Environmental Information Document

Tupelo Bayou Wastewater Treatment Plant

Conway Corporation

Agreement No. 00747-CGO-L

Project No. WRD-003-694

Prepared by: Garver LLC

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Arkansas Natural Resources Commission
Environmental Information Document
Conway Corporation Wastewater System Improvements

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1. DESCRIPTION OF THE PROBLEM

Conway is located in Central Arkansas, approximately 30 miles north of Little Rock on Interstate 40. Because of its centralized location, Conway has become one of the fastest growing cities in the state and encompasses over 40 square miles. Conway's water and wastewater infrastructure has been in constant need of expansion in order to keep up with the city's growing needs.

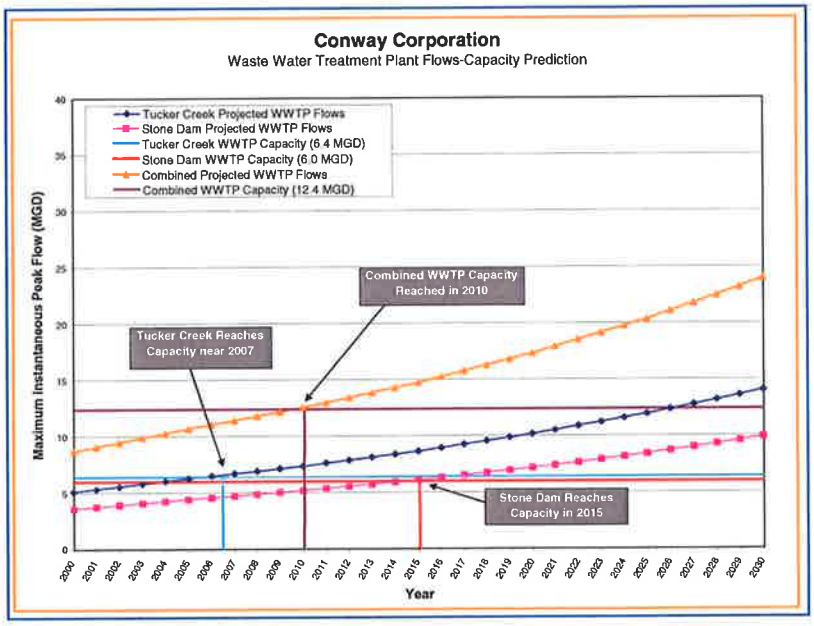
A. Design Criteria

The combined treatment capacity of the treatment plants in the Conway Corporation system is 12.4 million gallons per day (MGD). Currently these plants treat an average of approximately 8.7 MGD, over two thirds of the current capacity (Tucker Creek flow is at almost 75% of its capacity). This wastewater master planning effort evaluates Conway's wastewater collection and treatment facilities and is intended to serve as a guide to Conway Corporation for needed system improvements through the year 2030 with a design population of 109,424 people. Census tract data, previously published population projections, city land use, zoning, and demographic data were all used in analyzing needs within the planning area limits. Using the design criteria established for this planning effort, the projected wastewater flow for treatment will be approximately 24 MGD by the year 2030. Obviously the existing treatment facilities cannot handle that quantity of wastewater, and additional treatment capacity will be required in the relatively near future. The Stone Dam Creek Wastewater Treatment Plant (WWTP) is located in the south central portion of the City of Conway and receives wastewater from generally the eastern one-half of the city. The Stone Dam Creek WWTP discharges to Stone Dam Creek, and thence on to Lake Conway. The Tucker Creek WWTP is located in the southwest portion of the City of Conway and receives wastewater from essentially the western one-half of the city. The Tucker Creek WWTP effluent is pumped to the Arkansas River.

B. Current Treatment

Portions of the wastewater collection system for Conway were constructed prior to World War I. Since then, many extensions and modifications have been made to the collection system. In 1928, the original Stone Dam Creek WWTP was built, and has had improvements and additions done in 1939 and 1950 to where it now has a treatment capacity of 6 MGD. In 1957 the Conway City Council created Conway Corporation for the purpose of operating and maintaining the city's wastewater system. Conway Corporation has made additional modifications to the Stone Dam WWTP which took place in 1961, and constructed a second WWTP at Tucker Creek, to a capacity of 6.4 MGD, in 1996. Conway's sewage collection system is contained within three main drainage basins: Tucker Creek (west of the city), Stone Dam Creek (central portion of the city), and Little Creek (east of the city).

Figure 1.1 Conway Corp. WWTP Flows – Capacity Prediction



C. Influent and Effluent Characteristics

Table 1.1 Average Wastewater Characteristics for Stone Dam WWTP

Parameter	Influent	Effluent
BOD (mg/l)	149.83	--
TSS (mg/l)	181.03	2.14
TVSS (mg/l)	152.89	1.86
NH3-N (mg/l)	12.33	3.28
CBOD (mg/l)	2.07	--

Table 1.2 Average Wastewater Characteristics for Tucker Creek WWTP

Parameter	Influent	Effluent
pH	7.08	--
BOD (mg/l)	187.51	22.03
TSS (mg/l)	177.90	21.90
TVSS (mg/l)	155.31	19.76

D. Existing Collection System

The City of Conway's wastewater collection system consists of approximately 1,435,526 linear feet of piping, about 6,264 manholes, and five (5) pump stations with their associated force mains, as of January 2007. A map of the system is included in Appendix A.

E. Inflow/Infiltration Study

The Arkansas Natural Resource Commission (ANRC) Revolving Loan Fund regulations pertaining to infiltration and inflow (I/I) state that a measured annual base flow plus infiltration/inflow equal to or greater than 130 gallon per capita day (gpcd) is, by definition, considered excessive I/I. Similarly, the same is considered for peak-day weather flows in excess of 300 gpcd. Flow data for the first three (3) quarters of 2009 shows Conway base flow plus infiltration and inflow at 129.1 gpcd, and peak I/I at 207 gpcd, both below the excessive threshold limits stated above.

F. Existing Flow Data

In order to project the flow contribution projections for residential users, industrial users, commercial users, and I/I calculations, some basic flow contribution design criteria was developed and agreed upon by Conway Corporation and Garver. The flow contributions were determined as follows:

1. Residential Usage Design Numbers

   - A density of 2.75 lots/acre with 2.5 people/lot
   - A flow of 100 gpcd
   - Peaking Factor (P_f) = 5/ (population/1,000)$^{0.2}$ (with 5.0 being the maximum P_f used.)

2. Industrial Usage Design Numbers

   - A flow of 3,000 gal/acre-day (including allowance for I/I)

3. Commercial Usage Design Numbers

- A flow of 2,000 gal/acre-day (including allowance for I/I)

4. Residential Area Infiltration & Inflow

- A flow of 100 gpcd

The wastewater planning area is divided into seven distinct drainage basins: (1) Cypress Creek Area, (2) Tupelo Bayou Basin Area, (3) West Area, (4) Gold Creek Basin Area, (5) North Area, (6) East Area, and (7) South Area. A map showing these different basins is included in the Appendix B. Once these drainage basins were outlined on the map, the City of Conway Comprehensive Plan was used to identify the acreage defined as Commercial, Industrial, Single Family (5-10 units/acre), Multi-Family (10+ units/acre), Single Family (0-4 units/acre), and floodway areas within each drainage basin. The expected development of each basin is shown in Table 1.3 below.

Table 1.3 Defined Usage Areas in Acres

		Residential					
	Total Acres	Single Family (0-4 units/acre)	Single Family (5-10 units/acre)	Multi-Family (10+ units/acre)	Commercial	Industrial	Flood Way
West Basin	9,120	6,295	278	171	1,271	525	580
Tupelo Bayou	10,637	8,833			220	942	642
Cypress Creek	5,330	4,766			250	314	
Preston Area	5,090	4,453	15	22	150	450	
North Area Flow Only	1,586	1,586					
East Area Flow Only	5,828	5,028			800		
South Area Flow Only	2,331	2,331					

* All Values Determined Form City of Conway Comprehensive Planning Map.

Floodways will not be developed, but will remain open space. After each area was divided, the flow for each area was calculated using the previously mentioned design criteria. This was done by first estimating the percentage build-out for each area. The Cypress Creek Area and West Areas are expected to contain the most growth over the next twenty years and, therefore, have the highest percentages for build-out. The number of estimated developed acres was then computed by multiplying the total acres by the percent build-out. After the estimated acres to be developed were determined, projected flows were calculated using the design flow contributions stated above. To ensure that the estimated population matched the flow calculations, the estimated population growth for each area was also calculated. These calculations can be found in Appendix C of this report.

In Table 1.4, the sum of the estimated increase in wastewater flow from the various drainage basins was determined in gallons per day for the design year 2030.

Table 1.4: Projected Increase in Flow Per Basin – Year 2030

Area	Total average day flow (gpm)	Maximum Instantaneous Flow + I/I (gpm)
West Basin	3,606	12,062
Tupelo Bayou	2,355	7,597
Cypress Creek	1,532	5,272
Preston Area	1,620	5,517
North Area Flow Only	220	856
East Area Flow Only	1,081	3,439
South Area Flow Only	162	634
Total	10,576	35,378
Total Gal/day	15,230,007	50,944,526

The projected demands for 2030, including the existing flows of 5.1 MGD to the Tucker Creek WWTP and 3.6 MGD to the Stone Dam Creek WWTP, are approximately 24.0 MGD (average); a calculated peak diurnal flow of 40 MGD; and, a future maximum instantaneous flow plus I/I of approximately 71.4 MGD.

Contributions to the existing system were divided into two main groups, "industrial large contributors" and "other contributors". The "industrial large contributors" group includes the contribution of Tokusen USA, UCA, Virco, and seven (7) other commercial/industrial contributors for which Conway Corporation maintains metered information. The "other consumers" group includes the remainder of the minor industrials, commercial, and residential classifications. The "industrial large contributors" group accounts for approximately 1.37 MGD of the total wastewater contribution, or about 17% of the 2005 average day water demand. Table 1.5 below shows the "industrial large contributor" group and each of their respective contributions for the period January 2005 thru December 2005.

Table 1.5 Industrial Large Wastewater Contributors List

Top 10 Water Customers for Conway Corporation *For the period January 2005 thru December 2005*		
Water Customer	***MGAL For 2005***	***GPM For 2005***
Tokusen USA	141.243	269
UCA	75.182	143
Virco	48.475	92
Conway Regional Health Systems	43.247	82
Conway Mills	39.595	75
Conway Human Development Center	36.647	70
Conway Country Club	31.434	60
Hendrix College	30.909	59
Conway Public Schools	27.825	53
Acxiom	26.286	50
TOTALS:	500.843	953
Note: Water Usage for 2005 was greater than 2006; conservatively 2005 water usage was used.		

Subtracting the 1.37 MGD of the 2005 average day contribution from the total 2005 average day WWTP's combined influent flows of 8.7 MGD (5.1 MGD to Tucker Creek WWTP and 3.6 MGD to Stone Dam WWTP, all figures determined from WWTP records to date and information obtained by Conway Corporation employees) leaves 7.33 MGD of contribution for the "other contributors" group.

2. ENVIRONMENTAL SETTING

A. Geological Elements.

The proposed development site lies in the alluvial plain of the Arkansas River. The site is bordered and protected by a constructed levee on its western side that isolates it from the river's floodway. The topography of the site is flat and, therefore, the surface drainage characteristics of the site would be considered poor. The surface geology of the area is predominantly the Roxana, very fine sandy loam soil association. A smaller portion of the area, at a slightly higher elevation, lies in the Gallion, silt loam soil association. The Quaternary age Arkansas River alluvium is composed of an upper 30 feet of silt and clay overlying medium sand 30-50 feet in depth, and 50-70 feet coarse sand and gravel that overlies bedrock. These alluvial soils are underlain by Pennsylvanian Period Middle Atoka, marine silty sandstone and grayish black shale, at depths below 70 feet.

The soil associations for the development site share a hydrologic soil group, and erosion factors. The well drained soils are categorized as being in Hydrologic Soil Group B. Permeability varies from 0.6 to 2.0 in/hr. The erosion factors are 0.37 and 5, for K, and T,

respectively. The site is classified as "Prime Farmland" according to the United States Department of Agriculture (USDA) criteria (Figure 2.1).

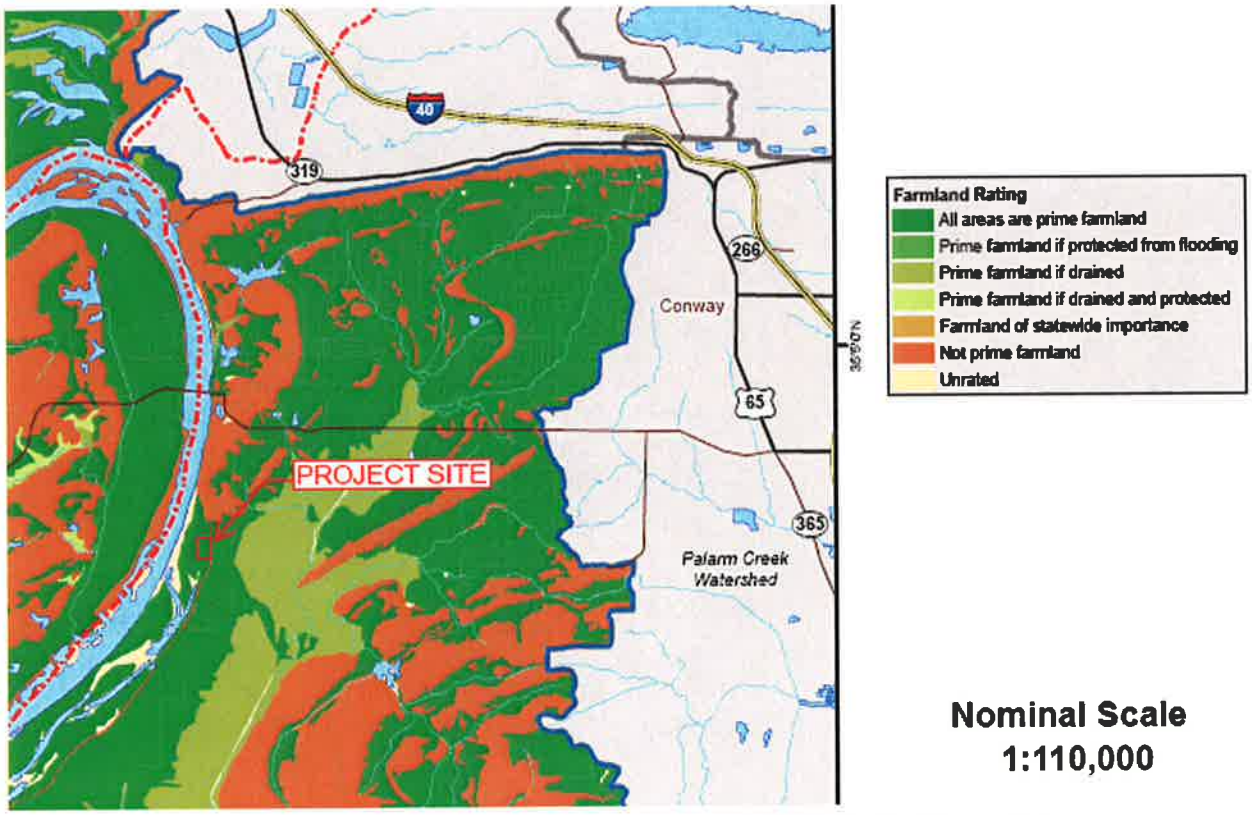


FIGURE 2.1 ROCKY CYPRESS CREEK – ARKANSAS RIVER, SOILS PRODUCTIVITY (FARMLAND RATING) MAP PRODUCED BY CENTER FOR ADVANCED SPATIAL TECHNOLOGY (CAST)

B. Hydrological Elements

The primary surface water bodies located within the project area are the Arkansas River, Tucker Creek, Stone Dam Creek, and an unnamed tributary of Tupelo Bayou. The Tupelo Bayou Wastewater Treatment Plant (TBWWTP) will discharge into the Arkansas River at approximately river mile marker 154 (Appendix D), segment 3F as listed in the Water Quality Management Plan. This segment of the Arkansas River is part of the larger navigation system know as the McClellan-Kerr Arkansas River Navigation System (MKARNS). The MKARNS is a series of 18 lock and dams between the mouth of the Arkansas River and the head of navigation at Catoosa, Oklahoma. The series of locks and navigation pools allows river traffic to navigate the 420 foot elevation difference between the two points. The average navigation channel is 9 feet in depth and 250 to 300 feet wide.

The interceptor sewer will cross Tucker Creek, Stone Dam Creek, and other unnamed tributaries (Appendix E). Construction will occur through a segment of Stone Dam Creek which is listed on the Impaired Waters 303(d) list. Stone Dam Creek is listed as a Category 5d stream which indicates that the stream needs data verification to confirm use impairment before a Total Maximum Daily Load (TMDL) can be set. The source of

pollution is listed as "unknown". Stone Dam Creek is also listed as a Category 4a stream for pollutants ammonia and nitrates. Category 4a streams have completed TMDL's for the listed pollutants. A municipal point source is listed as the source for both pollutants. The TBWWTP Outfall is not located within the segments of the Arkansas River listed on the Impaired Waters 303(d) list of the Clean Water Act.

