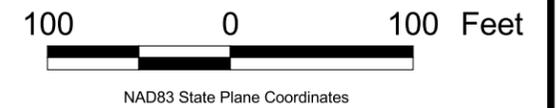
Contract No. DACA21-96-D-0018

Figure 4-2
Wetland Determination
 Landfill No.2, Parcel 79(6)
 Fort McClellan, Alabama



Legend

- Wetland Survey Point
- Wetland Data Point
- Photo Point (Arrow Indicates Approximate Direction of Photograph)
- Jurisdictional Waters of the United States
- Jurisdictional Wetland
- Topographic Contour (5-foot interval)
- Surface Drainage Feature (dashed where intermittent)

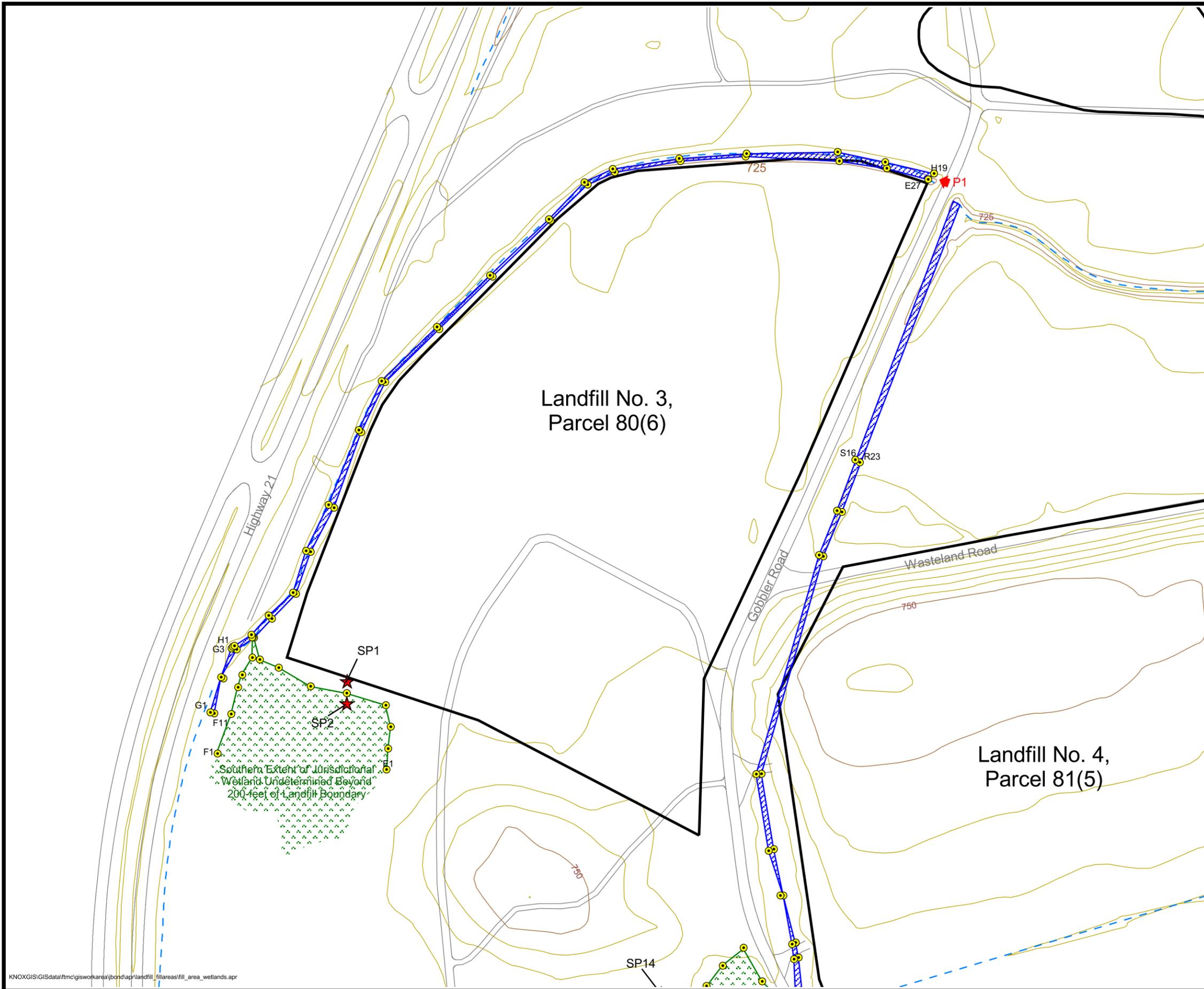


 Shaw Environmental, Inc.



