Document Type: EA-Administrative Record
Index Field: **Final** Environmental Document
Project Name: Section-Dutton Water Plant Expansion
Project Number: 2003-109

ENVIRONMENTAL ASSESSMENT

SECTION AND DUTTON WATER TREATMENT PLANT EXPANSION

Jackson County, Alabama

TENNESSEE VALLEY AUTHORITY
Lead Agency

WATERWORKS BOARDS OF THE TOWNS OF SECTION AND DUTTON
Cooperating Agencies

Environmental Information Provided by

LADD ENVIRONMENTAL CONSULTANTS, INC.
PAYTON BIOLOGICAL SURVEYS
PANAMERICAN CONSULTANTS, INC.

APRIL 2004

For more information, please contact:

Harold M. Draper
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902
Phone: (865) 632-6889
Fax: (865) 632-6855
e-mail: hmdraper@tva.gov

Page intentionally blank

Environmental Assessment **April 2004**

Proposed project: Section and Dutton Water Treatment Plant Expansion
Jackson County, Alabama

Lead agency: TENNESSEE VALLEY AUTHORITY

Cooperating agencies: WATERWORKS BOARDS OF SECTION AND DUTTON
Jerry Hammon
Post Office Box 1159
Rainsville, Alabama 35986
(256) 638-2119

For further information, contact:

Harold M Draper
NEPA Specialist
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902
Phone: 865-632-6889
Fax: 865-632-6855
e-mail: hmdraper@tva.gov

Abstract: TVA proposes to sell approximately 31 acres of TVA property on Guntersville Reservoir, Jackson County, Alabama, to the Water Works Boards of the Towns of Section and Dutton to expand their water treatment plant. A small portion of sale property would be used for sludge drying beds, with the remainder serving as a security buffer for the water plant. No endangered species, wetlands, historic properties, or other important environmental resources are present on the property proposed for sale. The water treatment plant sludge contains water, clay, and sand. Metals of interest in the sludge primarily include aluminum, with trace amounts of heavy metals. The concentrations that would likely result from land application are not expected to be of concern and would pose minimal environmental risks.

Page intentionally blank

TABLE OF CONTENTS

1. PURPOSE OF AND NEED FOR ACTION 2

1.1. Proposed Action 2
1.2. Other Pertinent Environmental Reviews or Documentation 2
1.3. Public Review 3
1.4. Necessary Federal Permits or Licenses 3

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION 5

2.1. Alternatives 5
2.2. The Preferred Alternative 5

3. AFFECTED ENVIRONMENT 7

3.1. Alum Sludge Characteristics and Current Disposal 7
3.2. Terestrial Ecology 9
3.3. Recreation 8
3.4. Cultural Resources 10

4. ENVIRONMENTAL CONSEQUENCES 9

4.1. Land Application of Alum Sludge 9
4.2. Terrestrial Ecology 11
4.3. Recreation 10
4.4. Cultural Resources ..... **Error! Bookmark not defined.**

5. LIST OF PREPARERS 11

5.1. NEPA Project Management 11
5.2. Other TVA Contributor 11

6. LIST OF AGENCIES AND PERSONS CONSULTED 13

7. LITERATURE CITED 16

CHAPTER 1

1. PURPOSE OF AND NEED FOR ACTION

1.1. Proposed Action

The Waterworks Boards of the Towns of Section and Dutton propose to expand their existing drinking water treatment facility on Guntersville Reservoir. Currently, the facility has a capacity of 4 million gallons per day (MGD). The proposed upgrades would expand plant capacity to 8 MGD. This capacity would allow the Section and Dutton water system to serve its current customers better and to meet the needs of future customers due to anticipated growth in rural Jackson and DeKalb Counties. The Section-Dutton Water Treatment Plant produces water for approximately 24,000 people, and 660 additional commercial, farm, and industrial water users in the Sand Mountain area. The utility sells water to other utilities in the Jackson and DeKalb County areas. A couple of these utilities are outside of the Tennessee River basin, but there is not expected to be a net interbasin transfer of water. The water treatment plant additions and renovations would provide the filtering and raw water pumping capacity to allow the pumping of 8 MGD. In addition, more buildings would be constructed for chemical storage, and a sludge dewatering facility is proposed to allow the water system to dewater sludge on site, thus providing cost savings and a more efficient operation for the plant.

