

River Valley Ingredients (Tyson Farms, Inc) Wastewater Release

Master ID 892 NPDES Permit AL0040843

June 6, 2019

A release of partially treated wastewater occurred at the River Valley Ingredients plant resulting in an unpermitted discharge to Dave Young Creek and the Mulberry Fork River. The initial volume of the release was estimated between 180,000 and 800,000 gallons. Later calculations by the facility resulted in an estimate of 220,000 gallons as the release volume. The facility filed NRC report #1248248

Cura Emergency Services was contracted by the facility to manage the response operations. Tyson will be providing the Department a report detailing contractor response activities associated with the spill response.

ADEM's Paul Ennis and Shawn LaGrone were dispatched to the facility on the morning of June 6th to document conditions and observe initial response activities at the facility. ADCNR was notified of the developing fish kill and Keith Floyd, Division 1 Fisheries Biologist was dispatched to the site to assist ADEM with the fish kill investigation.

Cura and Tyson personnel were instructed to collect downstream water samples at three locations on the Mulberry Fork River on June 6th and have them analyzed for the facility discharge permit parameters.

ADEM's Bruce Freeman deployed on the afternoon of June 6th to begin tracking the released material as it flowed down the Mulberry Fork River. An assessment was conducted at the I-65 Bridge at approximately 6:00 PM on June 6th. The Dissolved Oxygen (DO) level at this location was 0.26 mg/l and an E. coli sample collected at the same time was >9,678.4 MPN/dl. There were dead and dying fish observed at this location. A water quality sample was collected at this location. See Attachment B for laboratory reports / analytical data.

The I-65 Bridge is approximately 6 river miles downstream of the facility.

See Attachment A for photographs.

ADCNR personnel: Keith Floyd, Division 1 Fisheries Biologist Supervisor

ADEM personnel: Paul Ennis, Emergency Response Staff
Shawn LaGrone, Ambient Unit Chief
Bruce Freeman, Decatur Branch Chief

June 7, 2019

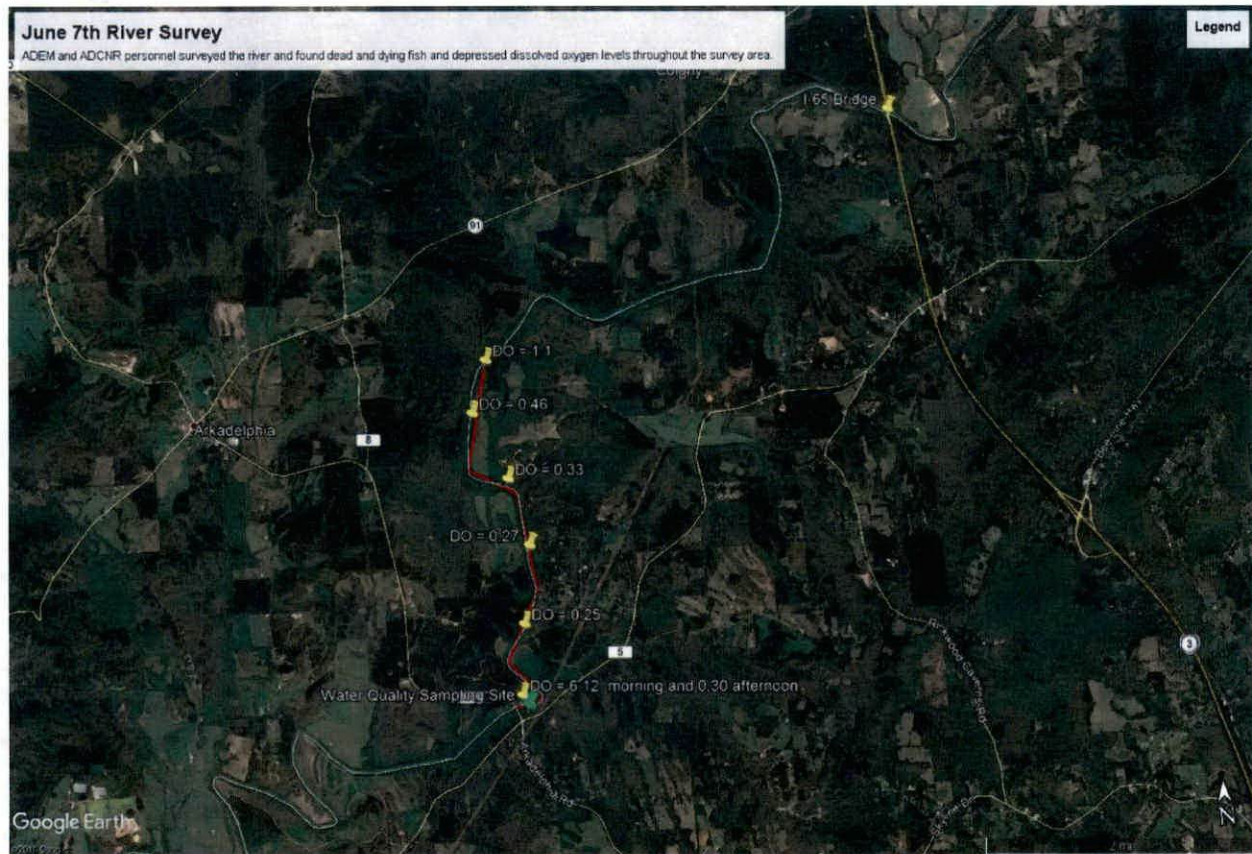
The following day assessments of the Mulberry Fork River moved further downstream to the County Road 35 site, which is approximately 14 river miles downstream of the facility. At 9:30 AM, the DO reading at County Road 35 was 6.12 mg/l and at 10:30 AM it had decreased to 5.82 mg/l. This appeared to be the front edge of the plume of released material. Fish were not distressed or dead at this location at this time. The team transitioned upstream throughout the day and began to observe depressed DO levels. Dead or dying fish were observed for about a three mile stretch going upstream on the Mulberry Fork River before finding DO levels recovering to 6.08 mg/l range upstream of the plume of released material at the I-65 Bridge.

