Draft
Delisting Decision
for
UT 2-S to Lake Frank Jackson

Waterbody ID # AL03140103-0102-700

Organic Enrichment/Dissolved Oxygen (OE/DO)

Alabama Department of Environmental Management
Water Quality Branch
Water Division
December 2013

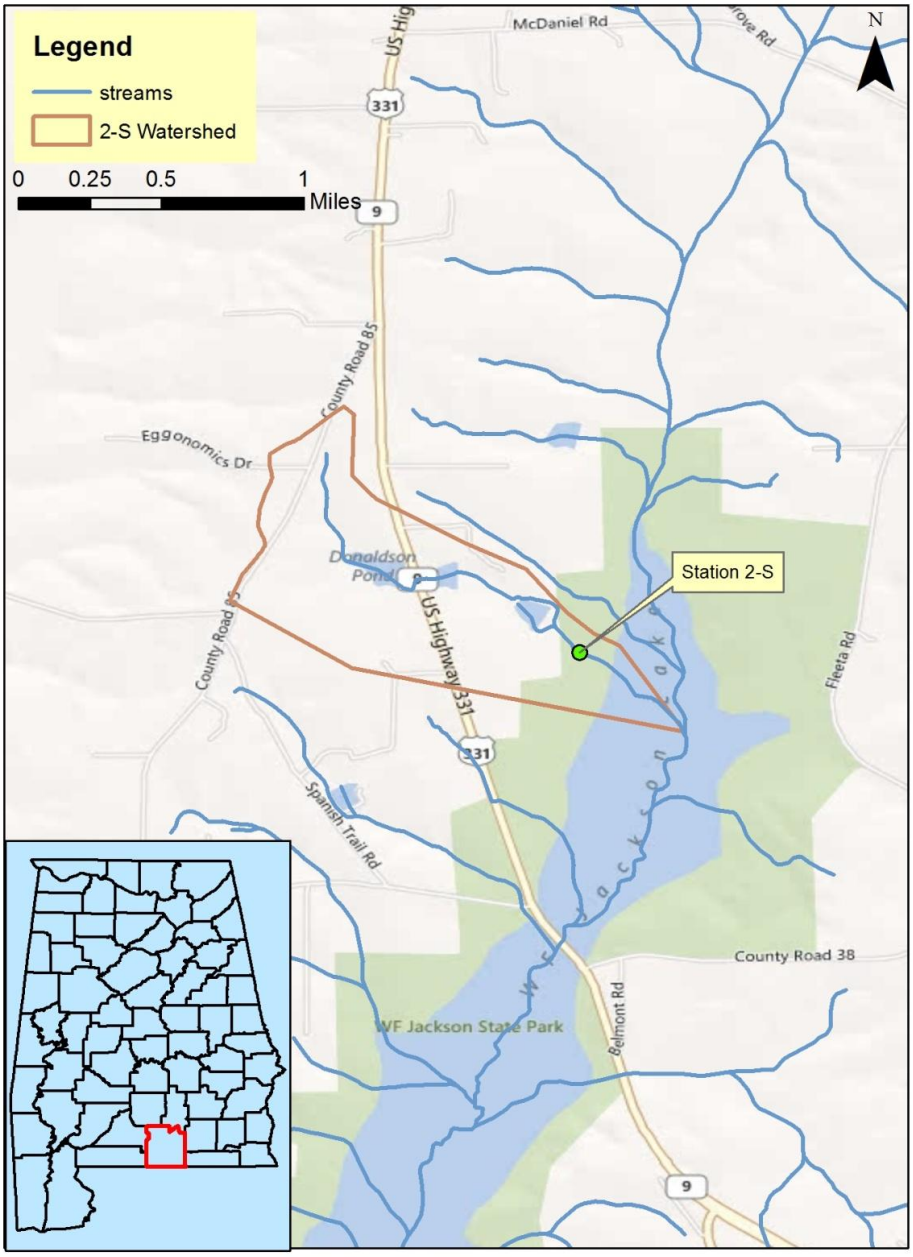

Figure 1: UT 2-S to Lake Frank Jackson Watershed Map

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1.0 Executive Summary

UT 2-S to Lake Frank Jackson, located in Covington County, is a part of the Perdido-Escambia River Basin. UT 2-S to Lake Frank Jackson originates west of the town of Opp and runs approximately 1.77 miles until it empties into Lake Frank Jackson. Lake Frank Jackson is an impoundment of Lightwood Knot Creek, which empties into the Yellow River. As a result of the findings from the 1996-1997 Geological Survey of Alabama study UT 2-S to Lake Frank Jackson, from Lake Frank Jackson to its source, was an addition to the State of Alabama's 303(d) list in 1998 impaired by OE/DO. Table 1.1 below presents the use classification, year placed on the §303(d) list, and causes of impairment for UT 2-S to Lake Frank Jackson.

