Entergy Services, Inc.
10055 Grogan's Mill Road
Parkwood II, Suite 400
T-PKWD-4A
The Woodlands, TX 77380
Tel. 281-297-3418
Fax 281-297-3046

Gerard Fontenot
Director – Northwest Region
Entergy Services, Inc.

AR-13-014

February 8, 2013

Mr. John Bailey, Permits Branch Manager
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

Subject: **Entergy Arkansas, Inc. Change in Ranking Official**

Entergy Facility	AFIN #	NPDES Permit #
Carpenter Dam	**30-00203**	**AR0048755**
Harvey Couch	**37-00004**	**AR0000493**
Independence	**32-00042**	**AR0037451**
Lake Catherine	**30-00011**	**AR0001147**
Cecil Lynch	**60-00087**	**AR0001376**
Remmel Dam	**26-00358**	**AR0048763**
White Bluff	**35-00110**	**AR0036331**
Hot Spring Plant	**30-00229**	**AR0049417 & ARG550314**

Dear Mr. Bailey:

Due to the retiring of Mr. Wayne Garrison, I am the new ranking official for the fossil Entergy Arkansas, Inc. facilities as provided in 40 CFR 122.22(a). Per the stipulation of 40 CFR 122.22 (b), I designate the following individuals as my duly authorized representatives for the Entergy facilities referenced above for the purpose of NPDES permit administration:

Entergy Facility	Duly Authorized Representatives	
Carpenter Dam	Robert Eugene Knighten Plant Manager	Tommy Gunn Chemistry Environmental Specialist
Harvey Couch	Robert Eugene Knighten Plant Manager	Tommy Gunn Chemistry Environmental Specialist
Independence	James Gaylan Hayes General Manager	Anthony Wilson Senior Lead Environmental Analyst
Hot Spring Plant	Todd Gallagher Plant Manager	Johnathon Drake Process Superintendent
Lake Catherine	Robert Eugene Knighten Plant Manager	Tommy Gunn Chemistry Environmental Specialist
Cecil Lynch	Robert Eugene Knighten Plant Manager	Tommy Gunn Chemistry Environmental Specialist
Remmel Dam	Robert Eugene Knighten Plant Manager	Tommy Gun Chemistry Environmental Specialist
White Bluff	Thomas Odenthal General Manager	Barry Snow Senior Lead Environmental Analyst

The above named persons are aware of the certification requirements outlined in paragraph (d) of Section 122.22 and are authorized to sign all discharge monitoring reports.

In addition, please continue to address and direct **all** NPDES related correspondences, permits, and discharge monitoring reports for the Entergy facilities referenced in this letter to George Tracy Johnson who is also my duly authorized representative:

Mr. George Tracy Johnson, Manager - Arkansas Environmental Support
Entergy Services, Inc.
425 West Capitol (A-TCBY-22D)
Post Office Box 551
Little Rock, AR 72203-0551
Phone (501) 377-4033

If you have any questions concerning this information, please contact Tina Burt (501) 377-4038.

Sincerely,

Gerard Fontenot
Director, Northwest Region

GF:trb

cc: Ms. Kim Fuller, ADEQ
cc: Ms. Amy Schluterman, ADEQ
cc: Mr. David Ramsey, ADEQ

Arkansas Environmental Support
425 West Capitol Avenue
A-TCBY-22D
Little Rock, AR 72203
Tel 501-377-4033
Fax 501-377-5656
G. Tracy Johnson, Manager
Arkansas Environmental Support

AR-13-017

February 11, 2013

Mr. John Bailey, Permits Branch Manager
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

Subject: **Entergy Arkansas, Inc. Carpenter Dam – NPDES Permit # AR0048755, AFIN 30-00203**

Dear Mr. Bailey:

Enclosed is an application for renewal of the National Pollutant Discharge Elimination System (NPDES) Permit AR0048755 for Entergy's Carpenter Dam facility. Also, a cd is enclosed that contains a complete copy of the renewal application with maps and Entergy Inc. most recent annual and quarterly Securities and Exchange filings.

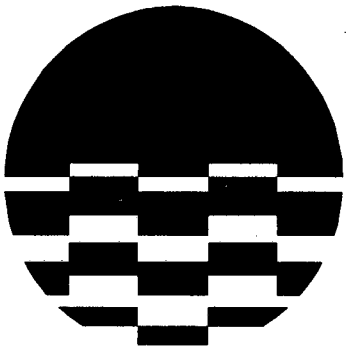
If you have any questions or require additional information, please contact Tina Burt at (501) 377-4038 or me at or (501) 377-4033.

Sincerely,

G. Tracy Johnson
Manager, Arkansas Environmental Support

GTJ:trb
Enclosures

cc: Ms. Kim Fuller, ADEQ (w/o enclosure)



Entergy

CARPENTER DAM NPDES PERMIT RENEWAL APPLICATION

FEBRUARY 2013

Arkansas Department of Environmental Quality
NPDES PERMIT APPLICATION
FORM 1

INSTRUCTIONS:

1. This form should be **typed or printed in ink**. If insufficient space is available to address any item please continue on an attached sheet of paper.

2. Please complete the following Section (s):

Sections	A	B	C	D	E	F	G	H	I
POTW	X	X	X	X					X
Industrial User	X	X	X	X	X	X	X		X
Construction Permit Only	X	X	*	X				X	X
Modification	X	X	X	X	X	*	*	X	X
All Other Applicants	X	X	X	X	X				X

* As necessary

3. If you need help on SIC or NAICS go to www.osha.gov/oshstats/sicser.html

4. If you have any questions about this form you may call NPDES Section at 501-682-0622 or go to www.adeq.state.ar.us/water. You may also contact :

Department	Information in Regard to	Telephone #
Arkansas Department of Health	Water Supply	501-661-2623

5. The following EPA Forms in addition to Form 1 is required for processing your application:

Form 2A - Municipal Dischargers
Form 2B - Concentrated Animal Feeding Operations
Form 2C - Existing Manufacturing, Commercial, Mining, and Silvicultural Operations
Form 2D - New Sources and New Dischargers Application for Permit to Discharge Process Wastewater
Form 2E - Facilities Which Do Not Discharge Process Wastewater (i.e. Domestic, Non contact cooling water)
Form 2F - Application for Permit to Discharge Storm Water Discharges Associated With Industrial Activity

6. Where to Submit

Return the completed form by mail to:

Arkansas Department of Environmental Quality
Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118

Or by email to:

Water-Permit-Application@adeq.state.ar.us

NPDES PERMIT APPLICATION

FORM 1

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION
5301 Northshore Drive
North Little Rock, AR 72118-5317
www.adeq.state.ar.us/water

PURPOSE OF THIS APPLICATION

- ☐ INITIAL PERMIT APPLICATION FOR NEW FACILITY
- ☐ INITIAL PERMIT APPLICATION FOR EXISTING FACILITY
- ☐ MODIFICATION OF EXISTING PERMIT
- ☒ REISSUANCE (RENEWAL) OF EXISTING PERMIT
- ☐ MODIFICATION AND CONSTRUCTION OF EXISTING PERMIT
- ☐ CONSTRUCTION PERMIT

SECTION A- GENERAL INFORMATION

1. Legal Applicant Name (who has ultimate decision making responsibility over the operation of a facility or activity):

   Entergy Arkansas, Inc.