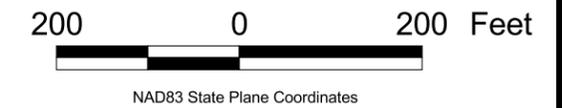
Contract No. DACA21-96-D-0018

Figure 4-3
Wetland Determination
 Landfill No.3, Parcel 80(6)
 Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)



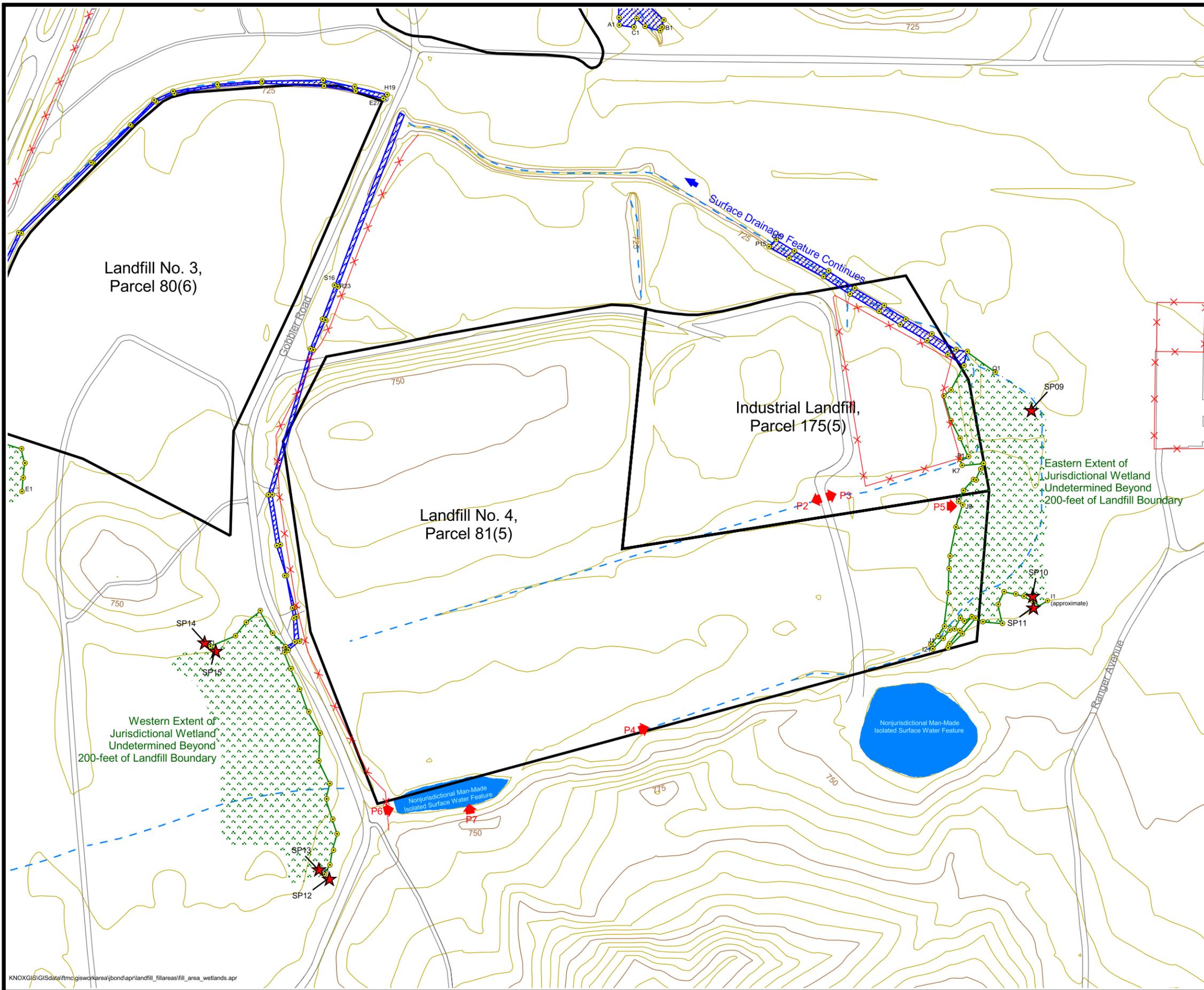
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Contract No. DACA21-96-D-0018

Figure 4-4 Wetland Determination

Landfill No.4, Parcel 81(5)
and Industrial Landfill,
Parcel 175(5)
Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)
-  Fence

300 0 300 Feet

NAD83 State Plane Coordinates



 Shaw Environmental, Inc.