Upon returning to the County Road 35 site at 4:00 PM, it was noted that fish were now dead and dying and the DO level had decreased to 0.3 mg/l. An E.coli sample was collected at this location and the results were 10,462 MPN/dl.

ADEM staff collected an additional water quality sample on the afternoon of June 7th at the County Road 35 location. See Attachment B for laboratory reports / analytical data.

By approximately 8:00 PM it was observed that DO levels began to recover at the County Road 35 site to a level of 5.2 mg/l. Rain had begun to influence the Mulberry Fork River at this time.

A background E. coli sample was also collected above the facility outfall on the afternoon of June 7th. The results were 104.6 MPN/dl.



ADCNR personnel: Keith Floyd, Division1 Fisheries Biologist, Supervisor
Chris McKee, Division 1 Fisheries Biologist

ADEM personnel: Cal Johnson, Emergency Response / Ichthyologist
Ryan Baty, Emergency Response
Bruce Freeman, Decatur Branch Chief
Shawn LaGrone, Ambient Unit Chief

June 8, 2019

ADEM and ADCNR staff again deployed to the Mulberry Fork River on June 8th. The plume of released material had moved below County Road 35 at this time based on near normal DO levels at this location. Due to local rainfall, the flow in the Mulberry Fork River had also begun to increase by the morning of June 8th.

Observations approximately 3 miles downstream of County Road 35 identified the upper end of the plume of the released material. Additional downstream observations were made that also identified depressed DO levels. The next access point was at the confluence of the Mulberry Fork River with the Sipsey River. The confluence of the rivers is approximately 28 miles downstream of the facility and 14 miles downstream from the County Road 35 site. There were no indications by the end of the day on June 8th that the plume had reached or impacted the confluence of the two rivers. The DO at the confluence of the Mulberry and Sipsey Rivers was 6.89 mg/l at 6:00 PM.



ADCNR personnel: Keith Floyd, Division 1 Fisheries Biologist, Supervisor
 Chris McKee, Division 1 Fisheries Biologist

ADEM personnel: Cal Johnson, Emergency Response/Ichthyologist
 Ryan Baty, Emergency Response
 Bruce Freeman, Decatur Branch Chief

June 9, 2019

Early morning observations on June 9th indicated that the flow of water in the Mulberry Fork River and the Sipsey River had risen rapidly overnight. There were indications of low DO levels and distressed fish observed at the confluence of the two rivers by ADCNR staff. Downstream assessments were begun to determine where the majority of the dead fish had been deposited by the increase flow and water levels in the river system. The majority of the fish were located upstream of the I-22 Bridge and below the confluence of the Mulberry and Sipsey Rivers.

ADCNR staff recorded the DO readings on June 9th and will be included in the ADCNR Fish Kill Report.