   Note: The legal name of the applicant must be identical to the name listed with the Arkansas Secretary of State.

2. Operator Type: Private ☐ State ☐ Federal ☐ Partnership ☐ Corporation ☒ Other ☐

   State of Incorporation: _____

3. Facility Name: Carpenter Dam

4. Is the legal applicant identified in number 1 above, the owner of the facility? ☒ Yes ☐ No

5. NPDES Permit Number (If Applicable): AR0048755

6. NPDES General Permit Number (If Applicable): ARG

7. NPDES General Storm Water Permit Number (If Applicable): _____

8. Permit Numbers and/or names of any permits issued by ADEQ or EPA for an activity located in Arkansas that is presently held by the applicant or its parent or subsidiary corporation which are not listed above:

Permit Name	Permit Number	Held by
See Attachment - Page 2A		

9. Give driving directions to the wastewater treatment plant with respect to known landmarks:
   Facility is located in Hot Springs, Arkansas, I-30 to Highway 70W, approximately4 miles northwest of Highway 270, off Carpenter Dam Road.

10. Facility Physical Location: (Attach a map with location marked; street, route no. or other specific identifier)

    Street: 1398 Carpenter Dam Road

    City: Hot Springs- County: Garland State: AR Zip: 71901

Attachment – Page 2a

Section A.8. Permit numbers and/or names of any permits issued by ADEQ or EPA for an activity located in Arkansas that is presently held by the applicant or its parent or subsidiary corporation:

Facility	Permit Type	Permit Number	Held By
Entergy Arkansas – Carpenter Dam	NPDES	AR0048755	Entergy Arkansas, Inc.
Entergy Arkansas – Couch	NPDES	AR0000493	Entergy Arkansas, Inc.
Entergy Arkansas – Couch	Air	1759-AOP-R7	Entergy Arkansas, Inc.
Entergy Arkansas – Couch	Stormwater	ARR00A689	Entergy Arkansas, Inc.
Entergy Arkansas – Couch	Haz Waste EPAID	ARD000632877	Entergy Arkansas, Inc.
Entergy Arkansas – Independence	NPDES	AR0037451	Entergy Arkansas, Inc.
Entergy Arkansas – Independence	Air	449-AOP-R7	Entergy Arkansas, Inc.
Entergy Arkansas – Independence	Solid Waste	0200-S3N-R1	Entergy Arkansas, Inc.
Entergy Arkansas – Independence	Haz Waste EPAID	ARD096669015	Entergy Arkansas, Inc.
Entergy Arkansas – Hot Spring Plant	NPDES	AR0049417	Entergy Arkansas, Inc.
Entergy Arkansas – Hot Spring Plant	Air	1936-AOP-R^	Entergy Arkansas, Inc.
Entergy Arkansas – Hot Spring Plant	Stormwater	ARR00C348	Entergy Arkansas, Inc.
Entergy Arkansas – Hot Spring Plant	Domestic	ARG550314	Entergy Arkansas, Inc.
Entergy Arkansas – Lake Catherine	NPDES	AR0001147	Entergy Arkansas, Inc.
Entergy Arkansas – Lake Catherine	Air	1717-AOP-R5	Entergy Arkansas, Inc.
Entergy Arkansas – Lake Catherine	Haz Waste EPAID	ARD000632935	Entergy Arkansas, Inc.
Entergy Arkansas – Lake Catherine	Stormwater	ARR001023	Entergy Arkansas, Inc.
Entergy Arkansas – Lynch	NPDES	AR0001376	Entergy Arkansas, Inc.
Entergy Arkansas – Lynch	Air	0019-AOP-R7	Entergy Arkansas, Inc.
Entergy Arkansas – Lynch	Haz Waste EPAID	ARD000632810	Entergy Arkansas, Inc.
Entergy Arkansas – Lynch	Stormwater	ARR000960	Entergy Arkansas, Inc.
Entergy Arkansas – Mabelvale	Air	1734-AOP-R2	Entergy Arkansas, Inc.
Entergy Arkansas – Moses	NPDES	AR0000370	Entergy Arkansas, Inc.
Entergy Arkansas – Moses	Air	0097-AOP-R4	Entergy Arkansas, Inc.
Entergy Arkansas – Moses	Haz Waste EPAID	ARD046638755	Entergy Arkansas, Inc.
Entergy Arkansas – Remmel Dam	NPDES	AR0048763	Entergy Arkansas, Inc.
Entergy Arkansas – Ritchie	NPDES	AR0000388	Entergy Arkansas, Inc.
Entergy Arkansas – Ritchie	Air	1131-AOP-R4	Entergy Arkansas, Inc.
Entergy Arkansas – Ritchie	Haz Waste EPAID	ARD041580168	Entergy Arkansas, Inc.
Entergy Arkansas – White Bluff	NPDES	AR0036331	Entergy Arkansas, Inc.
Entergy Arkansas – White Bluff	Air	0263-AOP-R7	Entergy Arkansas, Inc.
Entergy Arkansas – White Bluff	Solid Waste	0199-S3N-R3	Entergy Arkansas, Inc.
Entergy Arkansas – White Bluff	Haz Waste EPAID	ARD093414597	Entergy Arkansas, Inc.
Entergy Arkansas – White Bluff	Stormwater	ARR000930	Entergy Arkansas, Inc.

11. Facility Mailing Address for permit, DMR, and Invoice (Street or Post Office Box):

Name: George Tracy Johnson Title: Manager, Arkansas Environmental Support

Street: 425 West Capitol (A-TCBY-22D) P.O. Box 551

City: Little Rock State: AR Zip: 72203-0551

E-mail address*: gjohns6@entergy.com Fax: (281) 297-6128

* Is emailing all documents (permit, letters, DMRs, invoices, etc.) acceptable to the applicant? ☒ Yes ☐ No

12. Neighboring States Within 20 Miles of the permitted facility (Check all that apply):

Oklahoma ☐ Missouri ☐ Tennessee ☐ Louisiana ☐ Texas ☐ Mississippi ☐

13. Indicate applicable Standard Industrial Classification (SIC) Codes and NAICS codes for primary processes

4911 SIC Facility Activity under this SIC or NAICS:

221111 NAICS Hydroelectric power generation

14. Design Flow: _____ MGD Highest Monthly Average of the last two years Flow: See Supplemental Information MGD

15. Is Outfall equipped with a diffuser? ☐ Yes ☒ No

16. Responsible Official (as described on the last page of this application):

Name: Gerard Fontenot Title: Director, Northwest Region\ Entergy Services, Inc.