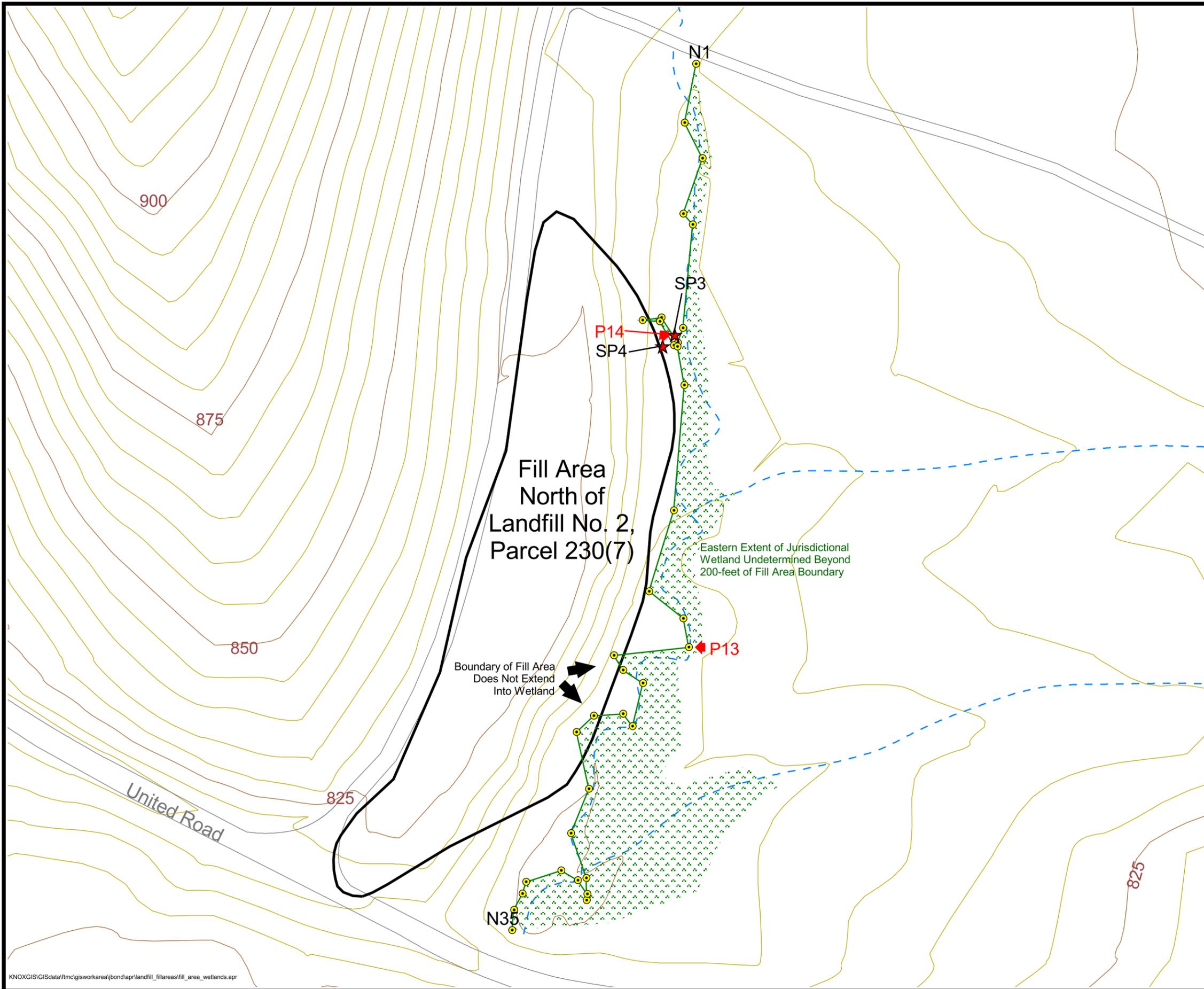


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Mobile District

Contract No. DACA21-96-D-0018

Figure 4-5 Wetland Determination

Fill Area North of
Landfill No.2, Parcel 230(7)
Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)

100 0 100 Feet

NAD83 State Plane Coordinates

N



 Shaw Environmental, Inc.