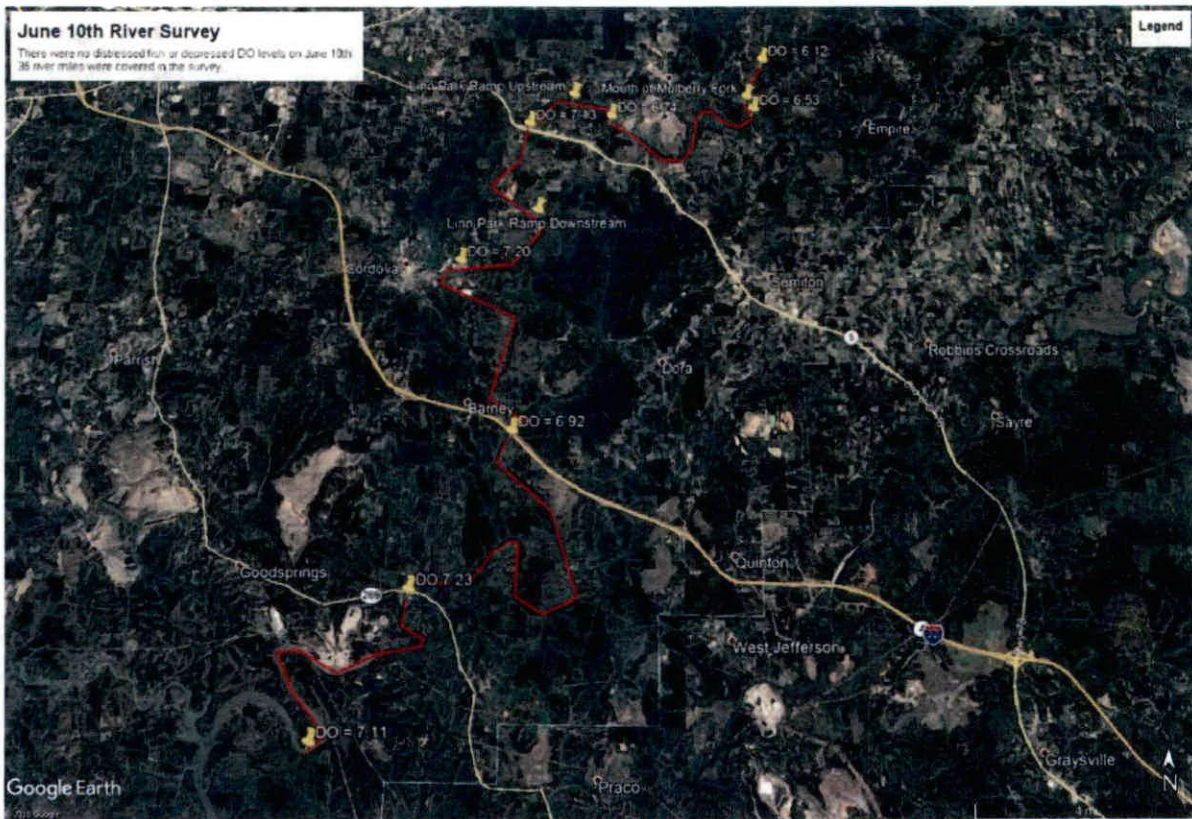
Facility personnel and their contractors began to mobilize to collect dead fish.

ADCNR personnel: Chris McKee, Division 1 Fisheries Biologist

ADEM personnel: Bruce Freeman, Decatur Branch Chief

June 10, 2019

River observations on June 10th documented that the rising river levels and rainwater from previous days of rain had diminished any residual impact of the release. There were no dying or distressed fish at any observed location throughout the river system. DO levels were back to normal levels for the Mulberry Fork and Sipsey Rivers at all survey locations.



ADEM assessed the cleanup at the facility and determined that response actions were complete at the facility.

Dead fish collection continued by the facility contractors.

ADCNR personnel: Keith Floyd, Division 1 Fisheries Biologist, Supervisor
Chris McKee, Division 1 Fisheries Biologist

ADEM personnel: Cal Johnson, Emergency Response/ Ichthyologist
Bruce Freeman, Decatur Branch Chief