Address: 10055 Grogans Mill Road - Suite 400 Phone Number: 281.297.3435

E-mail Address: gfonte2@entergy.com

City: The Woodlands State: TX Zip: 77380-1059

17. Cognizant Official (Duly Authorized Representative of responsible official as describe on the last page of this application):

Name: Robert Eugene Knighten Title: Plant Manager

Address: 141 West County Line Road Phone Number: 501.844.2122

E-mail Address: rknigh3@entergy.com

City: Malvern State: AR Zip: 72104

18. Name, address and telephone number of active consulting engineer firm (If none, so state):

Contact Name: Ray Wieda, PE

Company Name: FTN Associates, Ltd

Address: 3 Innwood Circle, Suite 220 Phone Number: (501) 225-7779

E-mail Address: rew@ftn-assoc.com

City: Little Rock State: AR Zip: 72211

19. Wastewater Operator Information

Wastewater Operator Name: Tommy Gunn License number: 004943

Class of municipal wastewater operator: I ☐ II ☐ III ☒ IV ☐

Class of industrial wastewater operator: Basic ☐ Advanced ☒

SECTION B: FACILITY AND OUTFALL INFORMATION

1. Facility Location (All information must be based on **front door (Gate)** location of the facility):

Lat: 34 ° 26 ' 39.64 " Long: 93 ° 01 ' 24.51 " County: Garland Nearest Town: Hot Springs

2. **Outfall** Location (The location of the end of the pipe Discharge point.):

Outfall No. 001:

Latitude: 34 ° 26 ' 36.15 " Longitude: 93 ° 01 ' 32.35 "

Where is the collection point? Outfall 001

Name of Receiving Stream (i.e. an unnamed tributary of Mill Creek, thence into Mill Creek; thence into Arkansas River):

Ouachita River

Outfall No. _____:

Latitude: _____ ° _____ ' _____ " Longitude: 90 ° _____ ' _____ "

Where is the collection point? _____

Name of Receiving Stream (i.e. an unnamed tributary of Mill Creek, thence into Mill Creek; thence into Arkansas River):

e

3. **Monitoring** Location (If the monitoring is conducted at a location different than the above **Outfall** location):

Outfall No. _____:

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

Outfall No. _____:

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

Outfall No. _____:

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

4. Type of Treatment system (Included all components of treatment system and Attach the process flow diagram):

None

5. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering ☐	Yes	Type: _____	☒	No	☐	N/A	☐
	Sampling Equipment	☐ Yes	Type: _____	☒	No	☐	N/A	☐
Planned:	Flow Metering ☐	Yes	Type: _____	☒	No	☐	N/A	☐
	Sampling Equipment	☐ Yes	Type: _____	☒	No	☐	N/A	☐

If yes, please indicate the present or future location of this equipment on the sewer schematic and describe the equipment below:

_____

_____

6. Is the proposed or existing facility located above the 100-year flood level? ☒ Yes ☐ No

NOTE: FEMA Map must be included with this application. Maps can be ordered at www.fema.gov .

If "No", what measures are (or will be) used to protect the facility? _____

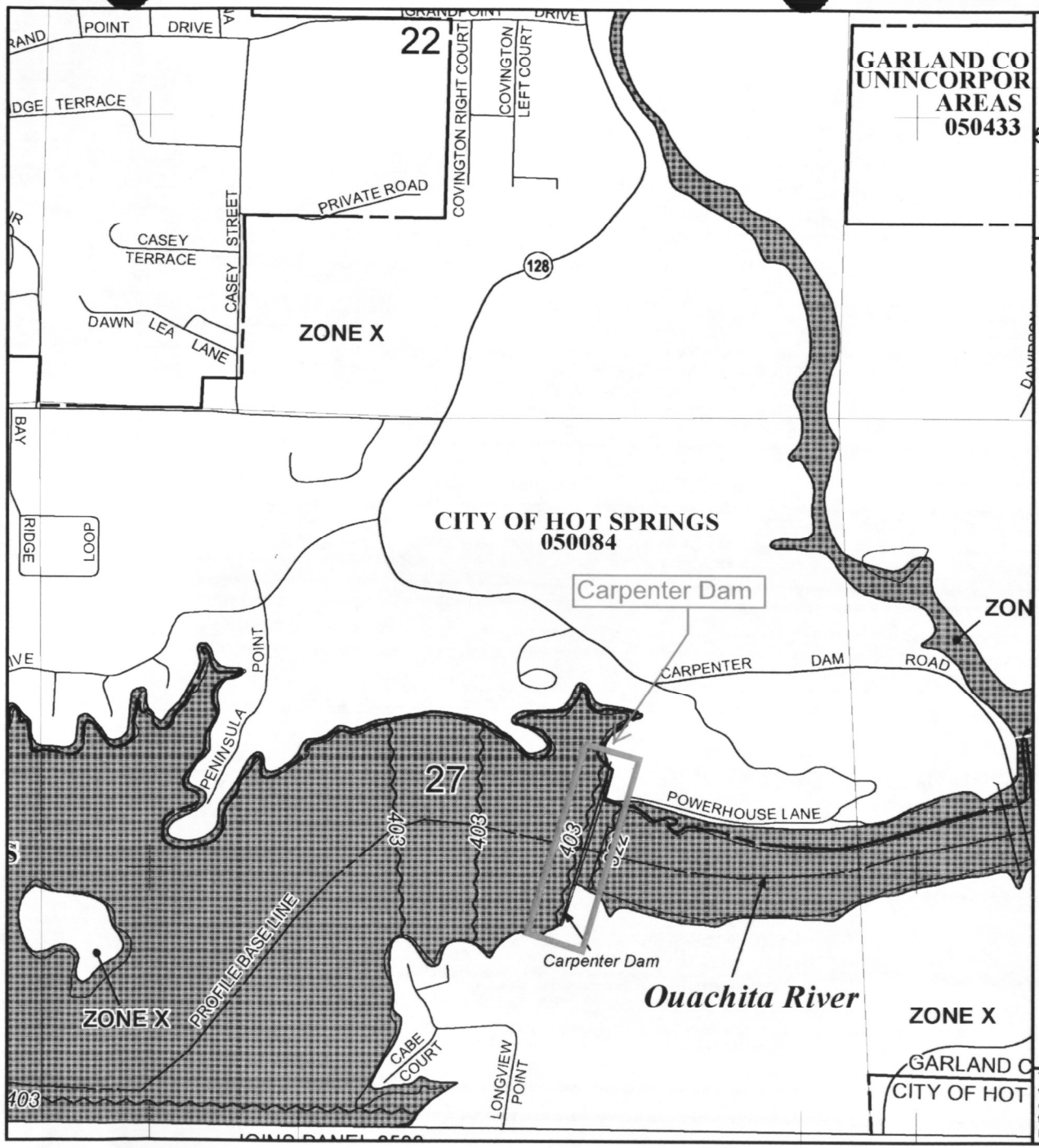
7. Population for Municipal and Domestic Sewer Systems: NA

8. Backup Power Generation for Treatment Plants

Are there any permanent backup generators? Yes ☐ No ☒

If Yes, How many? _____ Total Horespower (hp)? _____

If No, Please explain? Discharge is dependent upon pumps. No discharge can occur during power outages.