Table 1: Use Classification for UT 2-S to Lake Frank Jackson

Waterbody Name and ID	Use Classification	Year Placed on the 303(d) List	Causes	Comments
UT 2-S to Lake Frank Jackson AL/03140103-0102-800	Fish and Wildlife	1998	Organic Enrichment (CBOD, NBOD)	This delisting document addresses OE/DO

Over the last six years, additional data has been acquired for UT 2-S to Lake Frank Jackson to assess its ability to support its use classification. The data indicates that UT to Lake Frank Jackson (2-S), from Lake Frank Jackson to its source, meets water quality criteria with respect to dissolved oxygen (DO). The low dissolved oxygen levels reported below 5.0 mg/L are due to natural conditions and not organic enrichment (OE). This document addresses the delisting of OE/DO for the UT 2-S to Lake Frank Jackson.

Based on an assessment of all available data, ADEM has determined that water quality impairment due to OE/DO is due to natural conditions. Therefore, ADEM will not develop a TMDL due to "natural conditions" which is just cause for delisting a waterbody according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

2.0 Basis for §303(d) Listing

2.1 Introduction

Section 303(d) of the Clean Water Act (CWA) as amended by the Water Quality Act of 1987 and EPA's Water Quality Planning and Management Regulations [(Title 40 of the Code of Federal Regulations (CFR), Part 130)] requires states to identify waterbodies which are not meeting water quality standards applicable to their designated use classifications. The identified waters are prioritized based on severity of pollution with respect to designated use classifications. TMDLs for all pollutants causing violation of applicable water quality standards are established for each identified water. Such loads are established at levels

necessary to implement the applicable water quality standards with seasonal variations and margins of safety. The TMDL process establishes the allowable loading of pollutants, or other quantifiable parameters for a waterbody, based on the relationship between pollution sources and in-stream water quality conditions, so that states can establish water-quality based controls to reduce pollution from both point and non-point sources and restore and maintain the quality of their water resources (USEPA, 1991).

The §303(d) list states that the UT to Lake Frank Jackson (Segment 2-S) is impaired for a length of 1.77 miles from Lake Frank Jackson to its source. The UT to Lake Frank Jackson was placed on the 1998 §303(d) list for OE/DO by EPA based on data obtained from the Geological Survey of Alabama.

Table 2: EPA Basis for Listing UT 2-S to Lake Frank Jackson

Waterbody ID	Waterbody Name	River Basin	County	Reason for Listing
AL/03140103-0102-800	UT 2-S to Lake Frank Jackson	Perdido-Escambia	Covington	20 of 34 dissolved oxygen measurements < 5.0 mg/l,

3.0 Technical Basis for Delisting Decision

3.1 Water Quality Target Identification

ADEM's Water Quality Criteria (Administrative Code 335-6-10-.09 (5) (e) 4 i.), states:

For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations shall not be less than 5 mg/l at all times; except under extreme conditions due to natural causes, it may range between 5 mg/l and 4 mg/l, provided that the water quality is favorable in all other parameters. The normal seasonal and daily fluctuations shall be maintained above these levels. In no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing hydroelectric generation impoundments. All new hydroelectric generation impoundments, including addition of new hydroelectric generation units to existing impoundments, shall be designed so that the discharge will contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency, in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities.

For the purpose of this assessing this delisting, a minimum dissolved oxygen level of 5 mg/l will be the criteria.

3.2 Data Availability and Analysis

UT 2-S to Lake Frank Jackson was sampled again in 2007, 2011 and 2012 as part of the ADEM's 303(d) Monitoring Program. In addressing the OE/DO impairment, data was collected at the only station on the UT to Lake Frank Jackson (Segment 2-S). Table 3 below gives a more detailed description of the sampling location along UT 2-S to Lake Frank Jackson. Figure 1 provides a visual description of the sampling locations.