June 11 and 12, 2019

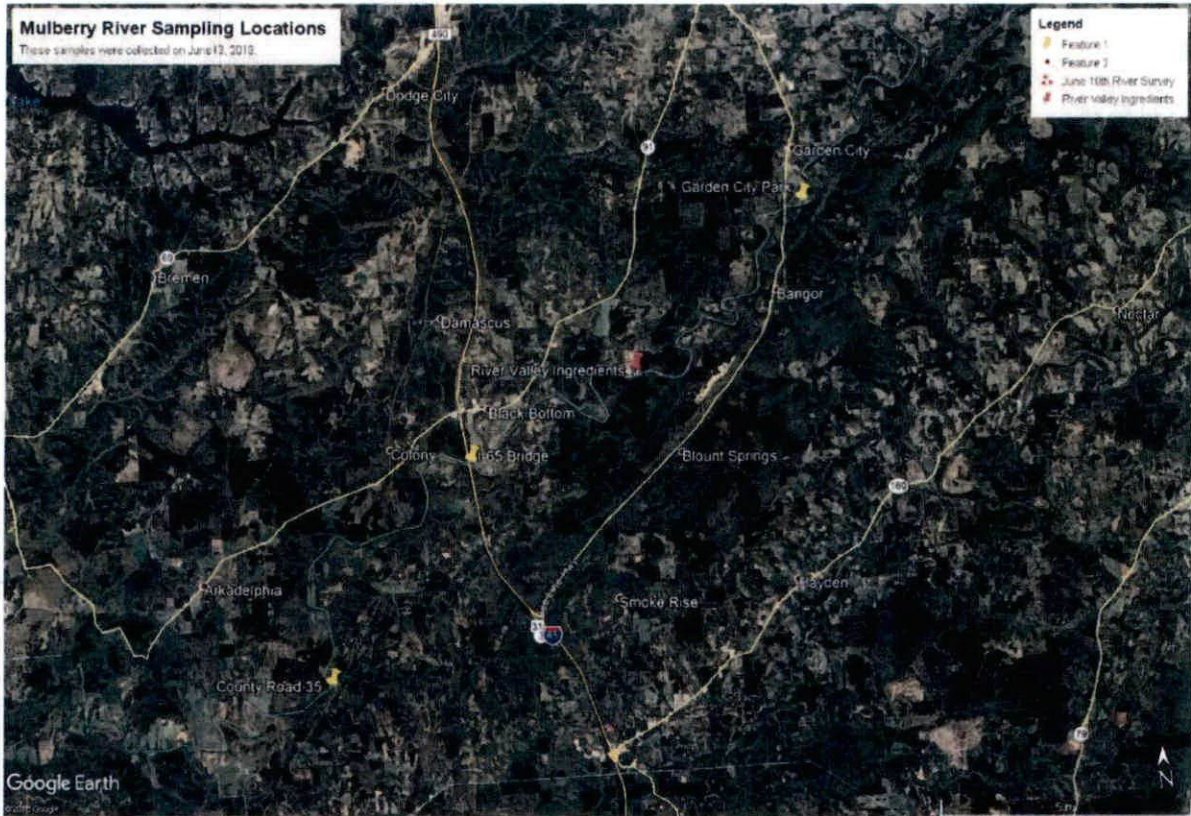
Dead fish collection continued by the facility contractors.

June 13, 2019

E. coli samples were collected at six locations within the Mulberry Fork River watershed by ADEM personnel. All sample results were below existing water quality values. ADEM personnel also assessed the river for dead fish during the sampling event. There were no dead fish noted anywhere in the survey area and it appeared that dead fish collection had been completed by the contractors.

ADEM personnel: Bruce Freeman, Decatur Branch Chief

Sampling Location	Results	Units	Lat	long
Garden City Park	110.0	MPN/dl	33.99798	-86.7465
I-65 Bridge	61.3	MPN/dl	33.93263	-86.8685
County Road 35	48.0	MPN/dl	33.87237	-86.9228
Mouth of Mulberry	79.4	MPN/dl	33.81589	-87.0571
Linn Park Upstream	39.3	MPN/dl	33.81645	-87.1237
Linn Park Downstream	10.9	MPN/dl	33.77582	-87.1366



Note:

There was no evidence of increased mortality in turtles and other species throughout the river system observed by ADEM or ADCNR personnel.





Attachments:

- A) Photographs
- B) Laboratory Reports

River Valley Ingredients Fish Kill Investigation

Mulberry Fork of the Black Warrior River

June 6 --- 13, 2019

Facility was transferring wastewater between lagoons when the spill occurred



Spill Area



Pump being set up to capture and return wastewater to facility lagoons from Dave Young Creek



Ponded material for recovery and view of flow path to the Mulberry Fork River



Dead fish and view of the Mulberry Fork River on the morning of June 6th after the release had stopped



Dead fish at the I-65 Bridge on June 6th



Dead fish at the I-65 Bridge on June 6th



Dead fish at County Road 35 on June 7th



Dead and dying fish at County Road 35 on June 7th



Grease being removed from Dave Young Creek at the facility on June 7th.
Creek was being diverted and pumped to a holding pond at the facility during this period.



Dead fish accumulated at County Road 35 on June 8th



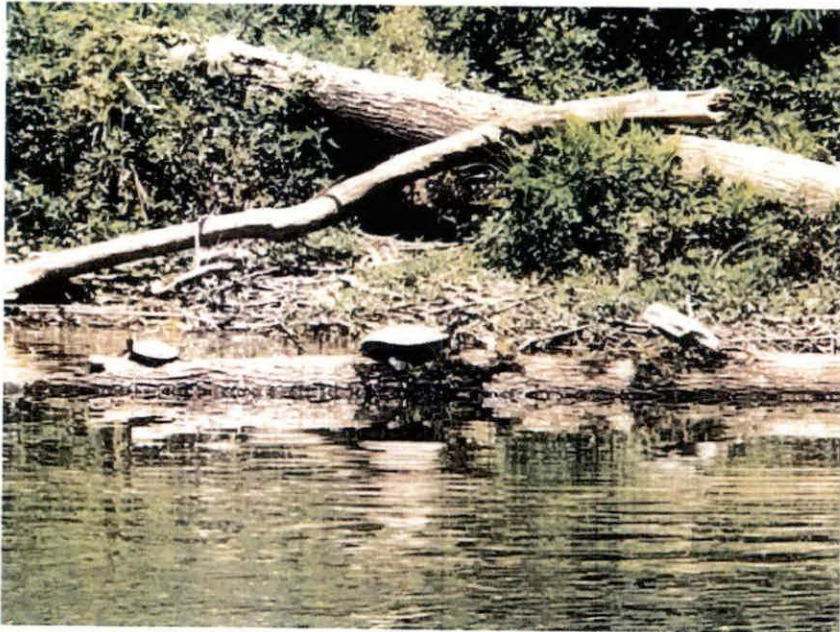
Dead fish accumulated at County Road 35 on June 8th