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METE

PANEL 0485D

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

GARLAND COUNTY, ARKANSAS

AND INCORPORATED AREAS

PANEL 485 OF 525

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GARLAND COUNTY	050433	0485	D
HOT SPRINGS, CITY OF	050084	0485	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
05051C0485D

MAP REVISED
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FEMA MAP

SECTION C – WASTE STORAGE AND DISPOSAL INFORMATION

1. Sludge Disposal Method (Check as many as are applicable):

☐ **Landfill**

Landfill Site Name _____ ADEQ Solid Waste Permit No. _____

☐ **Land Application:** ADEQ State Permit No. _____

☐ **Septic tank** Arkansas Department of Health Permit No.: _____

☐ **Distribution and Marketing**: Facility receiving sludge:

Name: _____ Address: _____

City: _____ State: _____ Zip: _____ Phone: _____

Rail: ☐ _____ Pipe: ☐ _____ Other: _____

☐ **Subsurface Disposal** (Lagooning):

Location of lagoon _____ How old is the lagoon? _____

Surface area of lagoon: _____ Acre Depth: _____ ft Does lagoon have a liner? ☐ Yes ☐ No

☐ **Incineration:** Location of incinerator _____

☐ **Remains in Treatment Lagoon(s):**

How old is the lagoon(s)? _____ Has sludge depth been measured? ☐ Yes ☐ No

If Yes, Date measured? _____ Sludge Depth? _____ ft If No, When will it be measured? _____

Has sludge ever been removed? Yes ☐ No ☐ If Yes, When was it removed? _____

☐ **Other** (Provide complete description): _____

SECTION D - WATER SUPPLY

Water Sources (check as many as are applicable):

☒ **Private Well** - Distance from Discharge point: ☒ Within 5 miles ☐ Within 50 miles

☒ **Municipal Water Utility** (Specify City): Malvern, AR

Distance from Discharge point: ☐ Within 5 miles ☒ Within 50 miles

☐ **Surface Water-** Name of Surface Water Source: _____

Distance from Discharge point: ☐ Within 5 miles ☐ Within 50 miles

Lat: _____ ° _____ ' _____ " Long: _____ ° _____ ' _____ "

☐ **Other** (Specify): _____

Distance from Discharge point: ☐ Within 5 miles ☐ Within 50 miles

SECTION E: FINANCIAL ASSURANCE AND DISCLOSURE STATEMENT

1. Arkansas Code Annotated § 8-4-203provides for financial assurance requirements for permitting non-municipal domestic sewage treatment systems. Arkansas Code 8-4-203 (b)(1)(A)(i) – "The department shall not issue, modify, or renew a National Pollutant Discharge Elimination System permit or state permit for a non-municipal domestic sewage treatment works without the permit applicant first demonstrating to the department its financial ability to cover the estimated costs of operating and maintaining the non-municipal domestic sewage treatment works for a minimum period of five (5) years."

   The applicant must provide a detailed estimate of the operation and maintenance (O&M) costs for the facility for a five year period. Once the O&M estimate is approved, the applicant must provide **financial assurance** in order to show that the facility is able to cover the costs of operating and maintaining the treatment system for the next five years.

   The minimal financial assurance may be demonstrated to the department by using the following as outlined in Arkansas Code 8-4-203(b)(2):

   A. Obtaining insurance that specifically covers operation and maintenance costs
   B. Obtaining a letter of credit;
   C. Obtaining a surety/performance bond;
   D. Obtaining a trust fund or an escrow account; or
   E. Using a combination of insurance, letter of credit, surety bond, trust fund, or escrow account.

2. Disclosure Statement:

   Arkansas Code Annotated Section 8-1-106 requires that all applicants for any type of permit or transfer of any permit, license, certification or operational authority issued by the Arkansas Department of Environmental Quality (ADEQ) file a Disclosure Statement with their application. The filing of a Disclosure Statement is mandatory. No application can be considered administratively complete without a completed Disclosure Statement. The form may be obtained from the ADEQ web site at:

   http://www.adeq.state.ar.us/disclosure_stmt.pdf

   In lieu of a Disclosure Statement, copies of Entergy, Inc.'s most recent annual and quarterly Securities and Exchange Commission filings are submitted on the enclosed cd.

SECTION F – INDUSTRIAL ACTIVITY

1. Does an effluent guideline limitation promulgated by EPA (Link to a Listing of the 40 CFR Effluent Limit Guidelines) under Section 304 of the Clean Water Act (CWA) apply to your facility?

   YES ☐ (Answer questions 2 and 3) NO ☒

2. What Part of 40 CFR? _____

3. What Subpart(s)? _____ _____

4. Give a brief description of all operations at this facility including primary products or services (attach additional sheets if necessary):

   Generationof hydroelectric power

5. Production: (projected for new facilities)

Product(s) Manufactured	Last 12 Months lbs/day*		Highest Production Year of Last 5 Years lbs/day*	
(Brand name)	Highest Month	Days of Operation	Monthly Average	Days of Operation
NA				

* These units could be off-lbs, lbs quenched, lbs cleaned/etched/rinsed, lbs poured, lbs extruded, etc.

SECTION G - WASTEWATER DISCHARGE INFORMATION

Facilities that checked "Yes" in question 1 of Section F are considered Categorical Industrial Users and should skip to question 2.

1. **For Non-Categorical Users Only**: List average wastewater discharge, maximum discharge, and type of discharge (batch, continuous, or both), for each plant process. Include the reference number from the process flow schematic (reference Figure 1) that corresponds to each process. [New facilities should provide estimates for each discharge.]

No.	Process Description	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge (batch, continuous, none)
001	Non-Contact Cooling Water	156,000	222,000	Continuous

If batch discharge occurs or will occur, indicate: [New facilities may estimate.]

Number of batch discharges: _____ per day Average discharge per batch: (GPD)

Time of batch discharges _____ (days of week) at _____ (hours of day)

Flow rate: _____ gallons/minute Percent of total discharge: _____

Answer questions 2, 3, and 4 only if you are subject to Categorical Standards.

2. For Categorical Users: Provide the wastewater discharge flows for each of your processes or proposed processes. Include the reference number from the process flow schematic (reference Figure 1) that corresponds to each process. [Note: 1) New facilities should provide estimates for each discharge and 2) Facilities should denote whether the flow was measured or estimated.]

No.	Regulated Process	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge (batch, continuous, none)
	See Supplemental Information			

No.	Unregulated Process	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge (batch, continuous, none)

No.	Dilution (e.g., Cooling Water)	Average Flow (GPD)	Maximum Flow (GPD)	Type of Discharge (batch, continuous, none)

If batch discharge occurs or will occur, indicate: [New facilities may estimate.]

Number of batch discharges: _____ per day Average discharge per batch: (GPD)

Time of batch discharges _____ (days of week) at _____ (hours of day)

Flow rate: _____ gallons/minute Percent of total discharge: _____

3. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	☐	Yes	Type: _____	☒	No	☐	N/A ☐
	Sampling Equipment	☐	Yes	Type: _____	☒	No	☐	N/A ☐
Planned:	Flow Metering	☐	Yes	Type: _____	☒	No	☐	N/A ☐
	Sampling Equipment	☐	Yes	Type: _____	☒	No	☐	N/A ☐

If yes, please indicate the present or future location of this equipment on the sewer schematic and describe the equipment below:

_____

_____

_____

4. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics?