Table 3: UT 2-S to Lake Frank Jackson Sampling Stations

Station ID	Station Description	Latitude	Longitude
2-S	Unnamed Tributary to Lake Frank Jackson on Private Property in T4N, R18E, S5, SE 1/4	31.34195	-86.26435

In 2007, 2011 and 2012 there were 35 attempts to measure the dissolved oxygen levels, measure the flow rate, as well as collect Carbonaceous Biochemical Oxygen Demand- 5 day (CBOD5), Ammonia-Nitrogen (NH_3-N), Nitrate-Nitrite (NO_3^--NO_2^-) and Total Kjeldahl Nitrogen (TKN) samples for laboratory analysis. Of these 35 attempts the stream was found to be dry on twenty of those days. Of those twenty days that there was water available to sample, only one of those days was there sufficient water to undertake a flow measurement. The primary reason for this is the UT has a drainage area of approximately 0.73 square miles. With such a small drainage area there is only flow in the UT when there is a significant rainfall event in the watershed. According to ADEM Admin Code r.335-6-10-.09 4. (i) the purpose of the dissolved oxygen standard is to support a diversified warm water biota. Without sufficient flow there can be no diversified warm water biota. According to ADEM's observations of this waterbody, it is evident that this is an ephemeral headwater stream that conveys water during wet weather events and does not maintain a base flow year round.

Additionally, the laboratory results from the successful sampling events reported very low levels of oxygen demanding pollutants when the DO criterion was violated. Table 4 below, shows the violation events of the last six years and the results of laboratory testing for oxygen demanding pollutants from those sampling events. This shows that the low levels of dissolved oxygen are not occurring due to increased levels of oxygen demanding pollutants.

Table 4: Dissolved Oxygen Violation Events and Corresponding Laboratory Results

Station ID	Activity Date	DO mgl	Flow CFS	CBOD5 mgl	NH3 mgl	NO3 NO2 N mgl	TKN mgl	T H2O C
2-S	7/18/2011	2.09						23.76
2-S	5/7/2012	1.9		< MDL 2	< MDL .007	< MDL .002	0.465	18.9
2-S	8/21/2012	2.1		< MDL 2	0.05	0.125	0.338	23.84

4.0 Conclusions

From examination of all available data for UT 2-S to Lake Frank Jackson, ADEM has determined that an organic enrichment/dissolved oxygen (OE/DO) impairment does not currently exist. The low levels of dissolved oxygen are attributable to the natural conditions. These natural conditions are primarily attributable to this waterbody being an ephemeral headwater stream that dries up during most months of the year and flows primarily as a result of wet weather events. Therefore, ADEM will not develop a TMDL due to "natural conditions" which is a just cause for delisting waterbodies according to Title 40 of the Code of Federal Regulations (CFR), Part 130.7(b)(6)(iv).

5.0 Public Participation

As part of the public participation process, this Delisting Decision (DD) will be placed on public notice and made available for review and comment. A public notice will be prepared and published in the major daily newspapers in Montgomery, Huntsville, Birmingham, and Mobile, as well as submitted to persons who have requested to be on ADEM's postal and electronic mailing distributions. In addition, the public notice and subject DD will be made available on ADEM's Website: www.adem.state.al.us. The public can also request hard or electronic copies of the DD by contacting Mr. Chris Johnson at 334-271-7827 or clj@adem.state.al.us. The public will be given an opportunity to review the DD and submit comments to the Department in writing. At the end of the comment period, all written comments received during the public notice period will become part of the administrative record. ADEM will consider all comments received by the public prior to final completion of this DD and subsequent submission to EPA Region 4 for final approval.

6.0 Appendix

6.1 References

ADEM Administrative Code, 2013. Water Quality Program, Chapter 335-6-10, Water Quality Criteria, and Chapter 335-6-11 Use Classifications for Interstate and Intrastate Waters.

Alabama Department of Environmental Management's 303(d) Monitoring Program. 2012-2013.

Alabama's 1996 Clean Water Strategy Report. Alabama Department of Environmental Management (ADEM).

Alabama Department of Environmental Management (ADEM). Alabama's Water Quality Assessment and Listing Methodology, January 2012.