Sludge is generated when filters are cleaned (backwashed) and when sedimentation basins are cleaned. This sludge has accumulated to 825 dry tons. Current plans are to continue to use the existing sedimentation pond, install sludge removal equipment, and pump the sludge to drying beds. Then the sludge would be land applied or stored.

The proposed TVA action to meet this purpose and need is the sale of 31 acres of TVA land adjacent to the current water plant. Approximately 10 acres of the property would be used for sludge-drying beds and land application of sludge and the remainder would serve as a security buffer. A Section 26a permit for the water intake was issued on May 2, 2002. Other federal actions, which were already taken prior to the request for TVA land, included:

- Provision of RUS loan funding for water treatment plant additions and renovations on the existing plant site including the construction of four additional filters, renovation of five existing filters, a new chemical feed and storage facility, additions and renovations to the existing raw water pump station.

- Provision of RUS loan funding for new storage tanks in Geraldine and Section.

1.2. Other Pertinent Environmental Reviews or Documentation

The Waterworks Boards prepared an Environmental Information Document in July 2002 in support of their application for RUS funding for the treatment plant expansion. This document is attached and incorporated by reference into this Environmental Assessment (EA).

1.3. Public Review

The Draft EA was circulated to the Alabama Department of Conservation and Natural Resources, Alabama Department of Environmental Management, Alabama Historical Commission, Top of Alabama Regional Council of Governments, and the U.S. Fish and Wildlife Service for comment. Public notice of the proposed land sale was made at the same time in the Advertiser-Gleam (Guntersville), Scottsboro Daily Sentinel, and the TVA web site. By letter of April 5, 2004, the Alabama Historical Commission responded that the document adequately reflects their comments regarding cultural resources. They also requested that a stipulation be placed in construction plans to cease work if artifacts or archaeological features are encountered during project activities. No other comments were received in response to these notification efforts.

Figure 1-1. Vicinity Map of Proposed TVA Property Sale for Waterworks Boards of Towns of Section and Dutton

1.4. Necessary Federal Permits or Licenses

In addition to the Section 404 and Section 26a permits for the water intake, the water treatment plant holds a National Pollution Discharge Elimination System (NPDES) Permit for discharge of water from the sludge settling basins into Guntersville Reservoir. Additional permits under the Safe Drinking Water Act would be needed to operate the plant at an 8 MGD level. No solid waste permits are expected to be needed for land application of sludge.

CHAPTER 2

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The Waterworks Boards considered several alternatives for disposition of the alum sludge from the water treatment plant. Instead of constructing large drying beds, vacuum drying beds could be constructed on less land. However, the sludge would still need to be disposed of somewhere. The site location in a narrow riverine corridor at the base of the Cumberland escarpment would make off-site hauling to a landfill or a farm for land application costly. The nearest potential site for land application of sludge would be six or more miles from the plant. The alternatives available to TVA are No Action (do not sell the property) or Action (sell the property). TVA also could consider selling a smaller area of land; however, because of the necessity of the larger acreage to fulfill the project purpose of expanding the capacity of the water treatment plant, an alternative that would propose selling a smaller acreage was not deemed reasonable.

2.1. Alternatives

Alternative A – The No Action Alternative

Under No Action, TVA would not sell its property. The Waterworks Boards would likely pursue other sludge drying alternatives, such as vacuum drying beds and off-site hauling of alum sludge. The TVA property would remain in Natural Resource Conservation zoning and available to the public for uses such as hiking, hunting, and wildlife observation.

Alternative B – Sell 31 Acres to Water Works Boards

Under Alternative B, TVA would sell the 31 acres of property requested by the Waterworks Boards. If the Boards were the successful bidder in a sale conducted under Section 31 of the TVA Act, the Boards would construct a series of 75’ by 75’ drying beds on TVA property and clear property for use in land application of sludge. An existing TVA road easement right-of-way used by the Waterworks Boards to access tanks used in pumping water up the escarpment would be abandoned, since the property would now be in their fee ownership. Access to the property would be controlled by the Waterworks Boards and would likely not be available for general public use. If other entities were the successful bidder, the property would likely be used for rural residential or undeveloped property similar to other tracts along the Sand Mountain escarpment.

2.2. The Preferred Alternative

TVA’s preferred alternative is Alternative B, Sell 31 Acres to Waterworks Boards. This would best meet the applicants’ purpose and need for additional property for alum sludge management and water plant security. In addition, there would be minimal or no adverse environmental impacts from this alternative.