Aquifers associated with the project area include the Arkansas River Alluvial Aquifer, Western Interior Plains Confining System, and the Ouachita Mountains Aquifer. The Arkansas River Alluvial Aquifer is characterized by its interconnection to the Arkansas River and its high yield potential. The aquifer has a layered structure that ranges from 40 to 80 feet in thickness with basal gravel at the bottom, that transitions to fine sands towards the upper strata. Well yields in this aquifer generally range from 300 to 700 gallons per minute (gpm).

The Western Interior Plains Confining System consists of siltstone, limestone, shale, and sandstone beds that are reinforced by silica and iron. This aquifer ranges from 30 to over 8000 feet in depth. The average well yield from this aquifer ranges from 2.5 to 19 gpm. Water from this aquifer is generally used for domestic supply since its water quantity and quality is typically too poor for public supply.

The Ouachita Mountains Aquifer is made up of shale, sandstone, and chert beds. This aquifer has a wide area extent but cannot sustain substantial well yields. Typically wells in this aquifer produce less than 50 gpm. Water levels can change up to 10 feet per year in this aquifer. None of the aquifers located within the project boundary should be impacted through runoff or point source pollution. A Stormwater Prevention Pollution Plan (SWPPP) will be submitted to Arkansas Department of Environmental Quality (ADEQ) and it will describe the measures to be taken to prevent groundwater contamination due to runoff.

Water quality parameter concentration limits for Segment 3F of the Arkansas River are defined in Regulation No. 2 published by the Arkansas Pollution Control and Ecology Commission (APCEC). Several of the limits are region specific and can vary from region to region. Other limits such as phosphorus are case specific to ensure that the mass loading is not detrimental to the surrounding environment. Many heavy metal limits are directly correlated to the hardness of the water. Turbidity limits are listed in Reg. 2.503 and state "There shall be no distinctly visible increase in turbidity of receiving waters attributable to municipal, industrial, agricultural, other waste discharges or instream activities." The regulation also states that turbidity shall not exceed 50 NTU for baseflows, or 52 NTU for all flows at any time for the Arkansas River. Regulation 2.504 pertains to pH limit and states "The pH of water in streams or lakes must not fluctuate in excess of 1.0 unit over a period of 24 hours and pH values shall not be below 6.0 or above 9.0." Dissolved oxygen is regulated by Regulation 2.505, and it lists the primary and critical D.O. limit at 5 mg/L. Listed below (Table 2.1) are other common water quality parameters and their concentration limits. Limits not listed can be found in Regulation No. 2. The discharge from the proposed TBWWTP will comply with the ADEQ issued National Pollutant Discharge Elimination System (NPDES) Permit, which has not been drafted at this time.

Table 2.1 Common Water Quality Concentration Limits

Parameter	Concentration Limit (mg/L)
Cl	250
SO_4	100
TDS	500
Phosphorus	1*

*Will be determined by ADEQ if discharge is greater than 15 MGD

Different indicators of water quality are recorded by ADEQ throughout the state. Two stations related to the project are listed along with their common water quality parameters and median concentrations for the period 2005-2009 (Table 2.2). Station ARK0051 is located on Stone Dam Creek and station ARK0030B is located at Lock and Dam No. 8 (Toad Suck).

Table 2.2 Water Quality Parameter Concentrations for Lock & Dam No. 8 and Stone Dam Creek

Common Water Quality Parameters	Arkansas River at Toad Suck Lock & Dam	Stone Dam Creek
Alkalinity (mg/L)	90.8	43.9
Chloride (mg/L)	77.6	37.7
Dissolved oxygen (mg/L)	8.56	6.83
Field pH (s.u.)	7.70	6.92
Nitrite + Nitrate-N (mg/L)	0.372	4.71
Total organic carbon (mg/L)	5.465	9.425
Total phosphorus as P (mg/L)	0.115	1.84
Total suspended solids (mg/L)	7.5	11.2
Turbidity (NTU)	17.9	21.1
Total dissolved solids (mg/L)	297	320
Fluoride (mg/L)	0.195	0.63

Point source pollution in the project watershed comes from two primary sources, Stone Dam Creek WWTP and the Tucker Creek WWTP. Both facilities have an NPDES permit which regulates their discharges. Once the TBWWTP is operating, the Stone Dam Creek WWTP will be decommissioned and its point source contributions will cease. Tucker Creek will continue to treat wastewater until the TBWWTP can be expanded to provide treatment for all of Conway's wastewater. Once this occurs, Tucker Creek WWTP will be converted to equalization basins for wet weather surge wastewater storage. Agricultural runoff is the primary source of non-point source pollution for this watershed. Stormwater runoff from construction sites is another source of non-point source pollution.

Conway's public water supply is drawn from Lake Brewer and Cadron Creek, which are both located north of the project area. Neither of these water supplies should be affected by the proposed project. No future projected water sources are located near or within the project area.

Floodplains and wetlands comprise a large percentage of the project area. Floodplains surround the TBWWTP site and extend east along an unnamed tributary of Tupelo Bayou. Appendix F contains a map that illustrates the various flood zones determined by Federal Emergency Management Agency (FEMA). The Faulkner County Levee located along the western edge of the proposed TBWWTP site diverts the 100-year floodplain to the south. The elevation of the top of the levee is 285 feet MSL. FEMA has listed the 100-year flood elevation outside the levee at 278 feet MSL. When the Arkansas River floods it recharges the wetlands adjacent to the Arkansas River and replenishes the agricultural land with nutrients leftover from the deposited sediment. Measures were taken during the preliminary design to place all TBWWTP structures above the FEMA listed 100-year flood elevation.

Several disconnected wetland areas are distributed along the main collection pipeline. A wetland jurisdiction determination was performed by Bill Henson in 2009. Mr. Henson is listed on the U.S. Army Corps of Engineers, Little Rock District's website as a certified wetland delineator. He also served as the Chief Officer of the Regulatory Branch of the USACOE Little Rock District before retiring. Mr. Henson's findings show that approximately 1.2 acres of wetlands will be impacted. Several wetland areas were avoided by shifting the linework around the isolated wetland. Some wetland areas had to be crossed due to obtaining easements for the linework and the length of linework that would be needed to pass around wetland areas. Attached in Appendix G is a copy of Mr. Henson's wetland delineation report. This report delineates all known wetlands within the project area and characterizes the vegetation and soils for each wetland site. Special consideration will be given to each wetland site during the construction phase with implementation of Best Management Practices (BMP's) and restoration of any disturbed areas to preexisting conditions until the site is stabilized.

Tucker Creek and Stone Dam Creek could be impacted from stormwater runoff during construction of the collection system. Working in favorable stream conditions and utilizing BMP's will be required by the construction contract documents and construction permit authorization from regulatory agencies to minimize potential runoff to minimize water quality concerns such as increased turbidity and several other pollutants that are generally released during storm events.

C. Climatic Elements.

The climate in Conway, AR is hot during the summer and mildly cold during the winter. The average maximum and minimum temperature during the summer months are 90.2 degrees F and 69.0 degrees F respectively. The average maximum and minimum temperature during the winter months are 54.0 degrees F and 32.9 degrees F respectively. The average daily precipitation during the summer months is 0.10 inches and the average daily precipitation during the winter months is 0.14 inches. Average prevailing winds for this area typically blow at a speed of 7.3 mph from the West Southwest direction.
There are no major topographic features in this area that directly influence climatic conditions. Air quality monitoring data in the immediate area is limited to Particulate Matter (PM2.5). Monitor trend reports for PM2.5 in this area have indicated a total of two exceedances of Environmental Protection Agency (EPA) standards in the past nine years. Monitoring of other principal pollutants regulated by the National Ambient Air Quality Standards (NAAQS) is not done in this area; therefore no comparisons can be made.

D. Biological and Ecological Elements

The project area's flora can be described as grass plains with a mixture of oak, hickory, and pine forests. Native wetland vegetation can be found at scattered wetland sites throughout the project area. Common animals located within the area are populations of deer and other native mammals, native reptiles, and both native and migratory birds. The Arkansas River Valley corridor is an important migratory route for many species of ducks, geese, and other birds. The Arkansas River provides habitat for a diverse aquatic ecosystem that contains several species of bass, catfish, gar, and other native fish species. The Arkansas River is a recreational destination for many water enthusiasts and anglers.
The U.S. Fish and Wildlife Service (USFWS), the Arkansas Game and Fish Commission (AGFC), and the Arkansas Natural Heritage Commission (ANHC) were asked to provide consultation in regards to threatened and endangered species. Recommendations were made to consult with ADEQ regarding the nesting site of the Interior Least Tern, located on the opposite bank of the Arkansas River from the TBWWTP outfall, and the spawning area of the alligator gar near Stanley Bar islands. Measures should also be taken when crossing waterways to ensure that no freshwater mussel habitat is disturbed. BMP's should be used where practicable to limit impacts to the surrounding environment. See attached correspondence from these agencies regarding threatened and endangered species in Appendix H.

E. Environmentally Sensitive Areas

The project area is not located within any national park, state park, wildlife refuge, or wildlife management area. There are no streams or rivers located in the project area that are listed as Extraordinary Resource Waters or Natural or Scenic Waterways. Wetlands that may be affected by this project are discussed in Appendix G.

F. Cultural Resources

The Department of Arkansas Heritage was contacted regarding properties of architectural, historical, or archeological significance within the project area. This required action is part of the Arkansas Historic Preservation Program (AHPP). According to correspondence from AHPP (Appendix I), there are no significant

properties within the proposed project area. However, if a resource is encountered that appears to possess historical or architectural significance; or if human remains or artifacts, such as Native American pottery, stone tools, old bottles, or china are discovered during this project, work in the area of discovery will be stopped immediately and AHPP personnel contacted to mitigate the discovery.

G. Social & Economic Conditions

Social Environment:

The proposed site is located just outside the city limits of Conway, AR at the following coordinates, 35° 03' 17" N, 92° 32' 13" W. It is anticipated that the area will be annexed into the City of Conway at a future date. The population of the City of Conway as of the latest published estimate from the UALR Institute of Economic Advancement (July, 2008) was 57,544. This exceeds the 2000 Census population of 43,692 (adjusted upward from published Census number of 43,167 due to legal boundary updates) by 13,852 and corresponds to an annual compounding growth rate of 3.5%. The table below includes population estimates for the city of Conway based upon the 3.5% annual compounding growth factor.

Table 2.3 Conway Population Estimates, 2000-2050

Conway Population Estimates					
2000*	2010	2020	2030	2040	2050
43,692	61,645	86,978	122,714	173,138	244,281

*Adjusted from Census # due to legal boundary updates

The population approximately breaks down along racial lines as shown in the Table 2.4.

Table 2.4 Conway Population Percentages

Conway Population Percentages by Race					
White	Black	Hispanic	Asian	Native American	Other
81.77%	13.54%	2.90%	1.29%	0.31%	0.19%

The services provided by the proposed construction of the TBWWTP will not be denied to any person on the basis of race, color, income, or national origin. It is not expected that the construction of the proposed TBWWTP will disproportionately affect any of the above minority groups, low income groups, or any cultural, historical, or protected, resources of the groups.

H. Needs of the Project Area

The area along Lollie Road is predominantly rural with farming and some bare minimum residential development. The area was specifically located on undeveloped property to provide the greatest opportunity to minimize community residential and business impacts. It is expected that with the addition of the proposed airport in this area, as well as the TBWWTP, that industrial and some commercial development will occur in the Tupelo Bayou basin. This will improve the quality of this area by opening it up for development.

I. Other Federal, State and Local Programs

The Federal Highway Administration has approved a Draft Environmental Impact Statement identifying the location of the Conway Western Arterial Loop to meet current and future traffic needs. An essential element of this proposed new location route is to provide additional arterial route capacity in western Conway. This new location route will connect at the north and south with Interstate 40 which is a major east-west route. This bypass will follow a portion of Hogan Road and is in the preliminary stages of design. The gravity section of the collection system will cross a portion of the bypass location on the southwest side of Conway.

The selected TBWWTP site is located in the southwest section of the planning area, which is also near the location of Conway's proposed airport. Two important regulations that affect this site is Advisory Circular 150/5200-33A; Hazardous Wildlife Attractants on or Near Airports, of the Federal Aviation Administration (FAA) and Act 1336 of 1997 of the State of Arkansas; To Limit the Power of a Municipality to Condemn Property Outside Its Corporate Limits for a Sewage Collection System or Sewage Treatment Plant. The FAA Circular has a specific requirement concerning the location of a WWTP to the Air Operations Area of an airport. This requires a 10,000 foot distance from any airport runway used by turbojet aircraft to a wastewater treatment facility. Appendix J illustrates the relationship of this 10,000 foot radius requirement from the Air Operations Area of the planned airport to the proposed TBWWTP site. This drawing reflects the latitude and longitude of the north end of the airport runway and TBWWTP location to scale. As you can see, the 10,000 foot requirement overlaps the southern end of the WWTP property. No other highways, lakes, parks will be impacted by this project. There is small housing development in this area which is mainly composed of farmland. With the addition of the airport, the TBWWTP will be an addition to the area which should encourage some industrial development.

J. Land Use

Current land use is for farming purposes. There are no known environmentally sensitive areas nearby. The addition of the airport and the TBWWTP in this area will allow for increased industrial development.

K. Ambient Noise Levels

The planning site is located in a remote area which for the most part has minimal ambient noise levels. Potential noises or sounds that can currently be heard on the site include an adjacent gravel plant located to the south of the planning site and its associated conveyers and gravel trucks. Vehicle traffic could be heard from vehicles traveling on Lollie Road which runs along the east side of the planning site. Residential noises could be heard from the homes that are located to the north of the planning site. Agricultural equipment could also be heard from the adjacent agricultural fields in this area.

L. Energy Sources

The TBWWTP will be served with electrical power by Conway Corporation with a primary radial feeder at 13.8 kV. The plant service will begin at a dip pole on the east side of the facility. From there forward into the plant the electrical service will be underground. The expected connected load of the plant will be approximately 4,000

kVA. Conway Corporation has no knowledge of any current problems related to energy supply and demand within the community. Currently, the distribution lines to the area are not sufficient to provide the necessary power for the plant loads; therefore, improvements to the distribution system servicing the area will be required. The infrastructure improvements required for the distribution of power to the proposed plant will allow for future industrial development in the area surrounding the development site.

3. ALTERNATIVES TO THE PROPOSED ACTION

A. "No Action" Alternative

If the TBWWTP is not constructed on the proposed planning area, the future environment of the proposed planning area should not change. The "no action" alternative in this proposal poses no changes to the environmental setting of the planning site.

B. Alternative Wastewater Management Techniques

Various alternative wastewater management techniques were considered in the Master Plan for this project. Land application of wastewater was not considered a feasible alternative due to the amount of land that would be required to serve a projected population of 109,424 for the planning year of 2030. Treatment alternatives included expanding Stone Dam Creek WWTP, expanding Tucker Creek WWTP, and construction of a new WWTP. Discharge alternatives for the proposed plant were not considered due to its close proximity to the proposed receiving water body. Wastewater reuse was not considered a feasible alternative for a plant of this capacity. During the Master Plan preparation, Conway Corporation expressed the desire to produce Class A Biosolids from the proposed plant. Thus cost effective facilities to produce Class A Biosolids were determined to be gravity thickening, dewatering by centrifuge, heat drying, and energy recovery by incineration of the heat dried solids. However, as a result of the Value Engineering (VE) of the project, Conway Corporation accepted the VE Recommendation to eliminate the dewatering and Class A sludge processes and install Anaerobic Digestion facilities with ultimate disposal of Class B Biosolids in liquid form by land application. The anaerobic digestion facilities were sized on a preliminary basis in preparation of the Response to the VE Recommendation. Based on that preliminary analysis, the TBWWTP sludge processing facilities will consist of gravity thickening of combined primary plus waste activated sludge in two (2) thickeners each 60 feet in diameter by 12 feet side water depth, two (2) heated primary digesters, each 120 feet in diameter by 23.5 feet side water depth, and one (1) secondary digester 120 feet in diameter by 23.5 feet side water depth with gas holder cover. The secondary digester will function as a sludge storage facility (approximately 30 days storage) for holding digested solids during times that weather conditions will not permit land application of the biosolids. The sizing of the facilities may vary somewhat from these preliminary design figures during final design. Potential phasing of these facilities will also be considered during final design.

C. Environmental Impacts from Alternative Techniques

Table 3.1 Environmental Impacts from Alternative Techniques

Proposed Action	Environmental Impacts	Positive/Negative Impact
Expand Stone Dam Creek WWTP	• Larger Footprint • Increased Noise • Increased Discharge & Nutrient Concentrations into Receiving Stream	-
Expand Tucker Creek WWTP	• Larger Footprint • Increased Noise • Increased Discharge & Nutrient Concentrations into Receiving Stream	-
Construct New Tupelo Bayou WWTP	• Minor Impacts to Current Environmental Setting	0

D. Reasons for Accepting/Rejecting Alternative Techniques

It is not likely that the space available at the Stone Dam Creek WWTP site is sufficient to contain a plant of the required capacity, so more property would have to be obtained. The plant is in a rapidly developing portion of the city already in close proximity to sensitive neighbors. A significant portion of the drainage basin of the city (the area that will contain the most growth during the planning period) drains away from the Stone Dam Creek WWTP. Significant pumping and force main construction would be required to move the wastewater from the western areas of the city to the Stone Dam Creek WWTP. The discharge from the Stone Dam Creek WWTP is to Stone Dam Creek and thence to Lake Conway. As mentioned above, the discharge limits for this plant are likely to become more stringent in the future and could require a significantly higher degree of treatment for nutrient removal. The construction and operation of a major facility such as this just would not fit this area. Therefore this alternative was eliminated from consideration.