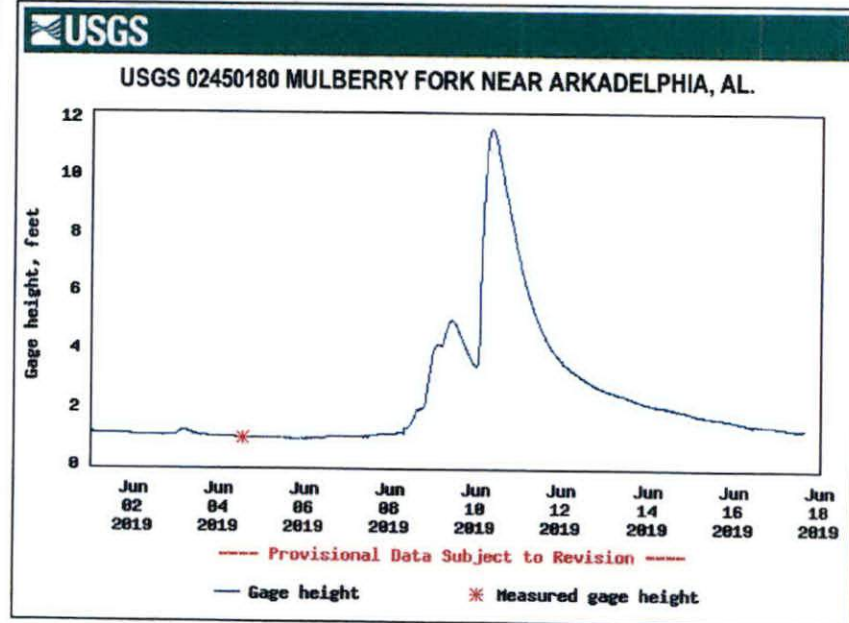
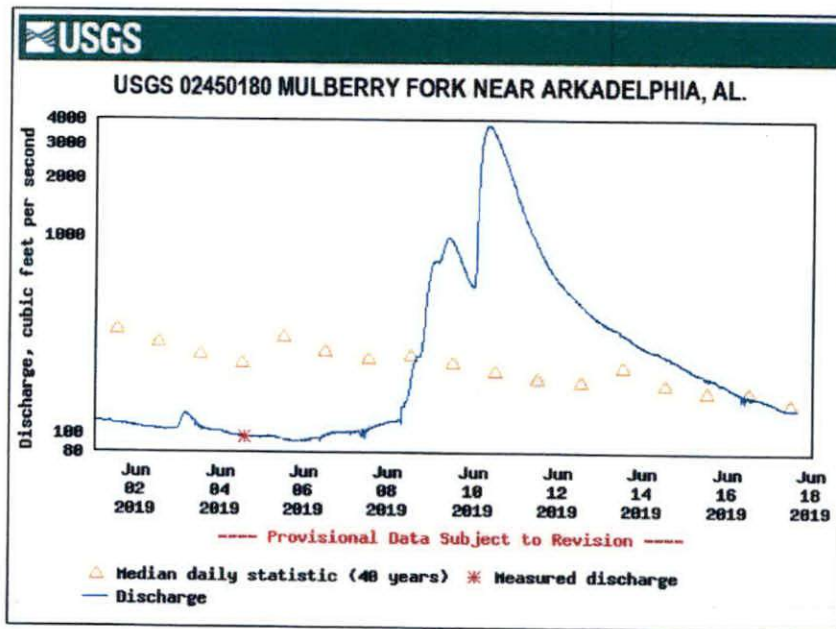
Dead fish accumulated at County Road 35 on
June 8th