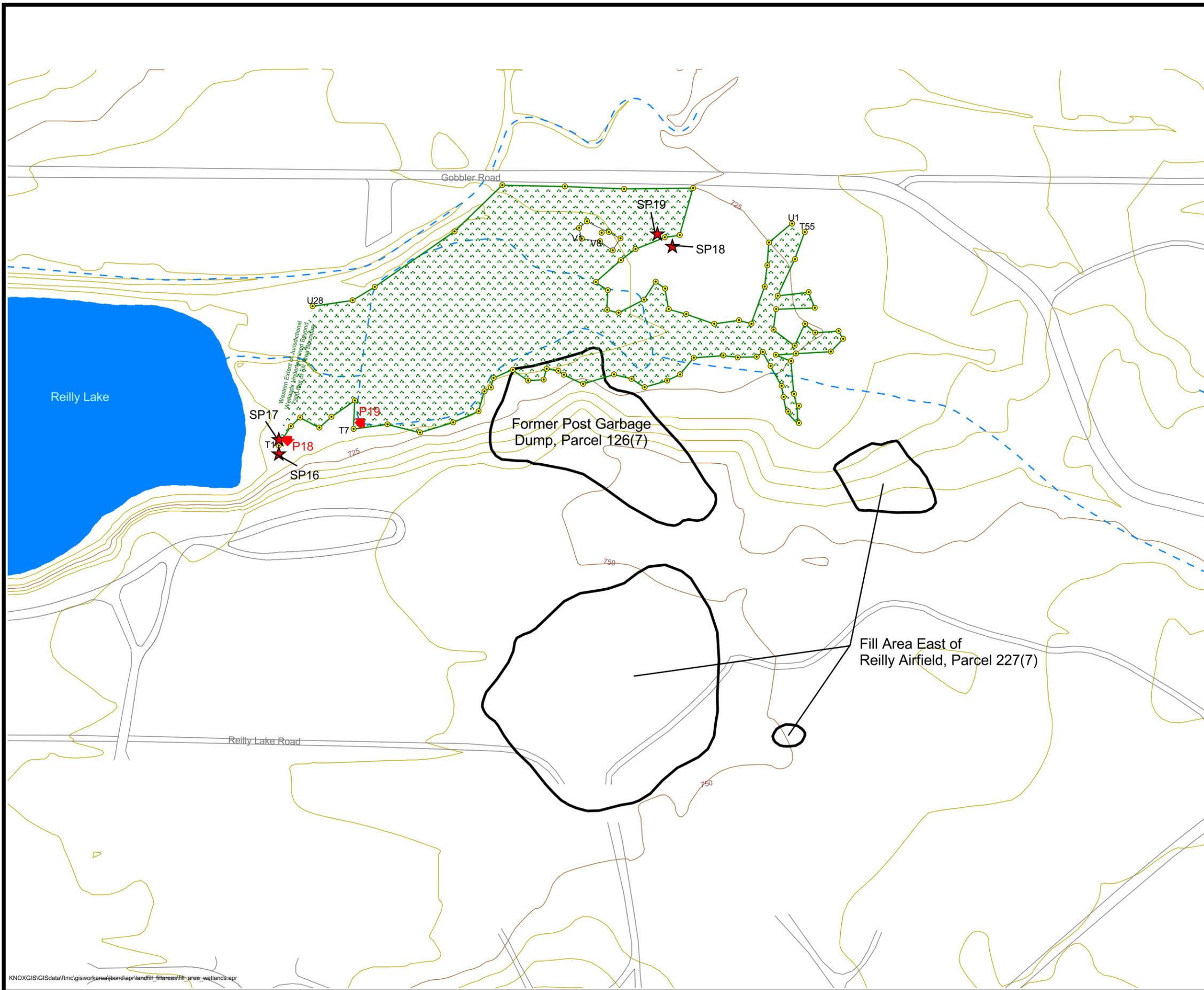


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Contract No. DACA21-96-D-0018

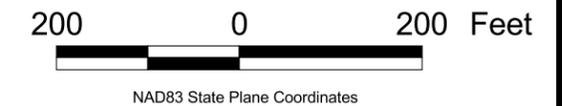
Figure 4-6 Wetland Determination

Fill Area East of Reilly Airfield, Parcel 227(7),
and Former Post Garbage Dump, Parcel 126(7)
Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)