The Tucker Creek WWTP site is in the heart of the land with the highest growth potential in the City of Conway. However, a good portion of that service area is "downstream" of the Tucker Creek WWTP. This means that gravity sewers would have to be constructed draining away from the plant to serve this new development, and pump station(s) and force main(s) constructed to pump the water back to the plant. After treatment, the discharge from the plant is pumped to the Arkansas River. The Tucker Creek WWTP effluent pumping and force main capacity would have to be increased for the additional growth needs. Discharge to the Arkansas River from a proposed central plant, the proposed TBWWTP, in the southwestern portion of the service area can be accomplished with a gravity outfall sewer. The Tucker Creek WWTP sizing and costs would be the same as for the TBWWTP discussed below. The TBWWTP is sited such that the areas that will develop around the proposed airport can be sewered more economically than bringing wastewater all the way back north to the Tucker Creek WWTP. The TBWWTP

would not require effluent pumping except during exceptionally high Arkansas River stages. Considering these factors, a plant in the southwestern corner of the service area, the TBWWTP, to serve the entire Conway service area is more cost effective than the expansion of the Tucker Creek WWTP to serve the entire city. Therefore, this expansion of the Tucker Creek WWTP was eliminated from consideration.

The capital cost of expansion of the existing plants, Stone Dam and Tucker Creek, as well as the capital cost of a central plant were compiled as part of the Master Plan development in 2007. Details regarding these costs can be found below.

The capital cost of expansion of the existing plants, Stone Dam and Tucker Creek, were calculated to cost $50,606,000 with a present worth value of the differential operation and maintenance costs of $16,613,000. The total present worth value of expansion of the existing plants is $67,219,000.

The capital cost of constructing a central plant in the Tupelo Bayou Basin to serve the entire sewer service area of the City of Conway was calculated to be $46,567,600 (over $4 million less than the capital cost of expansion of the existing plants) with a present worth value of the differential operation and maintenance costs of $10,332,000 (over $6 million less than operating and maintaining the existing plants). The total present worth value of construction of a central plant was $56,899,600.

The long term cost effective alternative for wastewater treatment for Conway Corporation is to construct a single treatment facility and abandon treatment at the sites of the two (2) existing treatment plants.

Again it should be noted that the capital costs for facilities that are common to each alternative, such as an administration building, laboratory, wet weather flow equalization basins, etc., are not included in the present worth analyses. Nor has engineering and contingency costs been included. Contingency costs would only exacerbate the differences noted above in the present worth values of the alternatives examined.

Class B Biosolids' regulations have significant restrictions as to how land application must be managed. Management requirements include no application of solids to food crops; pasture land has to be closed for a specific period following solids application, etc. These restrictions are making it more difficult to obtain adequate property for solids disposal.

E. Flow and Waste Reduction Measures

Hydraulic modeling of the entire collection system was performed to help identify susceptible locations for I/I for the master planning effort. Conway Corporation, aware of their obligation regarding sanitary sewer overflows, has been performing a sewer system evaluation for locations of occurring I/I and installing Cured in Place Pipe (CIPP) for further protection of older sewer pipes. There are several areas of the collections system experiencing I/I problems and are addressed in the hydraulic model. Most all of Conway's largest I/I problems originate with wet weather flow and are therefore most likely connected with pipe blockages and breaks, incorrect or damaged service connections, and manhole breaches. Conway Corporation is currently utilizing TV cameras to examine its entire collection system. The program is scheduled for a 3 year effort to camera the entire collection system. Conway Corporation will repeat this effort

after completion to provide a continuous collection system visual evaluation every 3 years.

F. Alternative Methods for Sludge Disposal

To properly compare the alternatives of expansion of the existing plants as compared to the construction of a single plant to serve the total service area, the cost effective manner of sludge disposal must also be determined. In the discussion above, the liquid train alternatives identified as viable for treatment of wastewater from the Conway Corporation service area were shown to be 1) The expansion of the Stone Dam Creek and Tucker Creek WWTP's to serve their respective services areas, and 2) Abandonment of the existing plants and construction of a new central plant to serve the entire service area. Each of these alternatives will require sludge processing for the influent organic solids and the biological solids that are generated by the treatment process.

Solids treatment at the Stone Dam Creek WWTP consists of anaerobic digestion followed with ultimate disposal by land application of the digested solids. Solids disposal at Tucker Creek WWTP will be required on a periodic basis as the solids accumulate in the bottom of the lagoons. The Conway Corporation staff advises that finding suitable properties for land application of these solids is becoming more difficult as time progresses. The digested solids comply with Class B Biosolids' requirements. However, Class B Biosolids' regulations have significant restrictions as to how land application must be managed. Management requirements include no application of solids to food crops; pasture land has to be closed for a specific period following solids application, etc. These restrictions are making it more difficult all the time to obtain adequate property for solids disposal.

During the Master Plan preparation, Conway Corporation expressed the desire to produce Class A Biosolids from the proposed plant. Thus cost effective facilities to produce Class A Biosolids were determined to be gravity thickening, dewatering by centrifuge, heat drying, and energy recovery by incineration of the heat dried solids. However, as a result of the VE of the project, Conway Corporation accepted the VE Recommendation to eliminate the dewatering and Class A sludge processes and install Anaerobic Digestion facilities with ultimate disposal of Class B Biosolids in liquid form by land application.

G. Alternative Methods of Disinfection

Conway Corporation and Garver considered disinfection alternatives of the TBWWTP effluent and concluded disinfection would be best accomplished by chlorination followed by dechlorination to meet the anticipated discharge permit total residual chlorine limits. Conway Corporation requested that ultraviolet disinfection equipment be examined and compared to the cost of chlorination/dechlorination. The estimated opinion of probable initial costs of these alternatives is listed below. Equipment costs for these alternatives were based on Capital Controls brand chlorination/dechlorination equipment and Trojan channel type brand ultraviolet equipment. These opinions of probable initial costs include equipment costs as well as structure costs.

Chlorination/Dechlorination	$2,036,000
Channel Type Ultraviolet Disinfection	$1,500,000

The structures for both disinfection alternatives provide for the flows projected for the design year of 2030, 24 MGD average daily flow with a maximum wet weather flow of 60 MGD. Only equipment additions would be required in future plant expansions through 2030.

UV disinfection annual power costs are estimated to be essentially equal to the cost of chlorine gas and sulfur dioxide for dechlorination. Labor costs for operation and maintenance of the alternative systems are also estimated to be essentially equal. Outside of cost, the most significant issue is the avoidance of handling of a hazardous gas (and required scrubber system) with ton chlorine cylinders that would be required for that alternative. UV disinfection eliminates the dangers to the plant personnel and neighbors to the plant of the handling of those cylinders. The cost for UV disinfection above includes a couple of prefabricated 100 pounds per day chlorine units (150 lb cylinders) for use in the plant such as for algae control at the final clarifier effluent weirs.

Based on cost and safety issues, the selection of UV disinfection was recommended for the TBWWTP.

H. Direct Impacts to Floodplain

The main facilities of the proposed TBWWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The alternative that has been chosen is the construction of a force main and gravity line to transport flow from the existing Stone Dam Creek WWTP to the proposed TBWWTP.

The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. An alternative alignment that would completely avoid the 100-year floodplain is not available. In order to transport wastewater from the existing Stone Dam Creek WWTP to the proposed TBWWTP, the alignment would inevitably have to cross a segment of the 100-year floodplain. The TBWWTP site is located within Zone X of the FEMA Flood map for Conway, Arkansas. Zone X is defined as areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood. The Faulkner County Levee is located to the west of the TBWWTP site which allows it to be classified as Zone X instead of Zone AE.

An alternative alignment that would minimize the construction within the 100-year floodplain was not considered a feasible alternative due to the topography of the land between the treatment plants. The alternative alignment would require pumping over Donnell Ridge. This would necessitate additional pumping and force main which would in turn increase capital and operating costs. Another advantage of the preferred alignment is that it provides immediate gravity sewer service to an area of Conway that is under heavy development pressure. The area can be served by this gravity line without requiring a proliferation of pump stations to serve individual developments in the area.
Adherence with the applicable federal, state, and local regulations shall be followed to minimize potential impact to the floodplain during construction. Areas of the project where dredging, tunneling, and trenching will take place within the floodplain shall be restored to existing conditions such that existing water courses are not impeded and natural and beneficial values served by the floodplain are preserved.

4. PROJECT DESCRIPTION

A. Site Description

Appendix E contains a map showing the TBWWTP site, the outfall location, and collection system route. The location of the TBWWTP is an 80 acre site on the west outskirts of the City of Conway, near the Arkansas River. This location minimizes outfall pipe length for discharging treated flow to the Arkansas River. The flow will be transferred to the new TBWWTP through a series of gravity mains, pump stations, and forcemains.

B. ANRC Project Number

This project is identified by the ANRC's RLF program by Agreement No. 00747-CGO-L, and Project No.WRD-003-694.

C. Proposed Treatment Processes

The initial design of the facilities proposed the TBWWTP and the collection system associated with delivering flow to the plant, included the preparation a design memorandum to confirm the project criteria and goals. It was recommended that Phase I of improvements to the Conway Corporation Sewerage System keep the existing Tucker Creek WWTP in service, decommission the Stone Dam Creek WWTP, and construct a new 8 MGD (27 MGD peak flow) WWTP to serve the City of Conway until approximately the design year 2014. If sufficient funding can be arranged, Conway Corporation desires to build facilities in Phase I which will provide sufficient treatment capacity to meet needs past the year 2014.

As such, Conway Corporation has directed that plans and specifications be prepared for the facilities necessary to provide capacity of 16 MGD (50 MGD peak flow) at the TBWWTP, The plans and specifications are to make provisions that the facilities necessary to provide capacity above 8 MGD be defined as "deductive" alternatives, meaning that the decision to build an 8 or 16 MGD plant will be decided after receipt of construction bids on the project. The TBWWTP at 16 MGD plus the Tucker Creek WWTP at 6.4 MGD would provide the necessary treatment capacity projected to approximately the year 2028. As funding alternatives are further developed, Conway Corporation will make the final decision as to the Phase I treatment capacity which will be constructed. The yard piping of the plant site will be sufficient to treat 16 MGD and will be paralleled when the plant is expanded to 24 MGD. The plant processes will be designed so as to provide ease for construction and expansion. The plant site and layout will make provisions for an ultimate capacity of 32 MGD.

The TBWWTP process train will consist of headworks flow measurement, screening, and grit removal; primary clarifiers; primary sludge pump station; six aeration basins; secondary clarifiers; return and waste activated sludge pump stations; ultraviolet light disinfection; effluent flow measurement; and, a high water pump station. Other facilities include an administration/laboratory/maintenance building; plant site wastewater pump station; and, odor control facilities for the headworks and sludge management facilities.

Mechanically Cleaned Bar Screens

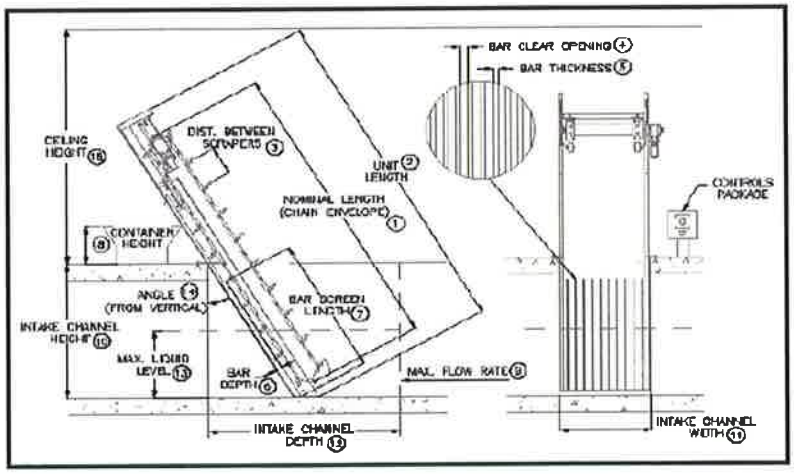
Wastewater flows into the plant will be received in a rectangular box at the influent end of the screenings facility. A three (3) channel screen chamber will be provided in the initial plant construction. The flow will be screened through a mechanically cleaned screen installed in one of the channels designed for a flowrate of 30 MGD maximum wet weather flow, the maximum flow expected until such time as the plant must be expanded. Initially, one of the other channels will be equipped with a manually cleaned course screen with 2-inch clear bar spacing for use during such time as the mechanically cleaned screen may be down for service. The third channel will be in place for the installation of a second screen mechanism upon the expansion of the plant. In the instance the Tupelo Plant is constructed to 16 MGD, the single mechanical screen will provide sufficient capacity (30 MGD peak) well past the point where average daily flows into the plant exceed 8 MGD. Therefore, it is recommended that initial design include only the single mechanical screen. The structure for the other screen will also initially be constructed. Thus at the time additional screening is required a new mechanism can be purchased and installed. Stop gates will be provided in each channel so that flow can be directed or stopped to any channel. The coarse screen will remain in service in future expansions of the plant to serve as a bypass of the screen mechanism(s).

The recommendation for screening is for installation of one (1) mechanically cleaned, ¼-inch clear bar opening, Duperon FlexRake® or approved equal, full-penetration, fine screen. The screen channels will be 5 feet wide by 8 feet deep with a water depth of 7 feet at peak flow. The channels will provide 12 inches of free board at the maximum peak capacity of 30 MGD. The screens will be placed on a 30-degree angle and are 19-feet in length. These screens require a minimum of 12 inches of liquid level in the channels at all times and a minimum of a 3-foot straight run before and after the screen. The channel design is such that approach velocities to the screen are no greater than 3.0 feet per second (fps) to prevent forcing material through the openings. The rake mechanism rakes the solids from the bar screen out of the channel to a belt conveyor which discharges the screenings into a holding bin. When the second screen machine is added to the plant, the screenings capacity will be 60 MGD which is the maximum wet weather flow predicted for the design year of 2030. In order to minimize any down time during operation of the plant, which will have only the one screen mechanism, the contract documents will require the screen equipment to be furnished with a complete set of recommended spare parts for storage and ready availability at the plant site.

It should be noted that during the operation of the TBWWTP, whether constructed to 8 MGD or 16 MGD, the Tucker Creek WWTP will also remain in service. During any operational difficulties at the TBWWTP, flows may be diverted to Tucker Creek for short periods while Tupelo equipment is repaired and placed back in service. Such requirements for furnishing of at least one set of recommended spare parts will be included in the TBWWTP contract documents for any singular piece of process equipment (as well as any other equipment whose operation is critical to plant performance) to ensure that any down time is minimized.

The Duperon screen or approved equal has a standard one year warranty with a 5-year extended warranty on all rotating parts (including drive head, gear motor, and FlexLink™ system or approved equal for all wastewater applications). The screening structure will be built to accommodate the addition of another screen as plant capacity is increased.

Figure 4.1 Bar Screen



Grit Removal

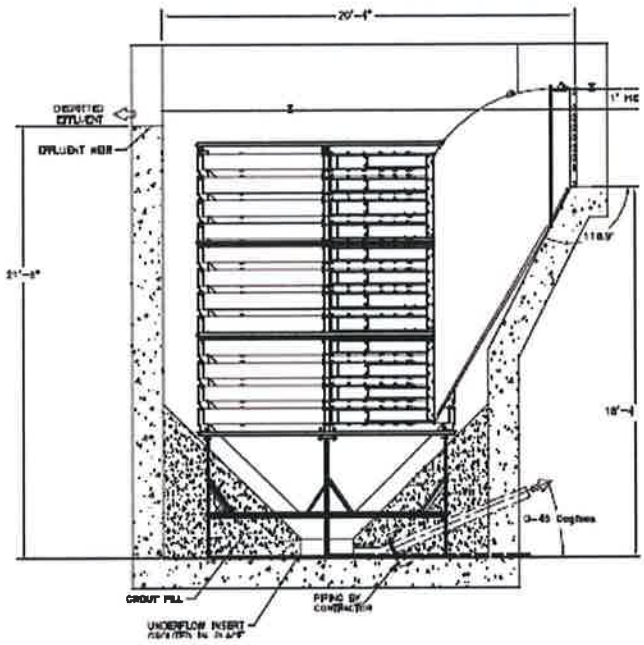
Following screening, the wastewater flows to a vortex type grit chamber designed to separate the grit from the screened wastewater. The grit removed in the vortex unit is pumped to a grit classifier to remove organics from the inert grit and to dewater the grit.