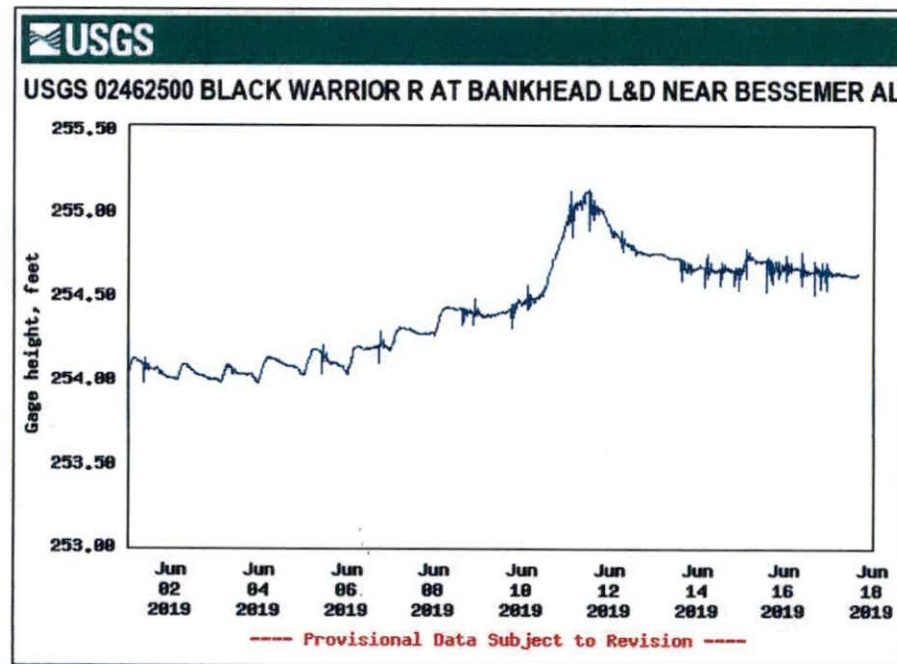
Turtles on the Mulberry Fork River June 13th



Flow and Gauge Height at County Road 35



Gauge Height Bankhead L&D



June 6, 2019 Sampling



ADEM Laboratory System

Birmingham Lab

Analysis Report



Central Lab
1350 Coliseum Blvd
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(334) 260-2770 (Phone)
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Birmingham Lab
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(205) 941-1603 (Fax)

Mobile Lab
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(251) 479-2593 (Fax)

Date of This Report: **6/28/2019**

Date of Original Report: **6/28/2019**

Send Report To: **Shawn Lagrone**
Project:

Lab Sample ID: **AB35678**

Location Code: **N1903-EFF**

Fund Code: **210**

Location Name: American Proteins Inc - Hanceville Facility

Sample Matrix: **SWATER**

Sample Type: **Grab**

Physical Location: **1170 County Road 508 Hanceville**

Collected By: **SHAWN LAGRONE**

Collected On: **6/6/2019 at 1830**

Sample Description: **SURFACE WATER**

Submitted On: **6/7/2019 at 1615**

Received By: **Dante Carter**

County: **Cullman**

Logged in by: **DAT**

Permit: **AL0040843** DSN: **001**

Validated by: **CS** on **6/28/2019**

The results on this report are from the sample that was received by the ADEM Laboratory System and is referenced above. The sample was analyzed using standard EPA-approved testing procedures and quality analysis protocols. Instrument calibration and quality control are within acceptable limits of precision and accuracy. A close review by our Quality Assurance Program certifies that all test holding times were met and our strict quality assurance standards were observed. Any results inconsistent with the above standards are qualified.*

Carla Snow

Submitted By: _____
Laboratory Quality Assurance Officer

The ADEM Central Laboratory is certified by EPA Region 4 and the ADEM Mobile Laboratory is certified by the State of Alabama to analyze samples as required under the Safe Drinking Water Act

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>RL</u>	<u>*Qualifier</u>	<u>Reference</u>	<u>Analyzed on</u>
Nitrogen, Ammonia	18.0	mg/L	0.04	0.03		EPA350.1	6/13/2019
Nitrogen, Total Kjeldahl	20.2	mg/L	0.75	0.15		EPA351.2	6/11/2019
Nitrogen, Nitrate/Nitrite	.012	cmbUnit	0.008	0.02	Jl	EPA353.2	6/13/2019
Phosphorus, Total	2.17	mg/L	0.06	0.01		EPA365.1	6/12/2019
Alkalinity, Total	125	mg/L	2.48	1		SM2320B	6/10/2019
Sulfate	29.8	mg/L	0.351	5		SM4500SO4-E	6/13/2019

I-65 Bridge



ADEM Laboratory System

Decatur Lab

Analysis Report



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Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35874**

Location Code: **EMERGENCY_RESPONSE**
Location Name: I-65

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**

Physical Location:

Collected By: **BRUCE FREEMAN**

Sample Description:

Collected On: **6/6/2019 at 1830**

County: **CULLMAN**

Submitted On: **6/6/2019 at 2030**

Permit: DSN:

Received By: **BRUCE FREEMAN**

Logged in by: **JLC**

Validated by: **JLC on 6/14/2019**

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SHAWN LAGRONE

Submitted By: _____
Laboratory Quality Assurance Officer

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<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>RL</u>	<u>*Qualifier</u>	<u>Reference</u>	<u>Analyzed on</u>
E. coli	9678.4	MPN/dL	1	1	G	SM9223B	6/6/2019

G = Actual value greater than reported value

Lab Sample ID: **AB35874**

Page 1 of 1

June 7, 2019 Sampling



ADEM Laboratory System

Birmingham Lab

Analysis Report



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Send Report To: **Shawn Lagrone**
Project:

Lab Sample ID: **AB35679**

Location Code: **N1903-EFF**

Fund Code: **210**

Location Name: American Proteins Inc - Hanceville Facility

Sample Matrix: **SWATER**

Sample Type: **Grab**

Physical Location: **1170 County Road 508 Hanceville**

Collected By: **SHAWN LAGRONE**

Collected On: **6/7/2019 at 1500**

Sample Description: **SURFACE WATER**

Submitted On: **6/7/2019 at 1615**

Received By: **Dante Carter**

County: **Cullman**

Logged in by: **DAT**

Permit: **AL0040843 DSN: 001**

Validated by: **CS on 6/28/2019**

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Carla Snow

Submitted By: Carla Snow
Laboratory Quality Assurance Officer

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Oil and Grease, Total	19.14	mg/L	0.723	5.0		EPA1664A	6/13/2019
Nitrogen, Ammonia	11.1	mg/L	0.04	0.03		EPA350.1	6/13/2019
Nitrogen, Total Kjeldahl	14.2	mg/L	0.75	0.15		EPA351.2	6/11/2019
Nitrogen, Nitrate/Nitrite	0.012	cmUnit	0.008	0.02	JI	EPA353.2	6/13/2019
Phosphorus, Total	1.26	mg/L	0.06	0.01		EPA365.1	6/12/2019
Alkalinity, Total	108	mg/L	2.48	1		SM2320B	6/10/2019
Solids, Total Suspended	15.0	mg/L	1	1	JQ	SM2540D	6/11/2019
Sulfate	27.1	mg/L	0.351	5		SM4500SO4-E	6/13/2019

County Road 35



ADEM Laboratory System

Decatur Lab

Analysis Report



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(251) 450-3400 (Phone)
(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35876**

Location Code: **EMERGENCY_RESPONSE**
Location Name: **UPSTREAM PLANT**

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**
Collected On: **6/7/2019 at 1600**

Physical Location:

Submitted On: **6/7/2019 at 1845**
Received By: **BRUCE FREEMAN**
Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

Sample Description:

County: **CULLMAN**
Permit: DSN:

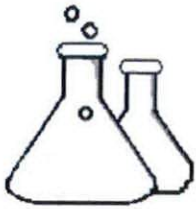
The results on this report are from the sample that was received by the ADEM Laboratory System and is referenced above. The sample was analyzed using standard EPA-approved testing procedures and quality analysis protocols. Instrument calibration and quality control are within acceptable limits of precision and accuracy. A close review by our Quality Assurance Program certifies that all test holding times were met and our strict quality assurance standards were observed. Any results inconsistent with the above standards are qualified.*

SHAWN LAGRONE

Submitted By: _____
Laboratory Quality Assurance Officer

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<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>RL</u>	<u>*Qualifier</u>	<u>Reference</u>	<u>Analyzed on</u>
E. coli	104.6	MPN/dL	1	1		SM9223B	6/7/2019



ADEM Laboratory System

Decatur Lab

Analysis Report



Central Lab
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(251) 450-3400 (Phone)
(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35875**

Location Code: **EMERGENCY_RESPONSE**
Location Name: COUNTY RD 35

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**

Physical Location:

Collected On: **6/7/2019 at 1510**
Submitted On: **6/7/2019 at 1845**
Received By: **BRUCE FREEMAN**

Sample Description:

Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

County: **CULLMAN**
Permit: DSN:

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<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>RL</u>	<u>*Qualifier</u>	<u>Reference</u>	<u>Analyzed on</u>
E. coli	10,462	MPN/dL	1	1		SM9223B	6/7/2019

June 13, 2019 Sampling



ADEM Laboratory System

Decatur Lab

Analysis Report



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(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35878**

Location Code: **EMERGENCY_RESPONSE**
Location Name: I-65

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**
Collected On: **6/13/2019 at 1440**

Physical Location:

Submitted On: **6/13/2019 at 1610**
Received By: **BRUCE FREEMAN**
Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

Sample Description:

County: **CULLMAN**
Permit: DSN:

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Submitted By: _____
Laboratory Quality Assurance Officer

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Parameter	Result	Unit	MDL	RL	*Qualifier	Reference	Analyzed on
E. coli	61.3	MPN/dL	1	1		SM9223B	6/13/2019

33. 932628
-86. 868482



ADEM Laboratory System

Decatur Lab

Analysis Report



Central Lab
1350 Coliseum Blvd
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(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35879**

Location Code: **EMERGENCY_RESPONSE**
Location Name: COUNTY ROAD 35

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**

Physical Location:

Collected By: **BRUCE FREEMAN**

Sample Description:

Collected On: **6/13/2019 at 1400**

County: **CULLMAN**

Submitted On: **6/13/2019 at 1610**

Permit: DSN:

Received By: **BRUCE FREEMAN**

Logged in by: **JLC**

Validated by: **JLC on 6/14/2019**

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E. coli	48.0	MPN/dL	1	1		SM9223B	6/13/2019

33.872372
-86.922778



ADEM Laboratory System

Decatur Lab

Analysis Report



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(256) 340-9359 (Fax)

Birmingham Lab
110 Vulcan Road
Birmingham, AL 35209
(205) 942-6168 (Phone)
(205) 941-1603 (Fax)

Mobile Lab
2204 Perimeter Road
Mobile, AL 36615
(251) 450-3400 (Phone)
(251) 479-2593 (Fax)

Date of This Report: 6/14/2019

Date of Original Report: 6/14/2019

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35880**

Location Code: **EMERGENCY_RESPONSE**
Location Name: MOUTH OF MULBERRY

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**
Collected On: **6/13/2019 at 1320**

Physical Location:

Submitted On: **6/13/2019 at 1610**
Received By: **BRUCE FREEMAN**
Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

Sample Description:

County: **WALKER**
Permit: DSN:

The results on this report are from the sample that was received by the ADEM Laboratory System and is referenced above. The sample was analyzed using standard EPA-approved testing procedures and quality analysis protocols. Instrument calibration and quality control are within acceptable limits of precision and accuracy. A close review by our Quality Assurance Program certifies that all test holding times were met and our strict quality assurance standards were observed. Any results inconsistent with the above standards are qualified.*

SHAWN LAGRONE

Submitted By: _____
Laboratory Quality Assurance Officer

The ADEM Central Laboratory is certified by EPA Region 4 and the ADEM Mobile Laboratory is certified by the State of Alabama to analyze samples as required under the Safe Drinking Water Act

Parameter	Result	Unit	MDL	RL	*Qualifier	Reference	Analyzed on
E. coli	79.4	MPN/dL	1	1		SM9223B	6/13/2019

33.815888
-87.057137



ADEM Laboratory System

Decatur Lab

Analysis Report



Central Lab
1350 Coliseum Blvd
Montgomery, AL 36110
(334) 260-2770 (Phone)
(334) 394-4326 (Fax)

Decatur Lab
2715 Sandlin Road
Decatur, AL 35603
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Birmingham Lab
110 Vulcan Road
Birmingham, AL 35209
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Mobile Lab
2204 Perimeter Road
Mobile, AL 36615
(251) 450-3400 (Phone)
(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35881**

Location Code: **EMERGENCY_RESPONSE**
Location Name: **LINN PARK UPSTREAM**

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**
Collected On: **6/13/2019 at 1250**

Physical Location:

Submitted On: **6/13/2019 at 1610**
Received By: **BRUCE FREEMAN**
Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

Sample Description:

County: **WALKER**
Permit: DSN:

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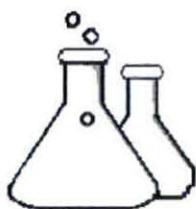
SHAWN LAGRONE

Submitted By: _____
Laboratory Quality Assurance Officer

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Parameter	Result	Unit	MDL	RL	*Qualifier	Reference	Analyzed on
E. coli	39.3	MPN/dL	1	1		SM9223B	6/13/2019

33.8 16450
- 87.123738



ADEM Laboratory System

Decatur Lab

Analysis Report



Central Lab
1350 Coliseum Blvd
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Mobile, AL 36615
(251) 450-3400 (Phone)
(251) 479-2593 (Fax)

Date of This Report: **6/14/2019**

Date of Original Report: **6/14/2019**

Send Report To: **BRUCE FREEMAN**
Project:

Lab Sample ID: **AB35882**

Location Code: **EMERGENCY_RESPONSE**
Location Name: **LINN PARK DOWNSTREAM**

Fund Code: **210**
Sample Matrix: **SWATER**
Sample Type: **GRAB**
Collected By: **BRUCE FREEMAN**
Collected On: **6/13/2019 at 1230**

Physical Location:

Submitted On: **6/13/2019 at 1610**
Received By: **BRUCE FREEMAN**
Logged in by: **JLC**
Validated by: **JLC on 6/14/2019**

Sample Description:

County: **WALKER**
Permit: **DSN:**

The results on this report are from the sample that was received by the ADEM Laboratory System and is referenced above. The sample was analyzed using standard EPA-approved testing procedures and quality analysis protocols. Instrument calibration and quality control are within acceptable limits of precision and accuracy. A close review by our Quality Assurance Program certifies that all test holding times were met and our strict quality assurance standards were observed. Any results inconsistent with the above standards are qualified.*

SHAWN LAGRONE

Submitted By: _____
Laboratory Quality Assurance Officer

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<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>MDL</u>	<u>RL</u>	<u>*Qualifier</u>	<u>Reference</u>	<u>Analyzed on</u>
E. coli	10.9	MPN/dL	1	1		SM9223B	6/13/2019

33.775824
- 87.136564