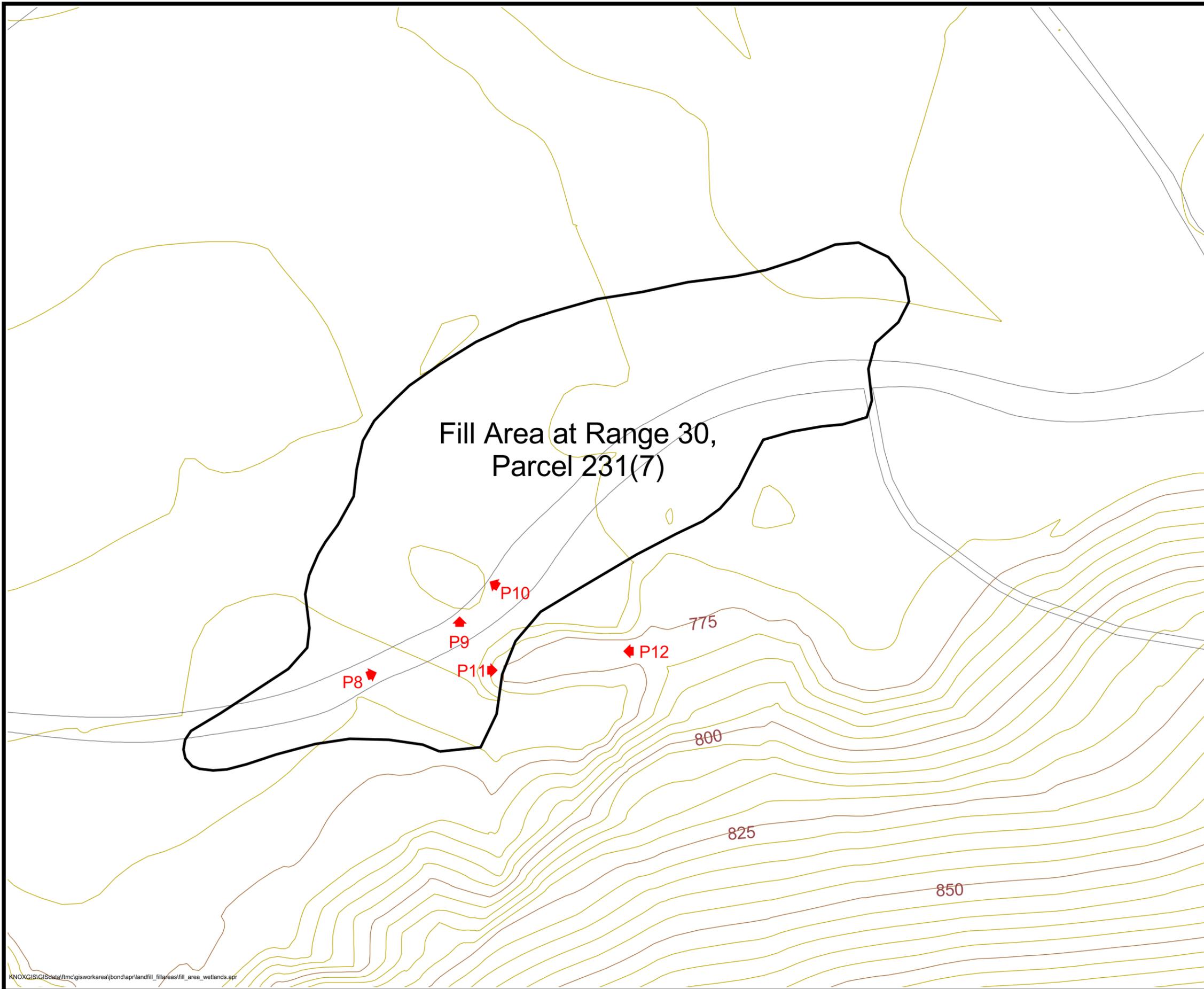
 Shaw Environmental, Inc.



Contract No. DACA21-96-D-0018

Figure 4-8 Wetland Determination

Fill Area at Range 30,
Parcel 231(7)
Fort McClellan, Alabama



Legend

- Wetland Survey Point
- Wetland Data Point
- Photo Point (Arrow Indicates Approximate Direction of Photograph)
- Jurisdictional Waters of the United States
- Jurisdictional Wetland
- Topographic Contour (5-foot interval)
- Surface Drainage Feature (dashed where intermittent)

100 0 100 Feet

NAD83 State Plane Coordinates



 Shaw Environmental, Inc.