☐ Yes ☒ No (If no, skip Question 5)

5. Briefly describe these changes and their effects on the wastewater volume and characteristics:

_____

_____

_____

SECTION H -TECHNICAL INFORMATION

Technical information to support this application shall be furnished in appropriate detail to understand the project. Information in this Part is required for obtaining a **construction permit** or for **modification** of the treatment system.

1. Describe the treatment system. Include the types of control equipment to be installed along with their methods of operation and control efficiency.

   NA

2. One set of construction plans and specifications, approved (Signed and stamped) by a **Professional Engineer** (PE) registered in **Arkansas**, must be submitted as follows:

   a. The plans must show flow rates in addition to pertinent dimensions so that detention times, overflow rates, and loadings per acre, etc. can be calculated.
   b. Specifications and complete design calculations.
   c. All treated wastewater discharges should have a flow measuring device such as a weir or Parshall flume installed. Where there is a significant difference between the flow rates of the raw and treated wastewater, a flow measuring device should be provided both before and after treatment.

3. If this application includes a construction permit disturbing five or more acres, a storm water construction permit must be obtained by submitting a notice of intent (NOI) to ADEQ.

SECTION I: SIGNATORY REQUIREMENTS

Cognizant Official (Duly Authorized Representative)

40 CFR 122.22(b) states that all reports required by the permit, or other information requested by the Director, shall be signed by the applicant (or person authorized by the applicant) or by a duly authorized representative of that person. A person is duly authorized representative only if:

(1) the authorization is made in writing by the applicant (or person authorized by the applicant);
(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity responsibility, or an individual or position having overall responsibility for environmental matters for the company.

The applicant hereby designates the following person as a Cognizant Official, or duly authorized representative, for signing reports, etc., including Discharge Monitoring Reports (DMR) required by the permit, and other information requested by the Director:

Signature of Cognizant Official: Robert Eugene Knighten Date: 2/4/13

Printed name of Cognizant Official: Robert Eugene Knighten

Official title of Cognizant Official: Plant Manager Telephone Number: 501.844.2122

Responsible Official

The information contained in this form must be certified by a ***responsible official*** as defined in the "signatory requirements for permit applications" (40 CFR 122.22).

Responsible official is defined as follows:

Corporation, a principal officer of at least the level of vice president
Partnership, a general partner
Sole proprietorship: the proprietor
Municipal, state, federal, or other public facility: principal executive officer, or ranking elected official.

___ *(Initial)* "I certify that the cognizant official designated above is qualified to act as a duly authorized representative under the provisions of 40 CFR 122.22(b)." NOTE: If no duly authorized representative is designated in this section, the Department considers the applicant to be the responsible official for the facility and only reports, etc., signed by the applicant will be accepted by the Department.

___ *(Initial)* "I certify that, if this facility is a corporation, it is registered with the Secretary of State in Arkansas. Please provide the full name of the corporation if different than that listed in Section A above."

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. I further certify under penalty of law that all analyses reported as less than detectable in this application or attachments thereto were performed using the EPA approved test method having the lowest detection limit for the substance tested."

Signature of Responsible Official: Gerard Fontenot Date: 2/7/13

Printed name of Responsible Official: Gerard Fontenot

Official title of Responsible Official: Director, Northwest Region Entergy Services, Inc Telephone Number: 281.297.3418

Entergy Arkansas, Inc.
Carpenter Dam
NPDES Permit Renewal Application
Supplemental Information

General Information

Carpenter Dam is located in the eastern half of Section 27, Township 3 South, Range 19 West in Garland County, Arkansas. The facility is located about 6 miles by road southeast of Hot Springs (Attachment A).

Carpenter Dam was constructed on the Ouachita River above Lake Catherine in 1932. It was placed on the National Register of Historic Places in 1992. The dam was the second of two hydro-electric dams constructed on the river by Arkansas Power and Light Company under the direction of its founder Harvey Couch. The dam was named after Flave Carpenter, the pioneer peace officer who discovered the dam site while searching for outlaws along the river in the 1920's. Lake Hamilton was created by the construction of Carpenter Dam. The lake is 18.5 miles long and has a surface area of 7,200 acres. The lake was named after C. Hamilton Moses, an attorney for Mr. Couch and who assumed the presidency of AP&L after Mr. Couch's death in 1941.

Carpenter Dam is 115 feet high, 1,164 feet long and 73 feet thick at the base. It is a gravity-type structure constructed using 156,000 cubic yards of concrete. The dam has a power house which contains two vertical 29,000 kW turbine generators and auxiliaries.

The amount of water released through Carpenter Dam for electric power generation varies according to the status of water resources available and the demand for electric power on the Entergy system. The operation of Carpenter Dam is specifically regulated by the Federal Energy Regulatory Commission under Permit No. 271-AR. Water released from Lake Hamilton for electrical generation is not a "discharge" according to the Clean Water Act and Arkansas Regulation 2. However, several minor water discharges at Carpenter Dam are regulated under the NPDES program and these discharges are described below.

Discharge Information – Outfall 001

Miscellaneous water uses at Carpenter Dam are illustrated in Attachment B. Water discharged to Lake Catherine originates from a single sump located in the power house. This sump receives flow from two principle sources: bearing cooling water and air wash water.

1. Bearing Cooling Water – The vertical turbine/generator shafts for Unit-1 and Unit-2 have an upper thrust bearing, a middle guide bearing and lower guide bearing. These bearing assemblies are cooled with untreated, non-contact cooling water withdrawn from Lake Hamilton. Flow is maintained to these bearings unless the turbine generator is removed from service for maintenance. The bearing cooling water for each turbine/generator unit is approximately 15 gpm

and the total flow is approximately 30 gpm. Water from the bearings is collected in a sump and mixed with other wastewater prior to discharge.

2. Air Wash Units – The two 29,000 kW electrical generators at Carpenter Dam are air cooled. Air used to cool the generators is conditioned in "air wash" units located on the roof of the power house. The air washers are actually large, contact air coolers which use cold water (piped from the Lake Hamilton side of the dam) to clean and cool the air before it enters the generators. Makeup water to the air wash units is not treated prior to or after use. Any contaminants in the water originate from entrained air-borne particulate material which is scrubbed from the air. Each air wash unit has a flow of approximately 50 gpm and a total flow for both units of approximately 100 gpm. The air wash units discharge directly to the sump located in the power house.

3. Miscellaneous sources – In addition to water used for bearing cooling and air wash systems as described above, several miscellaneous sources of water are also collected in the power house sump.

    a. Seasonally, condensate from the air conditioning unit for the power house control room discharges to the sump. This flow has been estimated to be less than 1 gpm.

    b. Air compressor non-contact cooling water and air receiver drain waste are collected in the sump at the rate of approximately 1 gpm.

    c. In addition, minor leakage around the wicket gates is collected in the power house sump. Wicket gates are structures designed to control the flow of water entering the turbine. Lake water that leaks by the wicket gates is pumped to the sump as needed. This flow has been estimated at less than 1 gpm.