Based on the flow demand calculations, the initial plant design will consist of one Eutek® grit system or approved equal. As with the screen equipment discussed above, a single grit unit will have capacity to degrit a total peak flow of 30 MGD. A second grit unit should not be required until well past the point where average flows into the plant exceed 8 MGD. The grit system or approved equal consists of a settleable solids concentrator, one grit washing unit, one grit dewatering unit, and one control panel. The settleable solids concentrator is a non-mechanical stacked tray vortex grit removal system. Flow is introduced tangentially to establish a gentle, vortex flow through the headcell. The settleable solids concentrator is teamed with the grit washing unit and a dewatering unit. The Slurrycup™ or approved equal should be a centrifugal grit washer/classifier where separation and classification take place inside of the unit.

The grit system is designed to remove 95% of the grit 110 microns (specific gravity 2.6) or larger in size at a design peak flow of 30.0 MGD. At the design flow of 8.0 MGD, the system will remove 95% of all grit 75 microns (specific gravity 2.6) and larger in size. The dewatered grit will contain no more than 20%, on a weighted average, of unattached organic material.

The Headcell™ settleable solids concentrator unit or approved equal is a stack of twelve nested trays with a total of 1,356 ft^3 of total settling surface. The trays are 12 feet in diameter and fabricated from UV stabilized Low Density Polyethylene (LDPE). The unit has a total of 1 foot of headloss at a hydraulic capacity of 30 MGD. The settleable solids concentrator requires a continuous 20 gpm flow at 50 psig for the "fluidizing" function.

Figure 4.2 Grit Remover

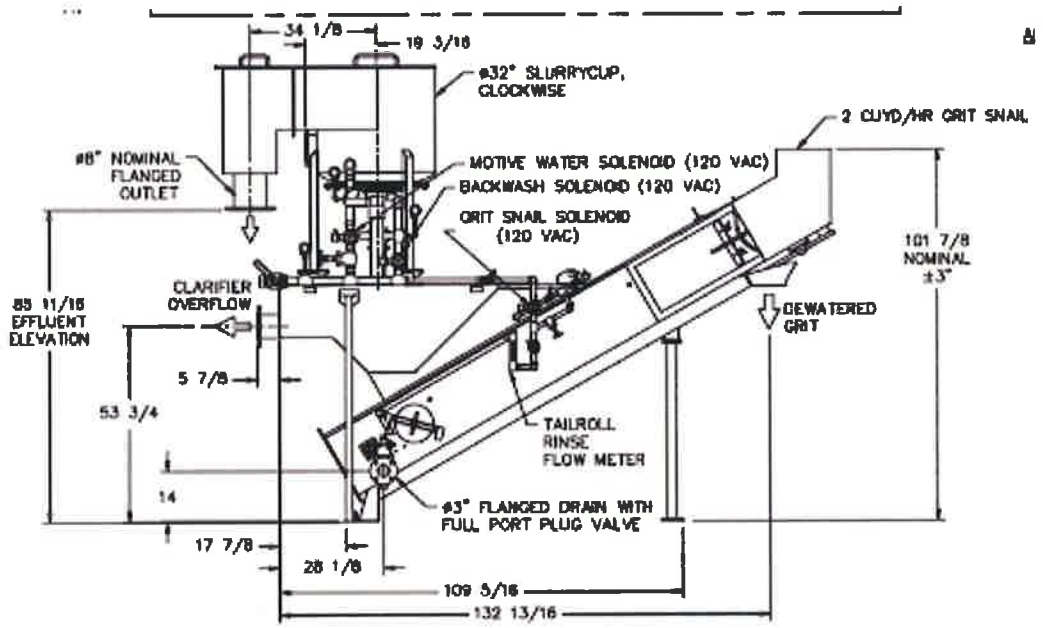


The Slurrycup™ or approved equal is a 32-inch diameter, 304 stainless steel all hydraulic solids classifier. The unit has a 15-foot headloss at a 300 gpm design flow. One unit will achieve full removal efficiency at flows from 280 to 450 gpm. The unit is self-standing. The grit washing unit requires a continuous flow from the settleable solids concentrator underflow of other source of 30 gpm at 50 psig. The grit washer requires an additional intermittent 47 gpm at 50 psig flow for fluidizing and backwashing.

The Grit Snail™ or approved equal is a 2.0 cy/hour stainless steel continuous dewatering unit. The unit is equipped with a 12-inch wide belt, a 60-inch square clarifier, and a 1/3 Hp inverter duty motor. The dewatering unit requires a continuous 10 gpm at 50 psig flow for the spray rinse system.

A total flow of 107 gpm at 50 psig for 1 to 2 minutes every 2 to 4 hours is the water demand for the grit system unit. Due to the pressure requirements of this system, the water supply will have to be boosted in pressure.

Figure 4.3 Dewatering Unit



The grit washing, dewatering, and dumpster system will be installed such that the odors from this process will be contained for removal to the odor control system. Air captured from this process will be discharged to the odor control system described below. Impervious, non-slip, working surfaces with adequate drainage will be provided for the grit handling/headworks area. Grit transporting facilities will be provided with protection against freezing and loss of material.

As with the screen equipment discussed above, in order to minimize any down time during operation of the TBWWTP, which will have only one degritting unit, the contract documents will require the grit washing and handling equipment to be furnished with a complete set of recommended spare parts for storage and ready availability at the plant site. The grit removal vortex unit itself has no moving parts, so no spare parts are necessary.

Odor Control

Odor control facilities proposed for the TBWWTP plant include targeting the most prevalent sources of odor as well as odor treatment with a biofilter or an adsorber/chemical wet scrubber combination. The areas targeted for odor control include the headworks and sludge processing facilities. As proposed, odorous air will be captured at the source in these facilities, to minimize the quantity of air that must be treated, and conveyed to the biofilter via dedicated duct work, piping, and blower fan.
The proposed biofilter is an in-ground filter with soil media. The overall intent is to reduce odor from the TBWWTP, while limiting the operation and maintenance requirements of an odor treatment process.

A chemical wet scrubber system refers to the use of interacting air stream with odorous or undesirable compounds with a liquid solution so that the odorous or undesirable compounds are adsorbed into the liquid phase.

Targeted Odor Sources

For this project, the proposed facilities targeted for odorous air containment and collection are:

- Headworks: Screen Channels – the influent screens, including washer and compactor, will be covered or enclosed. In addition, the screen channels will be covered with checkered stainless steel plate. Air will be pulled from the screening equipment and channels and treated.

- Headworks: Grit Dumpster – Captured grit from the grit removal process will be placed in dumpsters for final removal and disposal. The dumpsters will be housed to contain odor. Air will be pulled from the grit dumpster room and treated.

- Sludge Digesters: The Anaerobic Digesters will be self-contained units and capture potentially noxious gases generated during the sludge digestion process. Methane gas produced from these units, in excess of the volume required for boiler fuel to maintain digester temperature, will be flared off using a waste gas burner(s).

The following design criteria are proposed for the odor ventilation systems and will be further reviewed and refined during design:

- Above grade duct work is proposed as Fiberglass Reinforced Plastic (FRP) whereas below grade ductwork will be plastic corrugated pipe or High Density Polyethylene (HDPE) pipe.

- The odor ventilation blower will be FRP

- For particularly odorous areas that are enclosed and will be occupied, such as rooms with open BFP's or truck loading bays for loading sludge cake, ventilation will provide 12 to 20 air changes per hour (ACH). As previously mentioned, hoods will be provided over the BFP's so that this air change will be provided directly over the treatment process (in lieu of the entire building).

- For covered basins that are not occupied, the ventilation system will provide 6 to 12 ACH.

- Sweep velocities along channels being ventilated will target at least 50 feet per minute; with 100 feet per minute as more desirable.

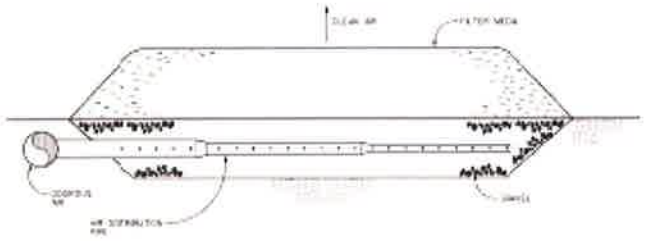
- Capture velocities on makeup air openings (including cracks) will target at least 200 feet per minute.

- For tightly closed conveyor systems (e.g., screen conveyors), the ventilation system will provide 10 cfm per foot of conveyor.

Biofilter

In recent years, biofiltration has become a popular choice for treating odorous airstreams. Biofiltration is well established in Europe, Asia, and New Zealand and is widely accepted as an effective odor control technology at municipal wastewater treatment plants and in industrial applications in the United States. More than 100 biofiltration odor control systems are in use in the United States, and more than 500 systems exist in Europe, Japan, Australia, and New Zealand.

Figure 4.4 Biofilter



Biofiltration is the use of microorganisms growing in a solid media bed to remove and oxidize compounds in a foul airstream. A typical biofilter consists of a media bed containing contaminant degrading microorganisms; a media support structure; a foul air distribution system; and some method of controlling the biofilter moisture content. Various biofilter media choices are available, including soil, bark, wood chips, compost, rise hulls, peat, synthetic materials, and various combinations of each of these. Based on discussion with the biofilter manufactures, an in-ground; open vessel with soil media is proposed to limit operation and control requirements; provide ease of construction, and limit capital cost as well as O&M costs of the system. The proposed system is cost competitive with other technologies such as wet scrubbers, carbon adsorption, or thermal treatment. In addition to capital cost competiveness, the biofilter does not require chemicals for treatment (as required for wet scrubbers); minimizes energy consumption (especially as compared to thermal treatment), and with a 20-year media life-span guarantee, essentially negates media change out (as required for carbon adsorption). These considered, the life-cycle cost of the biofilter is attractive when compared to other technologies.

The primary disadvantage of biofilters is that the lower cost open-vessel systems can be land-intensive when compared to other technologies. Also, biofiltration is a biological process requiring proper monitoring, operation, and control. Highly offensive and intense hydrogen sulfide odors often are replaced with low level residual musty or earthy odors characteristic of organic based biofilters. Normally these residual earthy odors are not an issue or considered foul, but can occur.

Performance Expectations

Biofilters have successfully removed a wide range of inorganic and organic compounds from gas streams. Easily biodegradable odorous compounds such as hydrogen sulfide can be removed to a level of 99% or better with biofilters. Ammonia, amines and other nitrogen-based compounds can also be effectively removed. Removal efficiencies for other reduced sulfur organic species have varied significantly depending on the compound of interest. Nevertheless, biofilters can be designed unique to the individual systems based on numerous designs and operating criteria, such as media type, temperature, pH, superficial velocity, and moisture content.

Operation and Design Criteria

Moisture control is one of the most important tools in the maintenance of biofilter media. Media that is too dry will not support a diverse and robust microbial community. Media that is too wet can become too dense and too compact, resulting in reduced porosity and high back-pressures. High back-pressure results in reduced airflow. If the airflow is not humidified to near 100% relative humidity, airflow through the biofilter will rapidly strip moisture from the resident media. This phenomenon can occur rapidly at even modest airflow rates. The net effect will be negative impacts to the microorganisms and reduced odor removal. The effectiveness of the biofilter depends entirely on the health and effectiveness of the biofilm at capturing and decomposing the pollutants and odors.

As part of the biofilter system proposed for this project, a preconditioning (pre-humidification) spray nozzle is included for the inlet air at the biofilter. Additionally, the system includes a surface irrigation system (very similar to a residential irrigation system). Water supply for the biofilter will be from the plant process make-up water pump station.

Table 4.1 Summary of Preliminary Design Criteria for Biofilter

Criteria	Value
Flow Rate	20,000 cfm
Filter Medium	Activated Soil
Biofilter Size	75 ft x 100 ft
Soil Media Depth	4 feet
Empty Bed Residence Time	90 seconds
Backpressure	< 8 inches water gauge
Removal Efficiency	Hydrogen Sulfide: 99% removal with a 150 ppm inlet concentration

Adsorber/Chemical Wet Scrubbers

In a chemical wet scrubber, the odorous or undesirable compounds are adsorbed into the liquid phase. The liquid solution usually contains chemicals that help improve the dissolution of these compounds into the liquid phase or chemicals that neutralize them. Fresh chemicals are added as they become depleted through the neutralization process. The addition is monitored by probes and chemical feed systems. The liquid solution is re-circulated until it requires purging and fresh solution is added as make-up water. Air is usually blown upward across a bed of plastic media where there is countercurrent flow of liquid scrubber solution being applied. The plastic media helps the transfer rate of the compounds into the liquid phase.

The most common approach for hydrogen sulfide removal with chemical wet scrubbers is by using a single or multi-stage tower. In a single stage operation, odorous air is blown upward while a liquid solution containing sodium hydroxide and sodium hypochlorite is being applied.

In multi-stage systems, the first stage usually only uses sodium hydroxide to neutralize, and the second stage uses both sodium hydroxide and sodium hypochlorite.

Table 4.2 Comparison of Odor Control Technology

BIOFILTRATION		WET SCRUBBING	
Advantages	**Disadvantages**	**Advantages**	**Disadvantages**
Low Op Cost	Large footprint	Can handle high flow rates and variable loads	High Op Cost
Low Capital Cost	Medium deterioration will occur	Low Capital Cost	Complex Chemical Feed System
Effective removal	Less suitable for high concentrations	Effective removal	Does not remove all VOCs
Low Pressure drop	Moisture and pH difficult to control	Can operate with moist gas stream	Water softening often required
No additional waste stream		No medium disposal required	Nozzle maintenance often required

A decision on the type of odor controlled desired will be determined during final design, at which time further analysis will be accomplished.

Flow Meter

Flow from the degritting unit will go through a Parshall Flume for metering of the plant influent flows. The flume will be constructed by use of a fiberglass flume with a throat of 8 feet. The fiberglass flume will be encased in concrete for a permanent installation. The throat width to be furnished will allow accurate flow measurement over a range of flows of 2 MGD at 0.25 feet differential head to 60 MGD at 1.95 feet of differential head. The meter will provide local flow indication, and will totalize/indicate/record flows in the Supervisory Control and Data Acquisition (SCADA) system in the control room of the Administration/Lab/Maintenance Building.

Primary Clarifiers

One 8 MGD center feed spiral rake primary clarifier is planned for the TBWWTP. A 16 MGD TBWWTP will require two (2) primary clarifiers. Each clarifier is 115 feet diameter by 12 feet side water depth. The primary clarifiers will be specified equal to Envirex.

Design criteria for the primary clarifier are as follows:

Surface Loading at Peak Hour Flow (PHF)	1,266 gpd/sf
Surface Loading at Average Day Flow (ADF)	770 gpd/sf
Hydraulic Detention Time at ADF	2.8 hours
Weir Loading at PHF	37,000 gpd/lf*

Design BOD Removal	30%
Design TSS Removal	60%
Design Solids Underflow Concentration	4%

*Finger weirs will be provided to reduce weir loading to below 30,000 gpd/lf. Spare parts will be provided to include one complete gear drive mechanism and motor.

Primary Sludge Pump Station

A sludge pump station with one positive displacement piston type sludge pump (plus an uninstalled spare) for pumping sludge underflow from the first primary clarifier to the sludge processing and disposal facilities. The station will be approximately the same depth as the primary clarifier in order to utilize the full depth of the clarifier as positive suction pressure to the sludge pump. The station will have space for a second pump for installation when the second primary clarifier is added to the plant. If two (2) clarifiers are constructed for 16 MGD, a second pump will be installed in the station to pump sludge from the second Primary Clarifier. An uninstalled spare pump will still be provided to provide stand-by capability. A second pump station is planned for the third and fourth clarifiers in order to minimize the suction line length to the pumps. The sludge pump(s) will discharge through a magnetic flow meter(s) to the gravity sludge thickener. The pump(s) will be equipped for manual on/off and timer controlled operation. At 8.0 MGD, the expected sludge quantity is 38,000 gallons per day at 4% solids. The pump will be constant speed with a capacity at maximum stroke of approximately 160 gpm to allow transfer of the solids to the thickener in as little as 4 hours, if desired. The primary sludge pumps will be specified equal to Komline.

RAS Mixing/Flow Splitter

Primary clarifier effluent will be piped to a mixing chamber/flow split structure. In the center portion of this structure the return activated sludge from the final clarifiers will be mixed with the primary effluent. Mixing will be required to insure the mixed liquor delivered to each aeration basin is uniform and homogeneous. Mixing will be provided using a submersible mixer unit(s). Air will also be provided discharging through coarse bubble diffusers to insure aerobic conditions are maintained in the mixing chamber. Air supply to the mixing chamber will come from a line tapped off the aeration basins air header from the Blower complex. The submersible mixer will be specified equal to Flygt submersible mixers, and the coarse bubble diffusers will be specified equal to Sanitaire diffusers.

Aeration Basins/Aeration Diffusers

The aeration basin complex is designed for ultimate build-out of 12 aeration basins for a 32 MGD WWTP – the projected 2030 design flow is projected to be 24 MGD. At an average day design flowrate of 8 MGD, the TBWWTP will include three (3) aeration basins. A 16 MGD TBWWTP will require six (6) aeration basins.