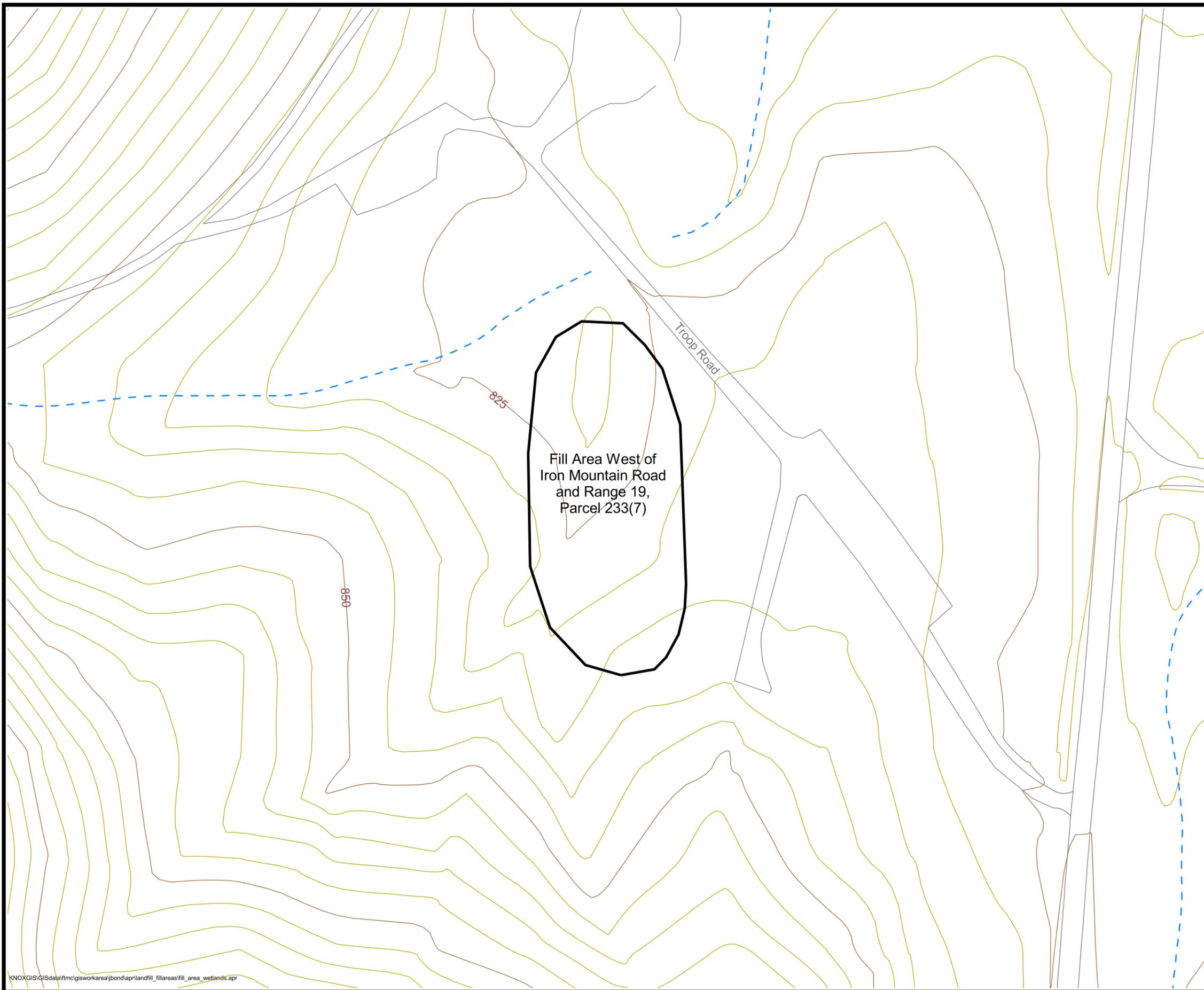


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Figure 4-9 Wetland Determination

Fill Area West of Iron Mountain Road and Range 19, Parcel 233(7) Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)

100 0 100 Feet



NAD83 State Plane Coordinates

N



 Shaw Environmental, Inc.