CHAPTER 3

3. AFFECTED ENVIRONMENT

The Waterworks Boards of Section and Dutton currently operate a drinking water treatment plant on 7.6 acres of TVA land adjacent to Jackson County Road (CR) 67 approximately 0.5 mile north of the Chisenhall Springs embayment of Guntersville Reservoir and 3 miles south of Alabama State Route (SR) 35 and the B.B. Comer Bridge crossing of Guntersville Reservoir. The 31-acre TVA tract of land proposed for sale is located immediately adjacent to the treatment plant and to the north of the plant. The Waterworks Boards currently hold a 60-foot right-of-way easement across the 31-acre tract to allow use of the Old Section Ferry Road to access water tank facilities on the escarpment.

Other past, present, and reasonably foreseeable actions that have the potential to cumulatively affect resources involved in the proposed land sale include the four-lane upgrades to SR 35 between Scottsboro and Fort Payne and the possible future interconnection of the Section-Dutton and Scottsboro water systems.

3.1. Alum Sludge Characteristics and Current Disposal

Currently, the Waterworks Boards facility produces alum sludge as a result of the water treatment process. Surface water from Guntersville Reservoir is treated to remove silt and detritus. Alum and polymers are added to remove additional impurities. Wastewater sludge consists of silt, detritus, inerts, organics, calcium carbonate, aluminum hydroxide, magnesium hydroxide, sands, and clay. During the summer, sludge may include algae. Samples of the sludge from the existing settling basin were analyzed in 2002. The major component of sludge in the basin was found to be water, with smaller amounts of clay and sand. Aluminum oxide was determined to average 12.6 percent by weight. Calcium and magnesium were also found in the sludge, at levels ranging from 900 to 3000 parts per million (ppm). Other metals present in the sludge were lead (1.7 ppm), mercury (0.36 ppm), arsenic (1.55 ppm), and chromium (2.1 ppm). These levels were below the thresholds that would classify the sludge as hazardous waste under the Resource Conservation and Recovery Act (RCRA). The sludge has not been tested for other hazardous wastes including cadmium, nickel, copper, zinc, and manganese. The pH of the sludge is between 6.0 and 6.8, which is near neutral in acidity. The material is accumulated on site for two to three years in a sludge-drying basin, then pressed to remove water and transported to a permitted landfill for disposal.

3.2. Terrestrial Ecology

The proposed sale tract is located in the Plateau Escarpment Ecoregion as designated by EPA and Alabama state agencies. Guntersville Reservoir is located in the Sequatchie Valley, while Section and Dutton and most of the water system customers are located in the Plateau area (EPA, 2001). These three distinct ecological subregions are all subdivisions of the Southwestern Appalachians Ecoregion, which stretches from Kentucky to Alabama.

The tract is steep and rocky with numerous large limestone boulders. With the exception of a power line right-of-way along the southern property line, the entire tract is forested, with numerous red cedars, shagbark hickory, oaks, and other small hardwoods. An old roadbed (Old Section Ferry Road), occasionally used by the Waterworks Boards for access to a

water tank on the escarpment, extends north-south through the middle of the property. The tract was surveyed for endangered and threatened species, but no federally-listed species were found to be present on the property.

3.3. Recreation

Other than occasional hikers and hunters, there is limited use of the 31-acre tract. TVA Planned Tract XGR-189PT2, which is across CR 67, is designated for Public Recreation. This is used for a boating access area. Facilities include a boat ramp, parking area, and courtesy dock. These facilities are maintained by the Alabama Department of Conservation and Natural Resources.

3.4. Cultural Resources

Several historic building sites are known from the area near the 31-acre tract, including the site of the Hales Chapel School, which adjoins the northern tip of the property. A pedestrian walkover and cultural resources survey was conducted in August 2003. Evidence of a late nineteenth or early twentieth century house was found, but no structural remains were found and the site was determined to offer no additional research potential. An archaeological site (1 Ja 1030) was identified on the 31-acre tract but was determined to be ineligible for the National Register of Historic Places. The survey concluded that no historic properties eligible for the National Register of Historic Places are found on the TVA tract proposed for sale.

CHAPTER 4

4. ENVIRONMENTAL CONSEQUENCES

The primary environmental consequences evaluated are the loss of terrestrial habitat from forest removal of up to 10 acres of the 31-acre tract and the impacts of land application of alum sludge on the sale property and Guntersville Reservoir. These impacts are discussed below.