Each aeration basin will be 160 feet long, 50 feet wide, and have 15 feet side water depth. An anoxic zone will be provided at the influent of each basin to account for potential de-nitrification. The design criteria selected for the aeration basins include:

Hydraulic Retention Time (HRT) at ADF	8.08 hours
HRT at PDF	4.84 hours
Mixed Liquor Suspended Solids (MLSS)	3000 mg/l
MLVSS (at 70% volatile)	2100 mg/l
Design Sludge Age	7 days
Organic Loading per pound MSVSS	0.25 # BOD/#MLVSS
Organic Loading per 1000 cubic feet of aeration basin volume	32.4 # BOD/1000 cubic feet

Air diffusers in the aeration basins will be fine bubble diffusers with EPDM rubber membranes. The contract documents will allow either plate or tube type diffusers equal to diffusers as manufactured by Siemens, Sanitaire, and EDI. The number of diffusers will be based on manufacturer's recommendations to meet the oxygen transfer requirements as will be set out in the contract documents.

Blower Building – Blowers

A blower building will be constructed to house the centrifugal blowers providing air to the aeration basins and other miscellaneous locations around the plant. Criteria for sizing of the blowers for the aeration basins include:

Oxygen supplied per pound of BOD removed	1.5 lb/lb
Oxygen supplied per pound of Ammonia Oxidized	4.6 lb/lb

Subject to refinement during the detailed design of the project, preliminary design indicates three (3) blowers will be provided for 8 MGD and either four (4) or five (5) blowers at 16 MGD (one unit will provide stand-by service). Each blower will provide an air flow of approximately 6,000 standard cubic feet per minute at approximately 7 psi, and will be driven by a 350 Hp constant speed motor. Motors are anticipated to be started with "soft-start" capability. Blowers will be multi-stage centrifugal blowers equal to those manufactured by Hoffman or Lamson.

Air piping for the blowers and discharge header to the exterior of the blower building will be ductile iron with lining compatible with high temperature air. Stainless steel bellows and high temperature gaskets will be used. Air lines from the exterior of the blower building to the water line of the aeration basins will be Schedule 10 stainless steel. Piping below the water line will be high temperature resistant PVC.

Secondary (Final) Clarifiers

One 8 MGD peripheral feed/peripheral effluent final clarifier is planned for the TBWWTP. A second unit of like dimensions will be required for a 16 MGD WWTP. The clarifier contemplated in the master planning effort was sized at 150 feet diameter by

15 feet side water depth. At that time, the plant effluent solids limit was expected to be 30 mg/l total suspended solids (TSS). ADEQ has now confirmed that the effluent criteria will probably be 30 mg/l TSS. After review of the necessary design loadings, it was determined that the solids loading rate for a clarifier 150 feet in diameter was marginal considering the anticipated discharge solids limits. Therefore, the final clarifier recommended is 160 feet in diameter by 15 feet side water depth. The clarifier will be equipped with a suction arm on one side of the turntable, and a conventional rake mechanism on the other side. Normal withdrawal of activated solids will be through the suction arm providing for complete floor coverage with each revolution of the mechanism. The clarifiers will be specified equal to Envirex.

Design criteria for the final clarifier are as follows:

Surface Loading at Peak Hour Flow (PHF)	663 gpd/sf
Surface Loading at Average Day Flow (ADF)	398 gpd/sf
Hydraulic Detention Time at ADF	7.5 hours
Weir Loading at PHF	26,530 gpd/lf
Solids Loading @ PHF + Max Recycle	26.6 pounds/sf

Spare parts to be provided will include one complete gear drive mechanism and motor.

Return/Waste Activated Sludge Pump Station

The return/waste activated sludge pump station will be equipped with a dry well submersible centrifugal sludge pump (plus an uninstalled spare) for pumping activated sludge underflow from the final clarifier to the aeration basin RAS/Primary Effluent Mixing Chamber. The return sludge pump will be directly connected to the suction arm of the final clarifier. The station will also contain a dry well submersible centrifugal sludge pump (plus an uninstalled spare) taking suction from the return sludge suction header and pumping waste activated sludge to the sludge thickener. The station will be approximately the same depth as the final clarifiers in order to utilize the full depth of the clarifier as positive suction pressure to the sludge pump. The station will have space for a second return and a second waste pump for installation when the second final clarifier is added to the TBWWTP which will be installed if the TBWWTP is constructed to 16 MGD capacity. A second pump station is planned for the third and fourth clarifiers in order to minimize the suction line length to the pumps. The sludge pumps will discharge through a magnetic flow meter to their respective points of discharge. The pumps will be equipped with variable frequency drives. The return sludge pump will have a capacity of approximately 5,600 gpm (100% of 8 MGD ADF recycle capability). The waste activated sludge pump will have a maximum capacity of 300 gpm to allow wasting of the solids to the thickener in as little as 8 hours, if desired (pump could be slowed and throttled to approximately 100 gpm for continuous wasting if desired). The need for a pump glycol cooling system will be examined during the design. The return and waste sludge pumps will be specified equal to Flygt N-Series pumps.

Plant Effluent Disinfection

The Master Plan contemplated disinfection of the TBWWTP effluent would be accomplished by chlorination followed by dechlorination to meet the anticipated discharge permit total residual chlorine limits. Conway Corporation requested that ultraviolet disinfection equipment be examined and compared to the cost of

chlorination/dechlorination. The estimated opinion of probable initial costs of these alternatives is listed below. Equipment costs for these alternatives were based on Capital Controls brand chlorination/dechlorination equipment and Trojan channel type brand ultraviolet equipment. These opinions of probable initial costs include equipment costs as well as structure costs.

Chlorination/Dechlorination	$2,036,000
Channel Type Ultraviolet Disinfection	$1,500,000

The structures for both disinfection alternatives provide for the flows projected for the design year of 2030, 24 MGD average daily flow with a maximum wet weather flow of 60 MGD. Only equipment additions would be required in future plant expansions through 2030.

The UV disinfection structure consists of two (2) channels 30 feet long, 6 feet wide, and with a water depth of 5 feet 2 inches. The channels will provide redundant capacity in the plant as well as future expansions by the addition of light modules to the channels. A 16 MGD plant will require additional light modules in each channel. The equipment quoted also includes a control center to control the light intensity based on flow measured at the plant effluent Parshall Flume discussed below, weirs, automatic chemical/mechanical cleaning, UV module lifting device, and maintenance rack.

UV disinfection annual power costs are estimated to be essentially equal to the cost of chlorine gas and sulfur dioxide for dechlorination. Labor costs for operation and maintenance of the alternative systems are also estimated to be essentially equal. Outside of cost, the most significant issue is the avoidance of handling and storage of a hazardous gas (and required scrubber system) with ton chlorine cylinders that would be required for that alternative. UV disinfection eliminates the dangers to the plant personnel and neighbors to the plant of the handling of those cylinders. The cost for UV disinfection above includes a couple of prefabricated 100 pounds per day chlorine units (150 lb cylinders) for use in the plant such as for algae control at the final clarifier effluent weirs. Based on cost and safety issues, the selection of UV disinfection is recommended for the TBWWTP.

Plant Effluent Parshall Flume

Flow from the disinfection unit will go through a Parshall Flume for metering of the plant effluent flows. The fiberglass flume will be encased in concrete for a permanent installation. The throat width to be furnished will allow accurate flow measurement over a range of flows of 2 MGD at 0.25 feet differential head to 60 MGD at 1.95 feet of differential head. The meter will provide the plant flow signal for the pacing of the disinfection equipment and will have local flow indication and totalizer/indicator/recording of effluent flows in the SCADA system in the control room of the Administration/Lab/Maintenance Building.

High Water Pump Station

An effluent pump station will be required to lift the wastewater to discharge to the Arkansas River whenever the river is above approximately elevation 266 feet MSL. The effluent pump station lift will be about 30 feet and will be accomplished by a single lift

screw pump system. The pump station is designed to handle the design peak flow of 30 MGD, which should be sufficient for either an 8 MGD or 16 MGD WWTP. Space has been provided for duplication of the pump station for expansion to the future buildout peak flow of 60 MGD.

Lakeside® screw pumps or approved equal consist of a tube with spiral flights set in an inclined trough. The entire assembly consists of the spiral screw, an upper bearing, a lower bearing, and a drive arrangement.

Each Lakeside® open screw pump or approved equal would be rated at 15 MGD with a 30 foot lift. Each screw pump would be 72-inch diameter and would be driven at 35 rpm through a base mount parallel shaft reducer and a 150 Hp motor.

The screw pumps will be set on a 38-degree inclination. The screw pumps will be self-lubricating on the lower bearing. The screw pumps have a standard 1-year warranty.

Arkansas River Outfall

A 72-inch diameter line is needed to carry the treated effluent from the plant to its discharge point in the Arkansas River. This line is approximately 3,900 feet in length. It will run west from the High Water Pump Station (HWPS) to the plant-side toe of the levee, thence north along the levee toe to a mid-point of the levee, thence turn to the Arkansas River where the outlet will be submerged.

The following pipe products are feasible alternatives because they are available in the necessary 72-inch diameter (ductile iron and Vylon are not) and they are able to withstand the bury depths with the proper wall thickness or pipe stiffness. Full envelope granular bedding would be needed for each pipe option.

Concrete Pipe: Since the outfall carries treated effluent where hydrogen sulfide is not a problem, concrete pipe meeting the ASTM C76 standard is a feasible option. It is available from an area manufacturer in 72-inch diameter; however, the joint lengths are relatively short. The standard wall thickness should be adequate.

Hobas Pipe: Centrifugally Cast Fiberglass Reinforced Polymer Mortar (CCFRPM) pipe is also a viable option. Since the depth of bury of the outfall line is fairly shallow, the standard pipe stiffness required will allow a relatively thin-walled pipe making this type pipe cost competitive.

Corrugated Metal Pipe: A product such as Contech Smooth-Cor Polymer Coated smooth interior and outside shell meeting ASTM A762 and A760 standards is an option. It is lighter than the other pipe options and is available in several standard lengths. It is likely that 20-foot joints would be appropriate for this project.

A 72-inch pipe manufactured of reinforced concrete, reinforced fiberglass, or corrugated metal will provide excellent service over the long term for this project. Therefore it is recommended that pipe manufactured of those materials be permitted by the project specifications for the plant outfall line, and allow the Contractors to select based on the market place at the time of bidding.

Gravity Sludge Thickener

One center feed gravity sludge thickener will be provided for an 8 MGD TBWWTP. Two (2) gravity thickener units will be required for a 16 MGD WWTP. The thickener will be a conventional rake mechanism with pickets to stir and thicken a combination of primary and waste activated solids. The thickener will be 60 feet in diameter by 12 feet side water depth. Withdrawal of solids will be from a sludge hopper constructed adjacent to the center column of the thickener. The sludge thickener will be specified equal to Envirex.

Design criteria for the sludge thickener are as follows:

Surface Loading – Primary Solids	20 lbs/day/sf
Surface Loading – Secondary Solids	4 lbs/day/sf
Surface Loading (including Make-up Water)	600 gpd/sf*

*Make-up water provided to assist thickening and avoid septicity (see discussion below)
Spare parts to be provided for this unit will include one complete gear drive mechanism and motor.

Gravity Thickener Make-up Water

As suggested above, proper operation of the gravity sludge thickener will require the addition of make-up water to keep the thickener fresh. The make-up water will also assist in the thickening process. Use of plant effluent on a continuous basis for the make-up water would result in a significant recycle flow which would have to be returned to the plant processes for treatment. To avoid this recycle loading, the TBWWTP will be equipped with a "closed-loop" system to provide the make-up water to the thickener. At 8 MGD primary plus waste activated sludge flow computes to be approximately 180,000 gallons per day. The gross design loading of the thickener at 600 gallons per day per square foot requires 1,700,000 gallons per day total flow. Net make-up water required is 1,520,000 gallons per day – approximately 1,050 gpm.

A make-up water pump structure will be provided adjacent to the sludge thickener. This structure is sized to provide approximately 30 minutes of hydraulic retention time to the make-up water flow from three (3) thickeners required at the 2030 WWTP of 24 MGD. The structure will be 40 feet by 20 feet by 15 feet side water depth. The structure will be initially filled with water from the plant water system. It will be equipped with a coarse bubble aeration diffuser grid to aerate the make-up water with air supplied by a line off of the aeration basin blower system. The structure will also have an overflow line that will discharge approximately 130,000 gallons per day of water decanted off as the sludge solids are thickened back to the WWTP Recycle Pump Station. A submersible Flygt N-Series centrifugal pump (with an uninstalled spare) will be installed in the structure to provide 1,050 gpm make-up flow. A 16 MGD WWTP will require a second installed pump for a second Thickener. Space and discharge piping will be provided for installation of additional make-up water pumps as additional thickeners are added in future plant expansions.

Spare parts will include a third uninstalled pump as backup to the installed pumps.

Thickened Sludge Pump Station

The thickened sludge pump station will be constructed and the pumps will be installed at a level approximately equal to the bottom of the thickener in order to have positive suction head on the pumps. Three (3) pumps of the positive displacement plunger type will be installed (one uninstalled spare), each pump discharging to a belt press or centrifuge. The number of pumps installed will be increased to match the number of dewatering units if additional belt presses or centrifuges are installed at the plant, depending on the design flow. The pumps will be have variable speed drives and will discharge through magnetic flow meters. Controls will be in the belt press / centrifuge area so that the operators can control pumping rate from the dewatering operations. The thickened sludge pumps will be specified equal to Komline.

Anaerobic Sludge Digestion

Conway Corporation expressed the desire to produce Class A Biosolids from the proposed plant. Thus cost effective facilities to produce Class A Biosolids were determined to be gravity thickening, dewatering by centrifuge, heat drying, and energy recovery by incineration of the heat dried solids. However, as a result of the VE of the project, Conway Corporation accepted the VE Recommendation to eliminate the dewatering and Class A sludge processes and install Anaerobic Digestion facilities with ultimate disposal of Class B Biosolids in liquid form by land application. The anaerobic digestion facilities were sized on a preliminary basis in preparation of the Response to the VE Recommendation. Based on that preliminary analysis, the TBWWTP sludge processing facilities will consist of gravity thickening of combined primary plus waste activated sludge in two (2) thickeners each 60 feet in diameter by 12 feet side water depth, two (2) heated primary digesters, each 120 feet in diameter by 23.5 feet side water depth, and one (1) secondary digester 120 feet in diameter by 23.5 feet side water depth with gas holder cover. The secondary digester will function as a sludge storage facility (approximately 30 days storage) for holding digested solids during times that weather conditions will not permit land application of the biosolids. The sizing of the facilities may vary somewhat from these preliminary design figures during final design. Potential phasing of these facilities will also be considered during final design.

D. Influent and Effluent Quality

For a municipality to discharge treated wastewater to a surface water of the State (the Arkansas River for the Tupelo Bayou Project), an NPDES permit must first be obtained from the ADEQ, Water Division. NPDES permits regulate wastewater discharges by limiting the quantities of pollutants to be discharged and imposing monitoring requirements and other conditions. The limits and/or requirements in the permit help ensure compliance with Arkansas Water Quality Standards and Federal regulation.

There are two types of NPDES permits, individual NPDES permits and general NPDES permits. The TBWWTP will be regulated by an individual NPDES permit. An individual NPDES Permit is unique to each facility. The limits and requirements in an individual permit are based on the facility's operation, type and amount of discharge, and receiving stream, among other factors.

Before design began, the proposed preliminary limits of the individual NPDES permit were obtained from ADEQ. The following tentative effluent discharge limits for the

proposed TBWWTP to the Arkansas River in Faulkner County was based on the following assumptions:

- Based on current upstream water quality from monitoring station ARK0030
- Valid for the entire range of possible locations along the proposed site area
- Assume the Tucker Creek WWTP will be decommissioned when the flow at the new plant exceeds 16 MGD.

ADEQ initially expected that the discharge limits (in milligrams per liter (mg/l)) would be 30/30 ($CBOD_5$/TSS), ADEQ currently projects the following limits for the TBWWTP: 30 mg/L for BOD_5, 30 mg/L for TSS, and an instantaneous limit of 2.0 mg/L for D.O. The influent wastewater strengths used for design of the TBWWTP are 250 mg/l BOD_5, 250 mg/l TSS, and 25 mg/l NH3-N. The changes in the projected limits required some adjustment in the design and sizing of the TBWWTP facilities as compared to the limits expected at the time of the preparation of the Master Plan.

These proposed limits are preliminary and still require EPA approval. The stated limits are strictly for meeting the DO standard of the receiving stream. Other pollutants (i.e. metals, nutrients, etc.) could be added to the permit at a later time.

E. Eligible Units

The TBWWTP will have the following features:

The Plant process train will consist of headworks flow measurement, screening, and grit removal; primary clarifiers; primary sludge pump station; aeration basins; secondary clarifiers; return and waste activated sludge pump stations; ultraviolet light disinfection; effluent flow measurement; and, a high water pump station. Other facilities include an administration/laboratory/maintenance building; plant site wastewater pump station; and, odor control facilities for the headworks and sludge management facilities. Sludge will be processed by gravity thickening and anaerobic digestion with land application of liquid digested Class B Biosolids.

The initial minimum capacity will be 8 MGD, with facilities included in the construction plans and specifications as deductive alternatives to provide capacity of 16 MGD. The plant will be constructed to 16 MGD capacity possibly in Phase I (depending upon funding limitation) or by approximately 2014. . The yard piping of the plant site will be sufficient to treat 16 MGD and will be paralleled when the plant is expanded to 24 MGD. The plant processes will be designed so as to provide ease for construction and expansion. The plant site and layout will make provisions for an ultimate capacity of 32 MGD.