Total wastewater flow to the power house sump is approximately 130 gpm. One of three sump pumps is utilized to discharged water from the sump to Lake Catherine. Wastewater is discharged intermittently through one of thee pipes which exit the power house on the downstream side of the dam. Depending on the sump pump used, wastewater is discharged through either a 3-inch, 8-inch, or 24-inch pipe.

Additional Information

All sinks, toilets, showers and laundry drains in the power house discharge to an on-shore septic tank system. Floor drains in industrial process work areas at the power house have been sealed to prevent the introduction of pollutants. Stormwater run off at Carpenter Dam is limited to drainage from the power house roof, which is not an industrial process area as defined at 40CFR122.26.

Please print or type in the unshaded areas only.	EPA ID Number (copy from Item 1 of Form 1) AR0048755	Form Approved. OMB No. 2040-0086. Approval expires 5-31-92.

FORM 2E NPDES

EPA Facilities Which Do Not Discharge Process Wastewater

RECEIVING WATERS

For this outfall, list the latitude and longitude, and name of the receiving water(s).

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
001	34.	26	36	93.	1.	32	Ouachita River at Lake Catherine

II. DISCHARGE DATE *(If a new discharger, the date you expect to begin discharging)*

III. TYPE OF WASTE

A. Check the box(es) indicating the general type(s) of wastes discharged.

☐ Sanitary Wastes ☐ Restaurant or Cafeteria Wastes ☑ Noncontact Cooling Water ☐ Other Nonprocess Wastewater *(Identify)*

B. If any cooling water additives are used, list them here. Briefly describe their composition if this information is available.

No cooling water additives are used.

IV. EFFLUENT CHARACTERISTICS

A. Existing Sources — Provide measurements for the parameters listed in the left-hand column below, unless waived by the permitting authority *(see instructions)*.

B. New Dischargers — Provide estimates for the parameters listed in the left-hand column below, unless waived by the permitting authority. Instead of the number of measurements taken, provide the source of estimated values *(see instructions)*.

Pollutant or Parameter	(1) Maximum Daily Value *(include units)*		(2) Average Daily Value *(last year)* *(include units)*		(3) Number of Measurements Taken *(last year)*	(or) (4) Source of Estimate *(if new discharger)*
	Mass	Concentration	Mass	Concentration		
Biochemical Oxygen Demand (BOD)		< 2.0		< 2.0	1.00	
Total Suspended Solids (TSS)		1.2		1.2	1.00	
Fecal Coliform *(if believed present or if sanitary waste is discharged)*		NA		NA		
Total Residual Chlorine *(if chlorine is used)*		NA		NA		
Oil and Grease		3		2.6	5.00	
*Chemical oxygen demand (COD)		11.7		11.7	1.00	
*Total organic carbon (TOC)		2.7		2.7	1.00	
Ammonia *(as N)*		< 0.50		< 0.50	1.00	
Discharge Flow	Value 0.006 MGD		0.006 MGD		12.00	
pH *(give range)*	Value 6.1 - 6.7 su		6.1 - 6.7 su		12.00	
Temperature *(Winter)*	°C		°C			
Temperature *(Summer)*	°C		°C			

*If noncontact cooling water is discharged

V. Except for leaks or spills, will the discharge described in this form be intermittent or seasonal? ☐ Yes ☑ No

If yes, briefly describe the frequency of flow and duration.

The 30 gpm bearing cooling water flow is continuous.
The 100 gpm air wash water flow is continuous.

VI. TREATMENT SYSTEM *(Describe briefly any treatment system(s) used or to be used)*

None

VII. OTHER INFORMATION *(Optional)*

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations. Attach additional sheets, if necessary.

See Supplemental Information section of application.

VIII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title	B. Phone No. *(area code & no.)*
Gerard Fontenot, Director, Northwest Region, Entergy Services, Inc.	(281) 297-3418
C. Signature	D. Date Signed
Gerard Fontenot	2/7/13

Arkansas Analytical Inc.

11701 I-30 Bldg 1, Ste 115 - Little Rock, AR 72209
501-455-3233 Fax 501-455-6118

05 December 2012

Tina Burt
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203-0551

RE: Carpenter Dam Permit Renewal Sample

SDG Number: 1211257

Enclosed are the results of analyses for samples received by the laboratory on 28-Nov-12 14:35. If you have any questions concerning this report, please feel free to contact me.

Sample Receipt Information:

Custody Seals	✔
Containers Correct	✔
COC/Labels Agree	✔
Preservation Confirmed	✔
Received On Ice	✔
Temperature on Receipt	8.0°C

Sincerely,

Norma James
President

05 December 2012

Tina Burt
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203-0551
Project: Carpenter Dam Permit Renewal Sample

Date Received: 28-Nov-12 14:35

CASE NARRATIVE

Sample Delivery Group – 1211257

Qualified Analytical and/or Quality Control Results are Discussed Below:

BOD Analysis (B-03):
The Dissolved Oxygen depletion of the blank is greater than 0.2 mg/L. The reported result for sample 1211257-01 (Outfall 001) is estimated.

05 December 2012

Tina Burt
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203-0551
Project: Carpenter Dam Permit Renewal Sample

Date Received: 28-Nov-12 14:35

ANALYTICAL RESULTS

Lab Number:	**1211257-01**
Sample Name:	**Outfall 001**
Date/Time Collected:	**11/28/12 11:10**
Sample Matrix:	**Water**

Wet Chemistry	Units	Result	Qualifier(s)	Date/Time Analyzed	Batch	Method
Ammonia as N	mg/L	< 0.50		12/4/12 16:21	A212046	4500-NH3D
BOD-5	mg/L	< 2.00	B-03	11/29/12 14:15	A211361	5210B
COD	mg/L	**11.7**		12/4/12 16:55	A212051	410.4
Oil and Grease	mg/L	< 2.5		11/29/12 11:57	A211343	1664A
pH	S.U.	**6.74**		11/28/12 11:11	A211356	150.2
Temperature	°C	**15.1**		11/28/12 11:11	A211358	2550B
TOC	mg/L	**2.73**		12/3/12 15:00	A212015	5310B/9060A
TSS	mg/L	**1.2**		11/28/12 16:54	A211346	2540D

05 December 2012

Tina Burt
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203-0551
Project: Carpenter Dam Permit Renewal Sample

Date Received: 28-Nov-12 14:35

QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: A211343 (Water)
Prepared: 29-Nov-12 11:57 By: SB -- Analyzed: 29-Nov-12 11:57 By: SB

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Oil and Grease	<2.5 mg/L	88.9% / 88.5%	81.7% / NA		0.424%	

Wet Chemistry -- Batch: A211346 (Water)
Prepared: 28-Nov-12 16:54 By: AP -- Analyzed: 28-Nov-12 16:54 By: Allen

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TSS	<1.0 mg/L	85.0% / 87.0%	NA / NA		2.33%	