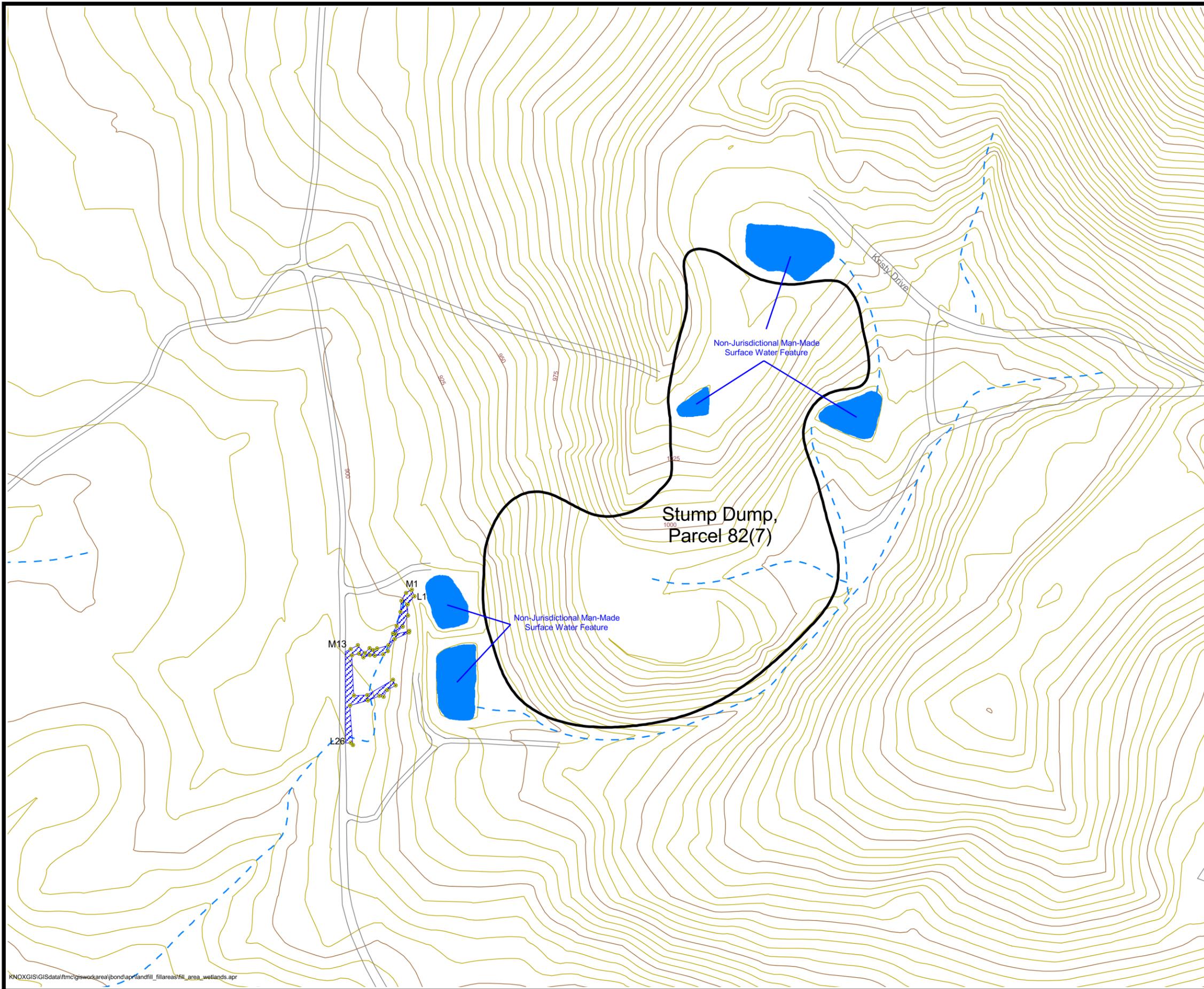


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Contract No. DACA21-96-D-0018

Figure 4-10 Wetland Determination

Stump Dump, Parcel 82(7)
Fort McClellan, Alabama



Legend

-  Wetland Survey Point
-  Wetland Data Point
-  Photo Point (Arrow Indicates Approximate Direction of Photograph)
-  Jurisdictional Waters of the United States
-  Jurisdictional Wetland
-  Topographic Contour (5-foot interval)
-  Surface Drainage Feature (dashed where intermittent)

200 0 200 Feet

NAD83 State Plane Coordinates



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