The location of the TBWWTP is an 80 acre site on the west outskirts of the City of Conway, near the Arkansas River. This location minimizes outfall pipe length for discharging treated wastewater to the Arkansas River. The flow will be transferred to the TBWWTP through a series of gravity mains, pump stations, and forcemains.
The delivery of wastewater now treated at the Stone Dam Creek WWTP was considered for diversion to the Tucker Creek WWTP and TBWWTP by the expansion of the German Lane Pump Station and paralleling of the force main from German Lane to the Tucker Creek WWTP. A splitter box would be constructed at Tucker Creek to split the flows into the two plants. A new pump station would be constructed at the Tucker Creek

WWTP to pump the portion of system flow desired through a new force main to the Tupelo Bayou WWTP.

These facilities are more particularly described as follows: A 36-inch diameter force main will run westerly from the Central Pump Station at the Stone Dam Creek WWTP to a point where the gravity sewer begins near the intersection of South Salem Road and Makenzie Drive. The 48-inch gravity line would substantially follow a tributary of Tupelo Bayou in the drainage basin south of Donnell Ridge Road and end at the Donnell Ridge Road Pump Station located near where Donnell Ridge Road crosses Tucker Creek. The Donnell Ridge Road Pump Station is also expected to be the terminal point of future gravity sewer lines not included in this project. A 36-inch force main approximately 10,400 feet long will be built from the Donnell Ridge Road Pump Station to the proposed TBWWTP as part of Phase I construction. The force main will parallel Donnell Ridge Road to Lollie Road then north on Lollie Road to the north side of the TBWWTP site. The 36-inch force main will transport flow peaks of approximately 30 MGD at reasonable velocity and head loss. The line will need to be paralleled with another 36-inch force main at some future phase of improvement in order to transport the projected 60 MGD maximum wet weather flow to the Plant. It is anticipated that gravity interceptors will extend from the Donnell Ridge Road Pump Station to the south (proposed Airport area), to the east and to the western portions (north of the TCWWTP site) of the service area.

The receiving stream for the proposed TBWWTP will be segment 3F of the Arkansas River Basin. The proposed plant will conform to the individual limits set forth in its NPDES permit issued by the ADEQ.

The total estimated cost for the engineering and construction of the proposed TBWWTP and collection system upgrades is $102,400,000.

5. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A. Primary Impacts

a.) Short-Term Impacts:

1) The proposed collection route should have minimal impact to current land forms. The collection route will cross three significant waterways: Tucker Creek, Stone Dam Creek, and an unnamed tributary of Tupelo Bayou. One pump station and the TBWWTP construction will change approximately 80 acres from agricultural land to developed property.

2) Sedimentation from construction runoff should be kept to a minimum with sound construction methods and implementation of BMP's. Limiting sediment disturbance during construction in waterways is achieved with the following BMP's listed in the Arkansas River Basin Plan: conservation of natural vegetation especially on slopes, stream side management zones, mulching, limited soil disturbance, erosion control pads, riprap, lined waterways, and concrete mats.

3) All areas of the project where dredging, tunneling, and trenching will take place shall be restored to existing conditions such that existing water courses are not impeded. When crossing streams the pipe should either be constructed above the waterway on piers or bored underneath when practicable.

4) See Part 2 above.

5) The appropriate BMP's shall be implemented to minimize erosion and sediment transport as a result of clearing. All construction of this project will be observed so that excess clearing is minimized. Should there be need for herbicides and/or defoliants during clearing, BMP's shall be implemented to minimize any runoff of these chemicals.

6) Final disposal for soil and vegetative spoil resulting from this project shall be in accordance with all local, state and federal regulations.

b.) Land Acquisition

1) Not Applicable.

2) The line work associated with this project should not have any effect on adjacent land values. The planning site for the treatment plant is located in a remote area surrounded primarily by agricultural fields with a gravel plant located directly to the south. A few residential homes are located to the north of the planning area. The proposed project also should not have any effect on the land value of adjacent agricultural land. Due to the remoteness of this area and the buffer distances from the plant to existing homes, it is also anticipated that property values of the homes in the proximity of the plant will not be affected as a result of this construction.

3) The current land use classification of the planning site is agricultural land use. The proposed land use classification change would be from agricultural land use to institutional land use.

c.) Regulatory Compliance

1) Once TBWWTP is operational and treating its designed capacity, Stone Dam Creek WWTP will be decommissioned. Conway Corporation has not finalized plans for the site after the WWTP is no longer operating. Since Stone Dam Creek and Tucker Creek will be fully operational until the TBWWTP is complete bypassing sewage during construction will not be necessary.

2) Meetings have taken place with USACOE personnel at the Little Rock District office regarding obtaining a 404 Nationwide Permit for the TBWWTP site and collection route. USACOE will review the wetland determination report and maps authored by Mr. Henson along with project information pertaining to wetland or stream disturbance.

3) The selected TBWWTP site is located in the southwest section of the planning area, which is also near the location of Conway's proposed airport. Two important regulations that affect this site is Advisory Circular 150/5200-33A; Hazardous Wildlife Attractants on or Near Airports, of the Federal Aviation Administration (FAA) and Act 1336 of 1997 of the State of Arkansas; To Limit the Power of a Municipality to Condemn Property Outside Its Corporate Limits for a Sewage Collection System or Sewage Treatment Plant.

The FAA Circular has a specific requirement concerning the location of a WWTP to the Air Operations Area of an airport. This requires a 10,000 foot distance from any airport runway used by turbojet aircraft to a wastewater treatment facility. Appendix J illustrates the relationship of this 10,000 foot radius requirement from the Air Operations Area of the planned airport to the proposed TBWWTP site. This drawing reflects the latitude and longitude of the north end of the airport runway and TBWWTP location to scale. As you can see, the 10,000 foot requirement overlaps the southern end of the WWTP property.

d.) Dust Control

BMP's will be implemented as necessary to minimize and control dust as a result of the construction of this project. Physical barriers, site traffic control, and water sprays will be used as necessary as part of the dust control plan for the construction of this project.

e.) Effects of Noise

The effects of noises due the construction of this project should minimally affect the area residents due to the remoteness of the planning areas. Permissible noise exposures (per Occupational and Safety Health Administration's (OSHA) regulation 29 CFR 1926.52) will be administered during the construction of this project to minimize the effects on area residents and wildlife from construction related noises.

f.) Effects of Blasting

It is anticipated that minimal blasting if any will be required for the construction of this project. Should the need for blasting be required for any aspect of this project, a blasting plan will be implemented to ensure compliance with OSHA standards.

g.) Minimizing Traffic Disruption

All pedestrian and vehicular traffic crossings will be performed to state and local regulations. The Arkansas Highway and Transportation Department (AHTD) and the City of Conway will be contacted on required actions needed to cross roadways. Federal, state, and local regulations and guidelines involving security and public safety will be implemented into all project phases. It is unlikely that night work will be performed during this project. See correspondence from AHTD regarding compliance issues with the proposed project in Appendix K.

h.) Long-Term Impacts

The proposed site for the TBWWTP is currently an open field with cover vegetation. The site is approximately 80 acres, with half being reserved for future plant expansion. The plant site will have minimal impact on the surrounding environment due to its location in a remote agricultural zone. Odor control facilities are planned for construction for the plant's odor prone components. The site should remain isolated from the highly developed parts of town since it is surrounded by the 100-year floodplain.

Scenic Views

The proposed structures associated with this project should minimally interfere with or obstruct the scenic views of this area. Due to the location of the project site and the trees and landscape between the site and adjacent homes, the views of residential homeowners of the area should not be affected.

The proposed site for the TBWWTP is currently an open field with cover vegetation. The site is approximately 80 acres, with half being reserved for future plant expansion. The plant site will have minimal impact on the surrounding environment due to its location in a remote agricultural zone. Odor control facilities are planned for construction for the plant's odor prone components. The site should remain isolated from the highly developed parts of town since it is surrounded by the 100-year floodplain.

Architectural Techniques

The Administration/Lab/Maintenance building is initially sized as a 10,000 square foot single story structure housing administrative office space, plant control center, wastewater laboratory, and shop space.

The Administration/Lab/Maintenance building is anticipated to be a pre-engineered building with the exterior consisting of split faced block rising about 40 inches above finished floor with windows and metal siding above. The eave height is anticipated to be around 12 feet except in the service bays of the shop portion of the building which will have eave heights of 20 feet. The main entrance will have its own architectural feature and will blend with the building.

All other buildings on the site are architecturally similar to the Administration/Lab/Maintenance building exterior.

Tanks that are either above ground or partially above ground are anticipated to have a textured style finish using Thoroseal or approved equal.

The area around the Administration/Lab/Maintenance building will be sodded at the completion of the project. The remainder of the plant site will be seeded. The landscaping of the new TBWWTP will have to meet the City of Conway Design Standard pattern book. The TBWWTP plans will be reviewed by the City of Conway Planning Department who will check that the design of the TBWWTP meets the design standards.

Some general, yet notable, requirements of the design standards for landscaping include:

- All areas not covered by structures, service yards, walkways, driveways, and parking spaces shall be landscaped.
- All Landscape Plans must be prepared by a person knowledgeable in the field.
- Landscaping shall be provided which is sufficient to provide soil stability and suitable drainage.
- The current property owner shall properly maintain all required landscaping.
- Native species should be used when possible, in order to minimize watering.
- Conway Corporation shall be consulted for all Landscape Plans which propose plantings within utility easements.
- Where possible and reasonable, existing mature, "significant" trees, rock outcroppings, and riparian corridors shall be preserved and incorporated into landscape plans.
- There should be a landscape strip around the base of all structures on the site.
- A minimum landscaped area of either 10 feet or 5% of the average lot depth, whichever is greater, shall be provided along all property lines abutting any street, exclusive of right-of-way. The maximum width for any project shall be 40 feet.
- A perimeter landscape strip at least 6 feet in width shall be provided along all property lines adjoining nonresidential areas. A perimeter landscape strip at least twenty feet in width shall be provided along all property lines adjoining any residential area.
- Trees shall be planted at the ratio of no less than one canopy tree for every 30 feet of property line abutting any street. An item to note during construction is that the design standards require all trees and shrubs to be planted during the months of March, April, May, September, October, and/or November.
- There shall be at least one canopy tree every 30 feet, one understory tree every 15 feet, or one shrub every 6 feet along all boundaries of the site which do not abut streets.
- Trees shall be planted within the paved parking area so that each parking space is no more than 60 feet from the nearest tree.

Many of these requirements are not compatible with a wastewater treatment facility. Assistance will be given to Conway Corporation in application for a

variance from those requirements mutually deemed inappropriate for the TBWWTP during design.

The new TBWWTP will be designed with a security fence around the entire plant site on the property line. There will be a main entrance gate with a manual locking device off of Lollie Road near the south end of the property for access to the parking lot and Administration/Lab/Maintenance building area. From this area, there will be another gate (with key pad entry) for treatment plant employees to access the plant process structures and the shop building. There will be one more manual locking gate at the north end of the property for access from Roberts Road.

According to the City of Conway Design Standards, where fences or walls are used they shall be no more than 4 feet in height. In keeping with the Risk Assessment requirements for this site, it is suggested that the appropriate fencing will be 6-foot chain link topped with three strands of barbed wire. Obviously this violates the Design Standards for development in the City of Conway. As suggested above, assistance will be given Conway Corporation in applying for a variance to use the appropriate fencing.

It was suggested that a mow strip be installed along the entire length of the proposed fence for ease of mowing up to the fence. The use of a mow strip and the associated cost will be examined during design.

The City of Conway Design Standards suggest generous vegetation around fences to "soften the appearance and to aid in the prevention of graffiti." Once again, this requirement does not seem consistent with the designated use. Plants on the fence line will add to maintenance time and costs. This will also be addressed during design.

The TBWWTP will have sidewalks between the unit processes and around the Administration/Lab/Maintenance building. Sidewalks shall be constructed as outlined by the Conway Subdivision Ordinance (O-00-03), and any amendments thereto.

City of Conway Design Standard pattern book requires all parking lots to be screened in order to ensure that no light trespass or glare is directed onto surrounding residential properties or rights-of-way. The following guidelines dictate screening requirements:

- Any screening measure shall be a minimum of 3 feet above the highest of the average final finish elevation of the adjacent street, the parking lots, and the ground floors of all structures on the site.

- Earth beams can be used for screening purposes.

- Where shrubs are used they shall be evergreen in nature, be at least 30 inches tall at the time of planting, and be spaced closely enough together so as to create a seamless row of hedging.

- Where fences or walls are used they shall be no more than 4 feet in height and be constructed from a durable material (i.e. brick or stone masonry, wood, iron, composite, etc.).

- Screening shall not be implemented in a manner which impairs the sight lines of drivers entering, leaving or maneuvering through the site.

In general, parking area surfacing according to the City of Conway Design Standards are to conform to the following:

- All parking areas shall be paved with a sealed surface pavement or concrete.

- Parking areas shall provide necessary drainage infrastructure and be graded.

- All parking areas and areas for internal circulation on the site shall be physically delineated by curbing.

According to the City of Conway Design Standards, all mechanical and utility equipment located on the wall, roof and/or on the ground shall be screened when visible from the public realm or residential areas. All roof-mounted utilities and mechanical equipment shall be screened on all sides by incorporating screening into the structure utilizing materials compatible with the supporting building. Mechanical equipment over 48 inches in height shall meet building setbacks.

The design standards recommend that all mechanical equipment shall be screened in a method sufficient enough to ensure that no adjacent properties are negatively affected by noise generated by the equipment. Transformers should be placed in a location, or screened, to maximize safety and minimize visual impacts. Other equipment, such as gas meters, electrical meters, cable boxes, junction boxes, and roof access ladders, shall be located within a designated utility area or screened from public view. Reduced pressure zone (RPZ) assemblies (backflow preventers) for landscape irrigation and domestic water shall not be located at visually prominent locations and shall be well-screened with shrubs, berming, or low screen walls.

All outdoor lighting fixtures will match the light fixtures used at the Water Treatment Plant. The City of Conway Design Standard has strict requirements for lighting. The standard requires all proposed exterior light sources including poles, standards, hangers, light fixtures, reflectors, shields, and lamp (including and their wattage, color, height, and lumen output) shall be submitted with the development plan for review and approval by the City of Conway Planning Department. This may cause conflict if the City Design Standard has changed after the Water Plant lighting was selected and installed. This issue will be reconciled during design. Further requirements of the design standards are:

- Reasonable amounts of lighting shall be provided at intersections, along walkways, at building entrances, between buildings, and in parking areas.

- The maximum height of any light source shall not exceed 25 feet. In large-scale developments, the maximum height of any fixture shall be 40 feet. Fixtures shall not exceed the height of adjacent structures.

- Unshielded wall packs and floodlights are not permitted.

- Commercial outdoor lighting shall be used for safe pedestrian passage and property identification only during active business hours.

- No light shall be of such design, height, and/or intensity so as to produce glare or direct illumination across the property line. All light shall be directed downward or inward toward the property.

- All fixtures shall be "Full Cut-Off" and/or fully shielded in design so that no light is visible above the lowest part of the fixture.

- All fixtures shall be installed so that all light emitted, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture, is projected below a horizontal plane which is parallel to the ground surface.

- No light source (bulb) should be directly visible from any point off of the property or any roadway.

- A number of bulb types are recommended by the design standards for use.

- Fixtures should be architecturally compatible with, and designed to compliment, the principle structure and surroundings.

- All proposed fixtures shall be shown on the Landscape Plan.

According to the City of Conway Design Standards pattern book, projects of 25 acres or more are deemed relevant on a scale greater than standard projects. These large scale projects may have a regional impact and, therefore, are very often regional destinations. It is for this reason that a "Regional Scale Development" (RSD) will be reviewed as unique environments with unique dynamics. Although full compliance with the provisions contained within the City of Conway Design Standard pattern book is desired, there may be additional allowances for exceptions, to include Article 1301 of the Conway Zoning Ordinance, based upon individual merits and site characteristics. The Conway Planning Department will review each RSD independently of other RSDs. All RSD development plans are required to gain Conway City Council approval prior to any permit(s) being issued.

Prevailing Wind Patterns/Residences

Average prevailing winds for this area typically blow at a speed of 7.3 mph from the west southwest direction. All residential houses in the immediate vicinity are located due north of the planning site. There are no businesses or other establishments in the immediate area.

i.) Odor Sources

Odor control facilities proposed for the TBWWTP include targeting the most prevalent sources of odor as well as odor treatment with a biofilter or an adsorber/Chemical wet scrubber combination. The areas targeted for odor control include the headworks and sludge facilities. As proposed, odors will be captured at the source in these facilities, to minimize the quantity of air that must be treated, and conveyed to the biofilter via dedicated duct work, piping, and blower fan.

The proposed biofilter is an in-ground filter with soil media. The overall intent is to reduce odor from the TBWWTP, while limiting the operation and maintenance requirements of an odor treatment process.

A chemical wet scrubber system refers to the use of interacting air stream with odorous or undesirable compounds with a liquid solution so that the odorous or undesirable compounds are adsorbed into the liquid phase.