Wet Chemistry -- Batch: A211356 (Water)
Prepared: 28-Nov-12 09:13 By: AP -- Analyzed: 28-Nov-12 09:13 By: AP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
pH (Field)	NA	100% / 101%	NA / NA		0.284%	

Wet Chemistry -- Batch: A211358 (Water)
Prepared: 28-Nov-12 11:12 By: AP -- Analyzed: 28-Nov-12 11:12 By: AP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Temperature (Field)	NA	NA / NA	NA / NA	15.1 °C	0.00%	

Wet Chemistry -- Batch: A211361 (Water)
Prepared: 29-Nov-12 14:15 By: KP -- Analyzed: 05-Dec-12 08:13 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
BOD-5	<2.00 mg/L	101% / 99.5%	NA / NA		1.01%	B-03

Wet Chemistry -- Batch: A212015 (Water)
Prepared: 03-Dec-12 15:00 By: AP -- Analyzed: 03-Dec-12 15:00 By: AP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
TOC	<1.00 mg/L	107% / NA	103% / 113%		5.80%	

Wet Chemistry -- Batch: A212046 (Water)
Prepared: 04-Dec-12 09:15 By: KP -- Analyzed: 04-Dec-12 16:21 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
Ammonia as N	<0.50 mg/L	94.3% / NA	99.0% / 99.7%		0.750%	

05 December 2012

Tina Burt
Entergy Services, Inc.
P.O. Box 551
Little Rock, AR 72203-0551
Project: Carpenter Dam Permit Renewal Sample

Date Received: 28-Nov-12 14:35

QUALITY CONTROL RESULTS

Wet Chemistry -- Batch: A212051 (Water)
Prepared: 04-Dec-12 10:15 By: KP -- Analyzed: 04-Dec-12 16:55 By: KP

Analyte	BLK	LCS / LCSD	MS / MSD	Dup	RPD	Qualifiers
COD	<10.0 mg/L	93.5% / NA	113% / 104%		7.07%	

QUALIFIER(S)

*B-03: The dissolved oxygen depletion of the blank is greater than 0.2 mg/L. The reported result is estimated.

All Analysis performed according to EPA approved methodology when available:
SW 846, Revised December, 1996; EPA 600/4-79-020, Revised March, 1983; Standard Methods, 20th Edition.
Instrument calibration and quality control samples performed at or above frequency specified in analytical method.

Reviewed by: Norma James

Norma James
President

Arkansas Analytical Inc.

11701 Interstate 30, Bldg. 1, Ste. 115
Little Rock, AR 72209
PHONE: 501-455-3233
FAX: 501-455-6118

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION	Project Description	Turnaround Time
Entergy Services, Inc.	Carpenter Dam Permit Renwal Sample	24 Hour
P.O. Box 551	Outfall 001 Sample	48 Hour
Little Rock, AR 72203-0551	Reporting Information	72 Hour
	Telephone: 501-377-4038	Routine (5 Day)
Attn: Tina Burt	Fax: 281-297-6131	Preservative Code:
	Email: tburt@entergy.com	Bottle Type:

Preservation Codes:

1. Cool, 4 Degrees Centigrade
2. Sulfuric Acid (H_2SO_4), pH < 2
3. Nitric Acid (HNO_3), pH < 2
4. Thiosulfate for Dechlorination
5. Hydrochloric Acid(HCl)
6. Sodium Hydroxide (NaOH), pH > 12

Allen Parker
Sampler(s) Signature

Allen Parker
Sampler(s) Printed

Field Number	SAMPLE COLLECTION Date/s	Time/s	Grab	Comp	Number of Bottles	Sample Matrix	SAMPLE IDENTIFICATION/ DESCRIPTION	Field (pH, Temperature)	BOD, TSS	Ammonia, COD	Oil and Grease	TOC					Arkansas Analytical Work Order Number:
							TEST PARAMETERS	1	1,2	1,2	1,5						Bottle Type Code
								P	P	GA	GV						G = Glass; P = Plastic; V = Septum; A = Ambe
	11-28-12	1110 ~~1029~~ AP 11-28-12	X		6	Water	Outfall 001	X	X	X	X	X					12 1257-01

ONSITE MEASUREMENTS

	Sample	Duplicate	% Variance	Average	QC	QC Dup	Recovery
pH	6.74	6.74			7.03	7.05	
Time	1111	1112			0912	0913	
Temperature	15.1	15.1					
Time	1111	1112					