4.1. Land Application of Alum Sludge

Alternative A

Under the No Action Alternative, the land would remain forested and not be used for water treatment sludge application. Vacuum-drying beds would be used to pull extra water out of the sludge. The sludge would likely be transported elsewhere to a landfill or land applied on agricultural property within Jackson County. Land application sites chosen would be outside of floodplains and away from stream banks. Prior to land disposal, the sludge would have to be tested for RCRA metals to ensure that it is below the threshold that would classify the material as hazardous waste. Because the pH of the sludge is near neutral, the aluminum is largely insoluble and would not be expected to be toxic to plants. Application levels up to 30 tons per acre are possible. While land application (beneficial use) of sludge is a possibility, it is likely to be similar in cost to hauling the sludge to a landfill.

Alternative B

Under Alternative B, about 10 acres of the 31-acre TVA tract would be cleared and developed for drying beds for sludge, a land application area, and clear well expansion. The drying beds would be about 75-feet by 75 feet in dimension. The sludge would be land applied on the TVA property and mixed in with the soil. Impacts of this application would be expected to be similar to agricultural application of sludge. Alum would be applied at levels up to 30 tons per acre and plowed into the top 2 feet of soil. Grass or other plants tolerant of alum sludge would be planted. The low heavy metal concentrations would likely be stabilized in soil and not be susceptible to runoff to Guntersville Reservoir. If sludge quantities exceed that which can be land applied, the sludge would be stored or hauled to a landfill.

4.2 Terrestrial Ecology

Alternative A

No land clearing of the TVA property is expected under the No Action alternative, and no impacts to terrestrial ecology are expected.

Alternative B

Up to 10 acres of the lowland area of the tract could be cleared and used for land application of alum sludge. The remaining 20 acres would likely remain forested and serve as a buffer for the treatment plant. No unique resources were identified on the sale tract

and the clearing would represent a small percentage of forested property in the Plateau Escarpment Ecoregion. The SR 35 road widening project in the escarpment and the possible future construction of an interconnector water line to Scottsboro would likely take place within or closely adjacent to existing road rights of way and similarly have minimal effects on the total forested habitat in the region. Cumulative effects on terrestrial ecology would likely be insignificant. By letter of September 30, 2003, the U.S. Fish and Wildlife Service agreed that no further endangered species consultation was needed prior to implementation of the water plant expansion. The tract was surveyed for wetlands by the U.S. Army Corps of Engineers, and no wetlands were found. By letter of July 22, 2003, no Section 404 permits were determined to be needed for construction of the sludge drying beds or land application of sludge. By letter of June 5, 2002, the Natural Resources Conservation Service verified that no prime farmland existed on the TVA property.

4.3 Recreation

Alternative A
No impacts to recreation would occur. The land would continue to be available to the public for informal recreation use, including hiking, hunting, and wildlife observation.

Alternative B
Public recreation use of the 31-acre tract would not be available. The state-operated boat ramp across the road from the 31-acre tract would not be affected by expanded operation of the water treatment plant. There would be some loss of informal public use on the tract, but there are abundant acreages of other public land in the area providing the same types of recreation opportunities.

4.4 Cultural Resources

Alternative A
No impacts to cultural resources would occur.

Alternative B
By letter of August 29, 2003, TVA provided its determination that no historic properties would be affected by TVA's action of selling property to the Waterworks Boards. By letter of September 30, 2003, the Alabama Historical Commission concurred with TVA's findings.

CHAPTER 5

5. LIST OF PREPARERS

5.1. NEPA Project Management

Harold M. Draper

Position:	NEPA Specialist
Education/Experience:	B.S. Botany; B.S. Conservation; MS, D.Sc., Engineering and Policy; 13 years experience in NEPA document preparation; 7 years experience in state renewable energy programs
Involvement:	Document preparation

5.2. Other TVA Contributor

Phil Mummert

Involvement:	Solid Waste reviewer

CHAPTER 6

6. LIST OF AGENCIES AND PERSONS CONSULTED

Federal Agencies

U.S. Fish and Wildlife Service

State Agencies

Alabama Department of Conservation and Natural Resources
Alabama Department of Environmental Management
Alabama Historical Commission
Top of Alabama Regional Council of Governments

CHAPTER 7

7. LITERATURE CITED

EPA 2001. Ecoregions of Alabama. G. E. Griffith, J. M. Omernik, J.A. Comstock, G. Martin, A. Goddard, and V.J. Hulcher. U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, Oregon.