For this project, the proposed facilities targeted for odorous air containment and collection are:

- Headworks: Screen Channels – the influent screens, including washer and compactor, will be covered or enclosed. In addition, the screen channels will be covered with checkered stainless steel plate. Air will be pulled from the screening equipment and channels and treated.

- Headworks: Grit Dumpster – Captured grit from the grit removal process will be placed in dumpsters for final removal and disposal. The dumpsters will be housed to contain odor. Air will be pulled from the grit dumpster room and treated.

- Sludge Digesters: The Anaerobic Digesters will be self-contained units and capture potentially noxious gases generated during the sludge digestion process. Methane gas produced from these units, in excess of the volume required for boiler fuel to maintain digester temperature, will be flared off using a waste gas burner(s).

The following design criteria are proposed for the odor ventilation systems and will be further reviewed and refined during design:

- Above grade duct work is proposed as FRP whereas below grade ductwork will be plastic corrugated pipe or HDPE pipe.

- The odor ventilation blower will be FRP

- For particularly odorous areas that are enclosed and will be occupied, such as rooms with open BFP's or truck loading bays for loading sludge cake, ventilation will provide 12 to 20 ACH. As previously mentioned, hoods will be provided over the BFP's so that this air change will be provided directly over the treatment process (in lieu of the entire building).

- For covered basins that are not occupied, the ventilation system will provide 6 to 12 ACH.

- Sweep velocities along channels being ventilated will target at least 50 feet per minute; with 100 feet per minute as more desirable.

- Capture velocities on makeup air openings (including cracks) will target at least 200 feet per minute.

- For tightly closed conveyor systems (e.g., screen conveyors), the ventilation system will provide 10 cfm per foot of conveyor.

As previously stated, the prevailing wind in this area blows at a speed of 7.3 mph from the west southwest direction. These winds would potentially blow any odors that have not been captured by the proposed odor control facilities in the east northeast direction. This would indicate that any odors not captured would be blown in the direction of adjacent agricultural fields located in this direction. Typically any odors not captured should not affect the residences located to the north of the planning site.

j.) Incineration

No incineration is to be used in this project.

The proposed project will comply with all federal, state, and local regulations pertaining to the completion of the TBWWTP. The project will follow guidance and standards set by the Arkansas River Basin Plan and the Arkansas Water Quality Management Plan. By following all regulations and guidelines impact to the local waterway's water quality should be minimal. Future monitoring and analysis will determine whether further remediating actions will be necessary for regulatory compliance. Since the majority of the project is taking place in rural areas and along utility easements changes in aesthetic, recreational, and functional uses of the landscape will be insignificant.

k.) Land Application of Sludge

Sludge generated from the treatment facilities at the TBWWTP will be processed using anaerobic digestion and land application of Class B Biosolids.

All federal, state, and local guidelines and regulations will be followed to minimize impacts to aquatic biota.

l.) Potential Noise Levels

Potential noise sources from the proposed treatment plant normal operation will include the blowers, centrifuges, bar screens, roof exhaust fans, and other miscellaneous pumps, motors, and fans. All the equipment listed above shall meet the current acceptable decibel limit of 85 dBA mandated by OSHA. The majority of the equipment will operate on a continuous basis with multiple units running simultaneously. The anticipated noise level range for all equipment is

<85 dBA – 100 dBA. The majority of the noise will be eliminated due to sound attenuation measures and all excessively loud equipment being located in enclosed buildings. It is further anticipated that the noise levels beyond the property boundary should be negligible.

m.) Control Access to Facility

While federal law does not require wastewater systems to take security measures, it does require certain wastewater facilities to take security precautions. The 1990 Clean Air Act amendments mandated EPA oversight of risk management planning at facilities that handle more than specified-threshold quantities of hazardous substances, including the gaseous chlorine often used as a disinfectant at wastewater facilities. Specifically, EPA regulations implementing the Clean Air Act require these facilities to prepare Risk Management Plans (RMP's) that summarize the potential threat of sudden, accidental, large releases of certain chemicals; including the results occurring off-site in a worst-case chemical accident, and the facility's plan to prevent releases and mitigate any damage. RMP's are to be revised and resubmitted to EPA at least every 5 years, and EPA is required to review them and require revisions, if necessary.

Special considerations should be provided for security of the extremely critical or hazardous assets or facilities identified in the Vulnerability Assessment. Typical critical assets of wastewater treatment plants that should be considered for more robust or enhanced security measures include:

- Toxic gas storage facilities such as chlorine, sulfur dioxide, and liquid oxygen.
- Facilities for storage and use of combustible/flammable materials such as methane, gasoline, propane, methanol, and oxygen storage facilities and natural gas metering and connections.
- Power equipment and systems such as electrical switchgear, transformers, substations, generators, and motor control centers.
- Major mechanical systems such as influent, effluent, and in-plant pumping stations, and blowers.
- SCADA, security and communication systems such as network, SCADA, and security servers, and radio, microwave, and telephone communications.

Because of these considerations, the perimeter of the TBWWTP will be surrounded by a chain link fence with barbed wire and key pad entry gates. There will be a separate gated area around the Administration/Lab/Maintenance/ Shop building for public access, but gated entry to the wastewater treatment plant.

The Tucker Creek WWTP which is already surrounded by chain link fencing will be equipped with key pad entry gates. The new Central Pump Station will have a chain link fence and key entry gate.

No pesticides or insect control programs are expected for this project.

n.) Expected Energy Consumption/Chemical Used

The estimated total electrical load for a 16 MGD, 24 MGD, and 32 MGD Tupelo Bayou WWTP would be 2,450 kVA, 3,560 kVA, and 4,800 KVA respectively.

The proposed chemical wet scrubbers to be utilized for odor control would potentially use sodium hydroxide and sodium hypochlorite. Chlorine will be provided and feed at various locations throughout the plant to control algal growth. Alum or Caustic needed for pH control will also be used at the plant.

o.) Effect on Present Air Quality

Existing air quality in this area is good. Air quality monitoring data in the immediate area is limited to Particulate Matter (PM 2.5). Monitor trend reports for PM 2.5 in this area show a total of two exceedances of EPA standards in the past nine years. Monitoring of other principal pollutants regulated by the National Ambient Air Quality Standards (NAAQS) is not done in this area; therefore no comparisons can be made.

No type of incineration is proposed for this project; therefore discharging of particulate matter into the air should not be an issue. The proposed odor control systems for the TBWWTP have the potential to oxidize easily biodegradable odorous compounds such as hydrogen sulfide to a level of 99% or better. Due to these measures, the proposed project should have minimal effects on the present air quality of this area.

B. Secondary impacts

The construction on of the TBWWTP should not have any impact on the development of Conway due to its location being isolated by floodplains and its rural location. Since minimal development is expected as a result of the TBWWTP being constructed changes to population and land use patterns should be insignificant. Stormwater runoff from the construction sites poses a minor water quality issue that can be minimized through proper use and installation of BMP's.

The City of Conway should benefit greatly from the new TBWWTP and improved collection system. Extending the collection system throughout southern and western portions of Conway will allow Conway Corporation to add new sewage customers. The project will also improve water supply development to the TBWWTP area as water infrastructure will be needed for the plant.

The rate increases required for project funding will not be insignificant. The payments on the $70 million, 20 year note, that will fund the project, will amount to an annual debt service increase of $4,814,522. Operational and maintenance costs are not expected to increase above that associated with expected city growth, because once the new plant is in operation, the older and less efficient Stone Dam Creek WWTP will be abandoned. The current percentage of annual billings charged to residential customers equates to 67.45%. Applying this percentage to the debt service and dividing by the total number of residential customers, results in a required average increase in residential sewer rates of

approximately $157.23 per annum ($13.10 per month). This increase would put the average residential customer rate at approximately $309.23 per annum ($25.77 per month). While the improvements will require a significant increase in current rates, the resulting Conway Corporation rate will be at approximately the 85th percentile of rates charged by municipal sewer systems within Arkansas in 2007. The areas annual median household income is $45,370. Therefore, the percentage of median household income allocated for wastewater service will increase from 0.35% to approximately 0.7%.

The project will not negatively impact social or economic development. On the contrary, the project will provide the necessary wastewater infrastructure to enable the future sustained economic growth and development of the area. The land use of the area surrounding the proposed TBWWTP location is predominantly farmland. The construction of the plant will not impact any current land use plans and because of its isolation, it will have minimal negative impact on socioeconomic activities.

It is not known at this time that any environmentally sensitive areas will experience growth related development as a result of this project. Utility easements and floodplains contain almost all of the project area and these areas should not be expected to develop as a result of the wastewater system improvements.

6. ADVERSE IMPACTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

The project should not incur any significant adverse impact; therefore this section does not apply.

7. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The short-term negative impacts of the proposed project largely involve the construction period when the various concrete structures for the new facilities are under construction and while other construction related activities would temporarily disturb the local environment.
In terms of the natural environment, there may be a temporary increase in stream turbidity at the time. However, erosion control measures will limit this problem and there will be no persistent problems with sedimentation.
Construction equipment will temporarily increase ambient noise levels. However, the increase will be short-lived and will end when construction is complete.
In summary, the long-term gains of enhanced wastewater treatment services for the Conway area outweigh the negative short-term environmental impacts.

8. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES TO THE PROPOSED PROJECT SHOULD IT BE IMPLEMENTED

The proposed project, if implemented, will not change the present usage of the project area. Most construction materials will be earth, concrete, wiring, pumps, or electronic gear. The use of these manufactured materials for this project will not result in a significant impact on the availability and supply of those items to others.

Several irretrievable resources will be committed to the proposed project: Human labor for design, construction, operation, and maintenance of the proposed project will be committed. All funding allocated for the proposed project will be totally committed to the proposed project and will not be used for any other purposes. Electrical power and motor fuels consumed during construction and operation of the proposed project cannot be recovered.

Although the proposed project could be physically abandoned at some time in the future, it is itself an irreversible commitment to improving the quality of human life and the environment.

9. PUBLIC PARTICIPATION

Based on the status of Categorical Exclusion, public participation associated with this project consisted of one public meeting and one public hearing. The first of two opportunities for Public Participation for this project was held in the City of Conway on June 18, 2010. Master Planning efforts, project conception, project alternatives, and environmental compliance were the main topics discussed at the Public Meeting. The Public Hearing was held in Conway on August 27, 2010. Conway Corporation and Garver staff delivered a presentation focusing on project background and impacts. Comments were received from the audience and a word by word transcript of the Public Hearing and proof of Notice are included in Appendix L. Also attached in Appendix L are copies of letters sent in by Conway citizens with comments on the proposed project.

Copies of all transmittal letters sent to required agencies for the EID review are in Appendix L. Listed below are the agencies that received the EID for review:

1) U.S. Army Corps of Engineers, Little Rock District
2) U.S. Fish and Wildlife Service
3) Arkansas Historic Preservation Program
4) Department of Finance and Administration, State Clearinghouse
5) Arkansas Game and Fish Commission
6) Arkansas Department of Parks and Tourism
7) Arkansas Department of Health
8) Arkansas Natural Heritage Commission

Also included in Appendix L are copies of letters sent to required agencies informing them that the EID document was available to them to review and comment on. Listed below are the agencies that received a letter of availability:

1) Bureau of Land Management
2) National Park Service
3) U.S. Geological Survey
4) U.S. Forest Service
5) Arkansas Highway and Transportation Department
6) Federal Emergency Management Agency
7) Area Planning and Development District
8) Natural Resources Conservation Service

Appendix A

Collection System

APPENDIX A

LEGEND

- STONE DAM SERVICE AREA
- TUCKER CREEK SERVICE AREA

CYPRESS CREEK AREA

WEST AREA

TUPELO BAYOU AREA

TUCKER CREEK WASTEWATER TREATMENT PLANT

STONE DAM WASTEWATER TREATMENT PLANT

GOLD CREEK BASIN AREA

N

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, AR

COLLECTION SYSTEM & PUMP STATION IMPROVEMENTS

FUTURE PLANNING AREAS

JOB NO.: 08057000
DATE: SEPT., 2009
DESIGNED BY: RWW
DRAWN BY: AAS

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APP. A

SHEET NUMBER

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Appendix B

Future Planning Areas

APPENDIX B

LEGEND

- WWMP BASIN BOUNDARY
- CITY LIMITS
- MAJOR ARTERIALS
- BOUNDARY OF LANDS DESCRIBED IN COURT ORDER CIV 67-716, FILED SEP. 23, 1968
- CONWAY WATER DISTRICT AS FILED WITH ARKANSAS NATURAL RESOURCES COMMISION

CYPRESS CREEK AREA

NORTH AREA CONSIDERATION FOR FLOW ONLY

EAST AREA CONSIDERATION FOR FLOW ONLY

WEST AREA

TUPELO BAYOU AREA

GOLD CREEK BASIN AREA

SOUTH AREA CONSIDERATION FOR FLOW ONLY

ARKANSAS RIVER

CONWAY

LAKE CONWAY

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, AR

COLLECTION SYSTEM & PUMP STATION IMPROVEMENTS

FUTURE PLANNING AREAS

JOB NO.: 08057000
DATE: SEPT., 2009
DESIGNED BY:RWW
DRAWN BY: AAS

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Appendix C

Sub-Basin Contribution Calculations

Page #	Description
C1	Cypress Creek Area Basin
C2	Tupelo Bayou Area Basin
C3	West Area Basin
C4	Gold Creek Basin Area
C5	North Area Flow Only
C6	East Area Flow Only
C7	South Area Flow Only

CONWAY CORPORATION
WASTE WATER MASTER PLAN

CYPRESS CREEK AREA BASIN
Single Family (0-4 Units/acre)

4766 acres
37% build out
1,740 developed acres
2.75 lots/acre
2.5 p/lot
100 gpcd
1,195,968 gpd = 831 gpm
2.9 P.F.
2,409 gpm max instantaneous flow 2524 Population= 11960

PF = 2.9

I/I Flow = 100 gpcd
I/I Flow = 1,195,968 gpd = 831 gpm

3,239 gpm Max Day Total RESIDENTIAL

Peaking Factor (P_f) = 5/ (population/1000)$^{0.2}$ (with 5.0 being the maximum P_f used.)

Residential = 89.42 %
Commercial = 4.69 %
Industrial = 5.89 %

Commerical Area

250 acres
70% build out
175 developed acres
2000 gal/acre*day
350,000 gpd = 243 gpm
2.9 P.F
705 gpm max instantaneous flow

Two Areas of Cypress Creek Area currently zoned for light industrial use. Main A consists of approximately 25% of area. Where 2/3rds will be Floodplain/park area and 1/3rd will be light industrial. So Main A will service approximately = 664 gpm max instantaneous
229 gpm average

Industrial Area

314 acres
70% build out
220 developed acres
3000 gal/acre*day
659,400 gpd = 458 gpm
2.9 P.F
1,328 gpm max instantaneous flow

Main B consists of approximately 75% of area. Where mostly residential with about 1/2 of zoned commercial (offices/apartments) and remaining industrial flow, so Main B will service approximately = 4255 gpm max instantaneous
1181 gpm average

Main C is the connecting main and will serve remaining commercial use. Main C will service = 352 gpm max instantaneous
122 gpm average

Check Total Area Flow = 5,272 gpm max instantaneous
1532 gpm average

Total Area Flow = 5272 gpm max instantaneous
1532 gpm average

CONWAY CORPORATION
WASTE WATER MASTER PLAN

TUPELO BAYOU AREA BASIN
Single Family (0-4 Units/acre)

8833 acres
18% build out
1,608 developed acres
2.75 lots/acre
2.5 p/lot
100 gpcd
1,105,229 gpd = 768 gpm
2.9 P.F.
2,226 gpm max instantaneous flow

Population= 11052

I/I Flow = 100 gpcd
I/I Flow = 1105229 gpd = 768 gpm

2,993 gpm Max Day Total

Peaking Factor (P_f) = 5/ (population/1000)$^{0.2}$ (with 5.0 being the maximum P_f used.)

Residential = 88%
Commercial = 2%
Industrial = 9%

Commerical Area

220 acres
70% build out
154 developed acres
2000 gal/acre*day
308,000 gpd = 214 gpm
2.9 P.F
620 gpm max instantaneous flow

Total Acres = 9995
Industrial = 942
Commercial = 220
Residential = 8833

Industrial Area

942 acres
70% build out
659 developed acres
3000 gal/acre*day
1,978,200 gpd = 1,374 gpm
2.9 P.F
3,984 gpm max instantaneous flow

CONWAY CORPORATION
WASTE WATER MASTER PLAN

WEST AREA BASIN

Single Family (0-4 Units/acre)

6295	acres	
37%	build out	
2,298	developed acres	
2.75	lots/acre	
2.5	p/lot	
100	gpcd	
1,579,652	gpd =	1097 gpm
2.9	P.F.	
3,181	gpm max instantaneous flow	

Population = 23109

Single Family (5-10 Units/acre)

278	acres	
80%	build out	
222	developed acres	
7	lots/acre	
2.5	p/lot	
100	gpcd	
389,200	gpd =	270 gpm
2.9	P.F.	
784	gpm max instantaneous flow	

Residential = 79%
Commercial = 15%
Industrial = 6%

Multi Family (10+ Units/acre)

171	acres	
80%	build out	
137	developed acres	
10	lots/acre	
2.5	p/lot	
100	gpcd	
342,000	gpd =	238 gpm
2.9	P.F.	
689	gpm max instantaneous flow	

Commerical Area

1271	acres	
70%	build out	
890	developed acres	
2000	gal/acre*day	
1,779,400	gpd =	1,236 gpm
2.9	P.F	
3,584	gpm max instantaneous flow	

Industrial Area

525	acres	
70%	build out	
368	developed acres	
3000	gal/acre*day	
1,102,500	gpd =	766 gpm
2.9	P.F	
2,220	gpm max instantaneous flow	

I/I Flow =	100 gpcd	
I/I Flow =	2,310,852 gpd =	1605 gpm

6,259 gpm **Max Day Total** RESIDENTIAL

Peaking Factor (P_f) = 5/ (population/1000)$^{0.2}$ (with 5.0 being the maximum P_f used.)