United States Environmental Protection Agency. 1991. Guidance for Water Quality-Based Decisions: The TMDL Process, Office of Water, EPA 440/4-91-001.

Geological Survey of Alabama. Section 319 National monitoring Program Project for Lightwood Knot Creek Watershed in Southeast Alabama: A Report to the Alabama Department of Environmental Management for the Period, April 1, 1996- June 30, 1996, 1996

6.2 Water Quality Data

Station ID	Activity Date	DO mgl	Flow CFS	CBOD5 mgl	NH3 mgl	NO3-NO2 N mgl	TKN mgl	T H2O C	SV Comments
2-S	3/15/2007	6.96		2.7	< MDL .015	1.447	1.142	17	Very low flow too shallow for meter.
2-S	4/18/2007	6.9		2.2	< MDL .015	1.464	0.227	15	Very low flow too shallow for meter.
2-S	5/2/2007	6.66		1.2	< MDL .015	0.838	0.509	16	Very low flow too shallow for meter.
2-S	5/3/2007	6.2						18	Very low flow too shallow for meter.
2-S	5/10/2007	5.7						18	Very low flow too shallow for meter.
2-S	5/14/2007	5.5						20	Very low flow too shallow for meter.
2-S	6/12/2007								Dry streambed.
2-S	7/12/2007								Dry streambed.
2-S	8/14/2007								Dry streambed.
2-S	9/26/2007								Dry streambed.
2-S	10/16/2007								Dry streambed.
2-S	3/24/2011	5.3						18.59	Very low flow too shallow for meter.
2-S	4/14/2011	5.41						17.07	Very low flow too shallow for meter.
2-S	5/2/2011								Dry streambed.
2-S	6/13/2011								Dry stream bed.
2-S	6/30/2011								Dry streambed.
2-S	7/11/2011								Dry streambed.

Station ID	Activity Date	DO mgl	Flow CFS	CBOD5 mgl	NH3 mgl	NO3-NO2 N mgl	TKN mgl	T H2O C	SV Comments
2-S	7/18/2011	2.09						23.76	
2-S	7/25/2011								Dry streambed.
2-S	7/28/2011								Dry streambed.
2-S	8/18/2011								Dry streambed.
2-S	8/24/2011								Dry streambed.
2-S	8/25/2011								Dry streambed.
2-S	9/8/2011								Dry streambed.
2-S	9/15/2011								Dry streambed.
2-S	10/5/2011								Dry streambed.
2-S	4/18/2012	6.8		< MDL 2	0.015	0.762	0.752	18.69	Very low flow too shallow for meter.
2-S	5/7/2012	1.9		< MDL 2	< MDL .007	< MDL .002	0.465	18.9	Very low flow too shallow for meter.
2-S	6/5/2012								Dry streambed.
2-S	7/17/2012								Dry streambed.
2-S	8/21/2012	2.1		< MDL 2	0.05	0.125	0.338	23.84	Very low flow too shallow for meter.
2-S	9/11/2012	6.82		< MDL 2	< MDL .008	0.281	0.349	20.13	Very low flow too shallow for meter.
2-S	10/2/2012	6.91		< MDL 2	0.02	0.374	0.155	20.8	Very low flow too shallow for meter.
2-S	11/27/2012	6.01	0.0597	< MDL 2	0.021	3.723	0.652	12.35	

6.3 GSA Data Used for Original Listing

Date	Flow (cfs)	Dissolved Oxygen (mg/l)
4/4/1996	0.13	6.0
4/11/1996	0.03	7.3
4/16/1996	0.22	7.3
4/24/1996	0.44	8.5
5/2/1996	0.13	5.4
5/8/1996	0.03	4.6
5/16/1996	0.03	4.4
5/22/1996	0.02	3.9
5/29/1996	0.05	4
6/6/1996	0.01	3.5
6/13/1996	0.02	3.3
6/20/1996	0.02	4.9
6/27/1996	0.02	4.4

6.4 Photographs

Figure 2: UT to Frank Jackson Lake (2-S) June 5, 2012 - Looking downstream

Figure 3: UT to Frank Jackson Lake (2-S) July 7, 2012 - Looking Downstream

Figure 4: 2-S July 7th, 2011 Looking Upstream

Figure 5 :2-S June 13th, 2011 Looking Upstream