1. Relinquished by: (Signature)	Date/Time	2. Received by: (Signature)

3. Relinquished by: (Signature)	Date/Time	4. Received by lab: (Signature)
Allen Parker	1435 11-28-12	Sydney James

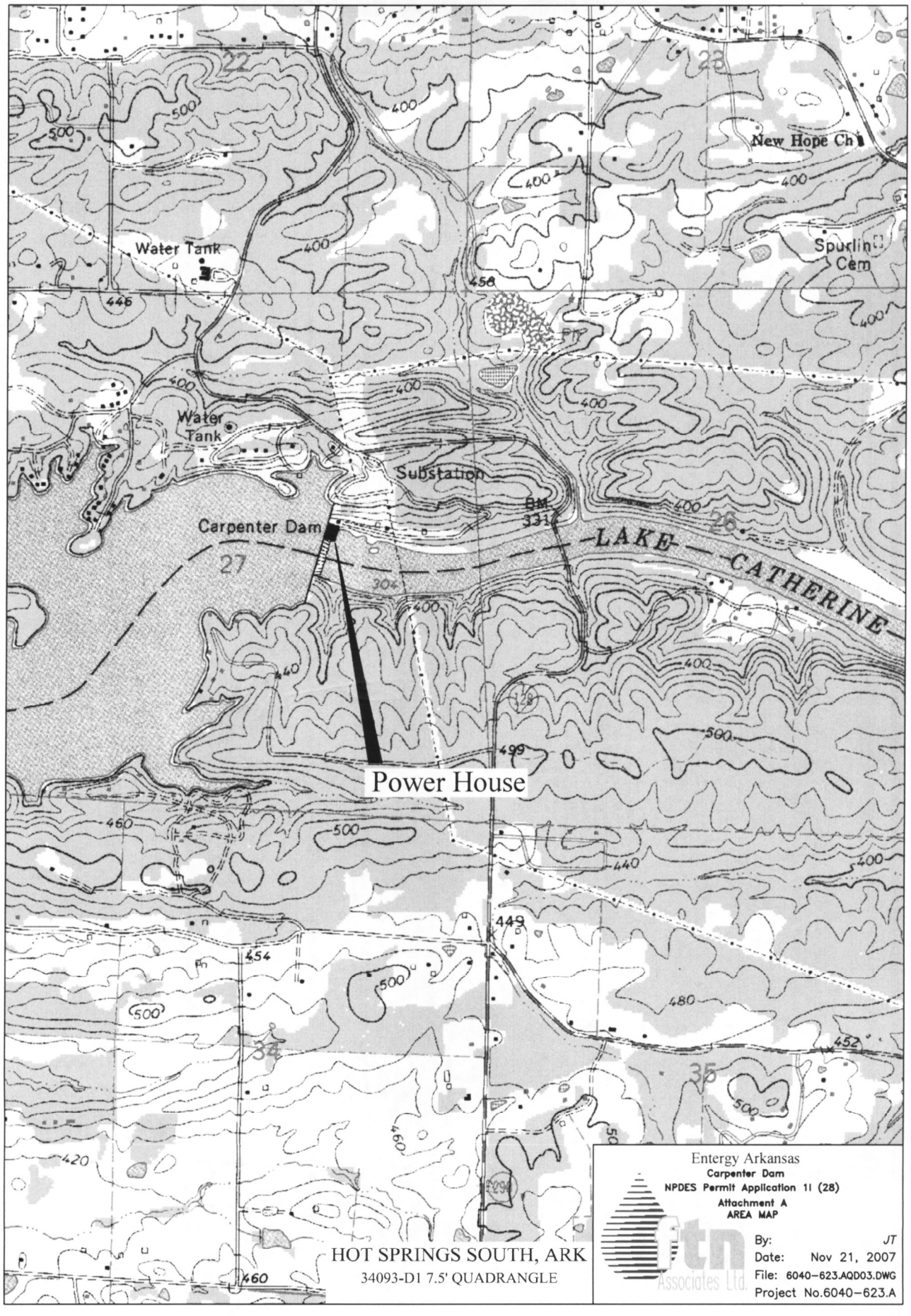
Revision 1
12/1/10

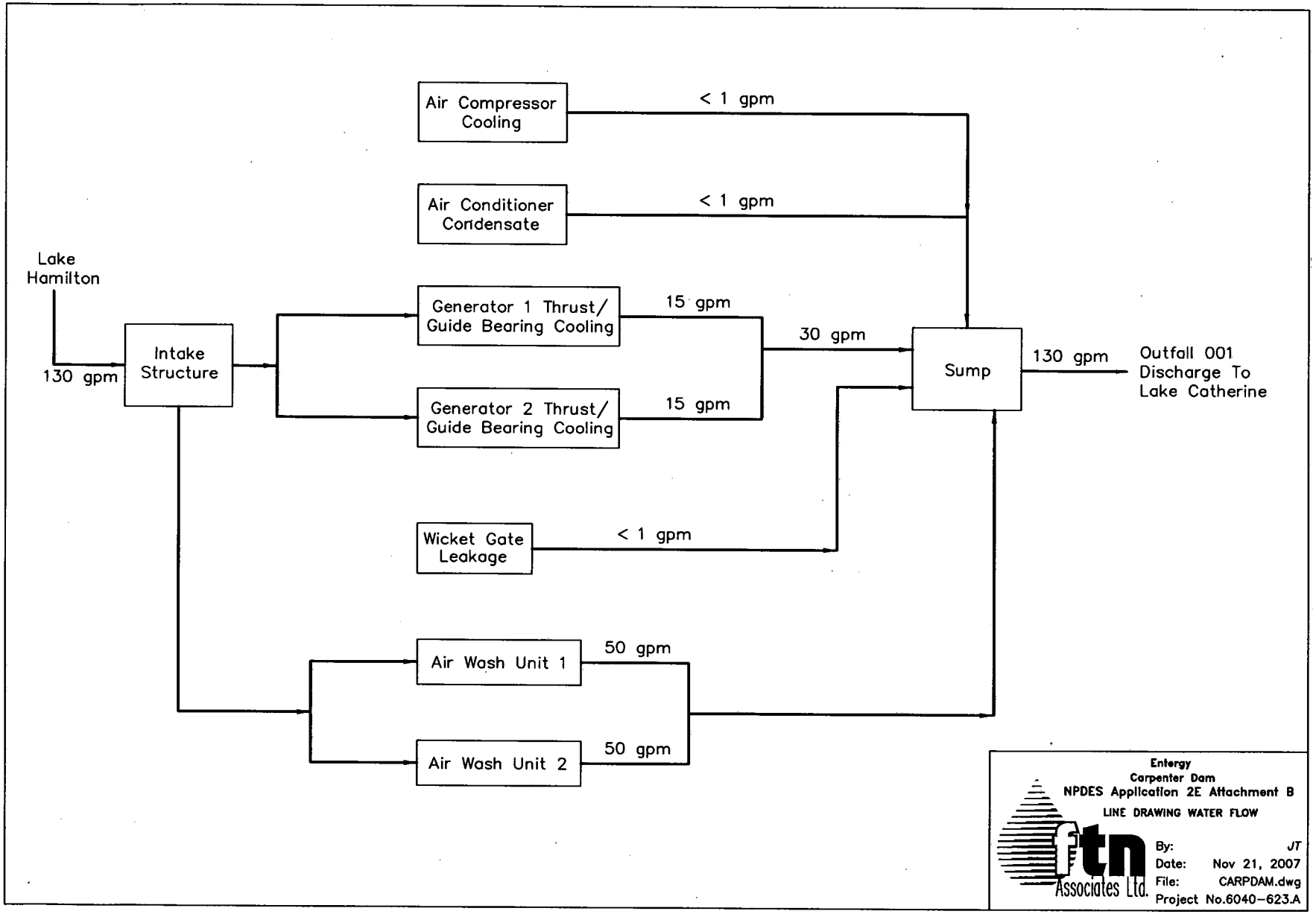
SAMPLE CONDITION UPON RECEIPT IN LAB

1. CUSTODY SEALS:	✓ Yes	No
2. CONTAINERS CORRECT:	Yes	No
3. COC/LABELS AGREE:	Yes	No
4. PRESERVATION CONFIRMED:	Yes	No
5. RECEIVED ON ICE:	Yes	No
6. TEMPERATURE ON RECEIPT:	8°C	

FOR COMPLETION BY LAB ONLY

REMARKS / SAMPLE COMMENTS


New Hope Ch
Spurlin Cem
Water Tank
Water Tank
Substation
BM 331
Carpenter Dam
LAKE CATHERINE
Power House
HOT SPRINGS SOUTH, ARK
34093-D1 7.5' QUADRANGLE
Entergy Arkansas
Carpenter Dam
NPDES Permit Application 11 (28)
Attachment A
AREA MAP
By: JT
Date: Nov 21, 2007
File: 6040-623.AQD03.DWG
Project No.6040-623.A
tn Associates Ltd.


Air Compressor Cooling
< 1 gpm
Air Conditioner Condensate
< 1 gpm
Lake Hamilton
130 gpm
Intake Structure
Generator 1 Thrust/ Guide Bearing Cooling
15 gpm
Generator 2 Thrust/ Guide Bearing Cooling
15 gpm
30 gpm
Sump
130 gpm
Outfall 001 Discharge To Lake Catherine
Wicket Gate Leakage
< 1 gpm
Air Wash Unit 1
50 gpm
Air Wash Unit 2
50 gpm
Entergy
Carpenter Dam
NPDES Application 2E Attachment B
LINE DRAWING WATER FLOW
ftn Associates Ltd.
By: JT
Date: Nov 21, 2007
File: CARPDAM.dwg
Project No.6040-623.A