Total Area Flow = 12062 gpm max instantaneous
3606 gpm average

CONWAY CORPORATION
WASTE WATER MASTER PLAN

GOLD CREEK BASIN AREA

Single Family (0-4 Units/acre)

4453	acres	
36%	build out	
1,619	developed acres	
2.75	lots/acre	
2.5	p/lot	
100	gpcd	
1,113,139	gpd =	773 gpm
2.9	P.F.	
2,242	gpm max instantaneous flow	

Single Family (5-10 Units/acre)

15	acres	
80%	build out	
12	developed acres	
7	home/acre	
2.5	cph	
100	gpdc	
21,000	gpd =	15 gpm
2.9	P.F.	
42	gpm max instantaneous flow	

Multi Family (10+ Units/acre)

22	acres	
80%	build out	
18	developed acres	
10	home/acre	
2.5	cph	
100	gpdc	
44,000	gpd =	31 gpm
2.9	P.F.	
89	gpm max instantaneous flow	

I/I Flow =	100	gpcd
I/I Flow =	1178139 gpd =	818 gpm

Population =	11781	
Residential =		88%
Commercial =		3%
Industrial =		9%

Commerical Area

150	acres	
70%	build out	
105	developed acres	
2000	gal/acre*day	
210,000	gpd =	146 gpm
2.9	P.F	
423	gpm max instantaneous flow	

Industrial Area

450	acres	
70%	build out	
315	developed acres	
3000	gal/acre*day	
945,000	gpd =	656 gpm
2.9	P.F	
1,903	gpm max instantaneous flow	

3,191 gpm	Max Day Total	RESIDENTIAL

Peaking Factor (P_f) = 5/ (population/1000)$^{0.2}$ (with 5.0 being the maximum P_f used.)

Conway Corporation
Waste Water Master Plan

North Area Flow Only

1586	acres			
29%	build out			3162.1
460	developed acres			
2.75	home/acre			
2.5	cph			
100	gpdc			
316,209	gpd =	220 gpm	220	
2.9	P.F.			
637	gpm max instantaneous flow			875

I/I Flow =	100	gpcd	
I/I Flow =	316209	gpd =	220 gpm

856 gpm	Max Day Total

Conway Corporation

Conway Corporation
Waste Water Master Plan

East Area Flow Only

			Population
5828	acres		
11%	build out		4371.4
636	developed acres		
2.75	home/acre		
2.5	cph		
100	gpdc		
437,136	gpd =	304 gpm	
2.9	P.F.		
880	gpm max instantaneous flow		

I/I Flow =	100	gpcd	
I/I Flow =	437136	gpd =	304 gpm

1,184 gpm	Max Day Total

Commerical Area

800	acres	
70%	build out	
560	developed acres	
2000	gal/acre*day	
1,120,000	gpd =	778 gpm
2.9	P.F	
2,256	gpm max instantaneous flow	

Conway Corporation

Conway Corporation
Waste Water Master Plan

South Basin Flow only

2331	acres	
15%	build out	
340	developed acres	
2.75	home/acre	
2.5	cph	
100	gpdc	
233,974	gpd =	162 gpm
2.9	P.F.	
471	gpm max instantaneous flow	

Population

2339.7

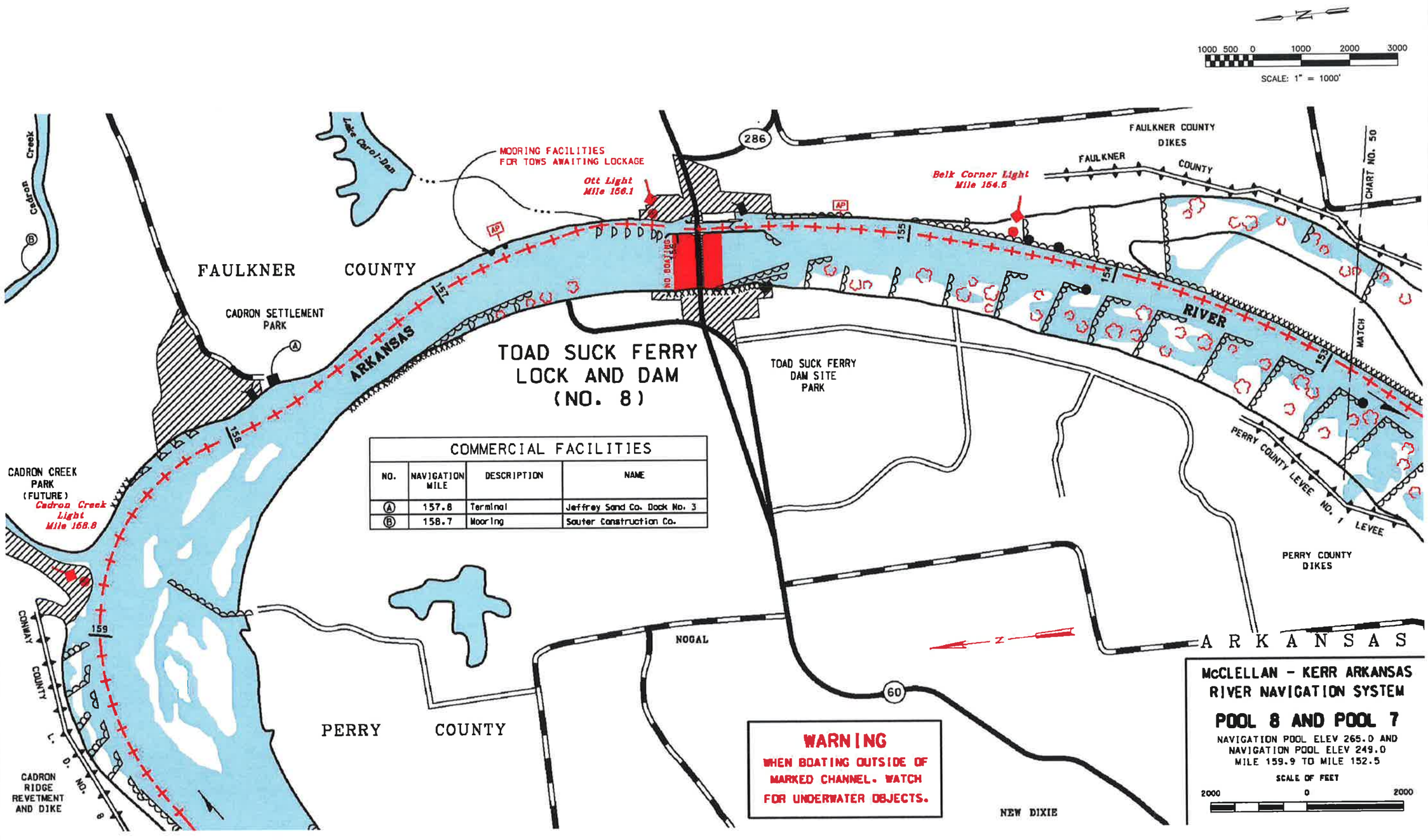


I/I Flow =	100 gpcd	
I/I Flow =	233974 gpd =	162 gpm

634 gpm	Max Day Total

Appendix D

USACOE Pool and Navigation Chart



COMMERCIAL FACILITIES

NO.	NAVIGATION MILE	DESCRIPTION	NAME
Ⓐ	157.8	Terminal	Jeffrey Sand Co. Dock No. 3
Ⓑ	158.7	Mooring	Souter Construction Co.

WARNING
WHEN BOATING OUTSIDE OF MARKED CHANNEL. WATCH FOR UNDERWATER OBJECTS.

McCLELLAN - KERR ARKANSAS RIVER NAVIGATION SYSTEM

POOL 8 AND POOL 7

NAVIGATION POOL ELEV 265.0 AND NAVIGATION POOL ELEV 249.0
MILE 159.9 TO MILE 152.5

SCALE OF FEET
2000 0 2000

USACOE NAVIGATION & POOL CHART
POOLS 7 & 8
SCALE: 1" = 1000'

GARVER
GARVER LLC No. 766 CERTIFICATE OF AUTHORIZATION ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, AR
COLLECTION SYSTEM & PUMP STATION IMPROVEMENTS

USACOE NAVIGATION AND POOL CHART POOL 7 & POOL 8

JOB NO.: 08057000
DATE: SEPT., 2009
DESIGNED BY: RWW
DRAWN BY: FLW

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
APP. D

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\PERMITS\Appendix_D.dwg Last Save: 1/19/2010 3:18 PM Last saved by: Rwwilmoth
Last plotted by: Wilmoth, Ricky, W. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 2/8/2010 9:50 AM Plotter used: \\Gfyvdc02\Canon iR C4080 PS

Appendix E

Gleason & Conway Quad Map of TBWWTP Site and Collection System

TUPELO BAYOU WWTP

OUTFALL

FORCE MAIN

GRAVITY

DONNELL RIDGE PUMP STATION

PIPELINE ROUTE

FORCE MAIN

GRAVITY

BEGIN GRAVITY

END FORCE MAIN

FORCE MAIN

CENTRAL PUMP STATION

T5N R15W S24

T6N R14W S20

T5N R14W S21

T5N R14W S22

T5N R14W S23

T5N R14W S24

T5N R14W S29

Tucker

Donald Ridge

Stone Creek

Dutch Creek

Bayou

Shale Pit

Sewage Disposal Pond

Trailer Park

Fairground

Belk Corner

Radio Towers

Salem Ch

Calvary Ch

New Bethel Ch

Bethel Ch

Hardin Cem

Old Suck Ferry Lock & Dam

Mile 156

Quarry

ROAD

CONWAY CORPORATION
CONWAY, AR

GLEASON AND CONWAY QUADS

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER LLC
No. 766
ARKANSAS ENGINEER

SCALE:
1" = 2000'

JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
APP. E

SHEET NUMBER

Appendix F

TBWWTP FEMA Flood Map

TUPELO BAYOU WWTP

OUTFALL

DONNELL RIDGE PUMP STATION

CENTRAL PUMP STATION

PIPELINE ROUTE

GRAVITY

FORCE MAIN

ZONE AE

ZONE X

ZONE A

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

FLOOD AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increased flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

GARVER

CERTIFICATE OF AUTHORIZATION ARKANSAS ENGINEER GARVER LLC No. 766

CONWAY CORPORATION
CONWAY, AR

TBWWTP FEMA FLOOD MAP

SCALE: 1" = 2000'

JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
APP. F

SHEET NUMBER

Appendix G

Wetland Jurisdiction Determination Report

Jurisdictional Determination

Conway Corporation

Tupelo Bayou Wastewater Treatment Plant and Collection System Improvements

October 2010

Inspection Completed By:

Mr. Bill Henson

Garver, L.L.C.

PURPOSE

Conway's existing wastewater treatment facilities consists of an older plant at the southeast corner of the city and the effluent from this plant discharges into Stone Dam Creek, which flows into the upper end of Lake Conway. Another plant at the southwest corner of the city discharges effluent into Tupelo Bayou, which flows into the Arkansas River. The purpose of the proposed plan is to collect discharges from these plants, transport them westward by means of new gravity lines, force mains and lift stations to a proposed new treatment plant on the east bank of the Arkansas River two miles downstream from Toad Suck Lock and Dam. Effluent from the new plant would discharge into the Arkansas River west of the site.

PROPOSED FACILITIES

The proposed new treatment plant site contains about 80 acres and is bounded on the west by the Faulkner County Levee, on the east by Lollie Road, and on the south by an existing sand mining operation. Flows to the treatment plant site would be by a gravity main extending along the northeast boundary of the site, southward along the east boundary to the southeast corner of the site, then east and southward along farm roads with field boundaries to the proposed lift station on the west sides of the Tupelo Bayou just south of Donnell Ridge Road. The location of the proposed treatment plant site and the gravity main from the plant to the lift station is shown on the enclosed set of aerial mosaics. The alignment of the remaining east section is also shown on this set of mosaics. At the lift station the stationing on the alignment of the main is re-zeroed.

The proposed gravity main runs eastward from the lift station after crossing Tucker Creek just east of the lift station site. For the first 4,600 feet the alignment is through farm fields just south of the

abandoned old channel of Tupelo Bayou. It then crosses the old channel in an existing farm road fill where it follows farm fields eastward along the north side of an unnamed east bank tributary to Tupelo Bayou to east of Old Military Road where it crosses the unnamed tributary. It then continues eastward on the south side of the unnamed tributary crossing Nutters Chapel Road and continues east through a subdivision of several acre home sites to S. Salem Road. The alignment continues eastward adjacent to Favre Lane. The alignment turns northeast through farm fields to S. German Lane. Just east of S. German Lane the alignment crosses Stone Dam creek and continues eastward to just south of the existing Stone Dam Creek WWTP. It then turns south crossing Stone Dam Creek again and then terminates at the Stone Dam Creek WWTP.

Garver, LLC investigated additional changes or updates to the proposed route on August 3 & 4, 2010 for the presence of jurisdictional waters.

FIELD INVESTIGATION – WWTP TO OUTFALL – ARKANSAS RIVER – STA. 0+00 TO 26+00

The area between Sta. 0+00 and 6+00 is currently row crop that is actively farmed. From Sta. 6+00 to 10+00 is on the edge of an active sand manufacturing facility. As the alignment proceeds west, it crosses the main Arkansas River levee system. A depressional, forested and isolated wetland is located the base of the levee system near the crossing point of the proposed alignment. Hydrology indicators at this location include water lines, saturation, sediment deposits and water-stained leaves. This area exhibited hydric soils at the surface in with low chroma soils. A dominance of hydrophytic vegetation was also present. Refer to Observation Point (OB) 2. Another depressional, forested wetland exists from approximately Sta. 17+00 to 22+00. This area contained significant amounts of drift material, sediment deposits and is lower that the surrounding area. Refer to Data Point (DP) 7. This depressed area is completely surrounded by access roads and appears to be isolated. A small wetland depression was also

located near the Arkansas River on the existing sand bar at Sta. 30+50. This small isolated depression exhibited a surface layer of hydric soils approximately 4" deep. The remainder of the soil profile consisted of sand. It is likely that this area is occasionally flooded.

FIELD INVESTIGATION – WWTP TO LIFT STATION

During the periods January 22, 2009 through February 5, 2009, June 16, 2009, August 25, 2009, and October 1, 2009 W.R. Henson examined the proposed treatment plant site and the entire alignment of the gravity and forcemains for stream crossings and potential wetlands. Wetland determinations were made using the procedures in the 1987 Corps of Engineers Wetland Delineation Manual. All field notes are recorded on the attached data forms. The location of the wetland data points, stream crossings, wetland areas, and other jurisdictional information are shown on the enclosed set of aerial mosaics.

The proposed wastewater treatment site is composed of a northeast section which gently slopes to the south and southwest section which also gently slopes southward. There is a steep drop off running from the northwest corner to the southeast corner separating the two sections. The drop off is about 10 feet on the north and 4 feet on the south. Except for the north end of the drop off the entire site is in row crops. At the time of the observation the northeast section had been in soybeans the previous crop year and the southwest section was in young wheat. There was a small depressional area in the northeast corner of this site, a slight low along the toe of the drop off near the north, and a slight depression in the southeast corner where wetland data points CO-1, CO-2, CO-3, and CO-4, respectively were set. Only the depression in the southeast corner exhibited a hydrologic indicator, sediment deposits in data point 4-09. The point was also the only one to have vegetation, ranunculus species, which meets the 50 percent facultative criteria. Soils on the site are mapped Roxana very fine sandy loam except for the depression in the southeast corner which is mapped Gallion silt loam. Neither soil is considered a hydric

soil. The soils in the data points on the site exhibit no hydric criteria and matched the soil profile of these soils, resulting in no hydric soils on the site. Therefore there are no wetlands on the proposed wastewater treatment plant site.

From the southeast corner of the proposed treatment plant the main extends eastward for 2,600 feet down the center line of a 25-foot wide graveled farm road. For the first 1,300 feet the road is on a slight ridge with drainage gently sloping to the north and south of the road. At the time of observation there was a thick stand of 30-inch soybeans up to the road edge on both sides. There was no visible evidence of any low areas in the soybeans affecting their growth in 100 feet either side of the road and no data points were set. In the eastern 1,300 feet the gravel road is on the south side of a 100-foot wide fill that is well sloped for drainage to a shallow east-west ditch along the north side toe of the fill and on the south side of a rice field. No data points were set in the fill as there was no potential for wetlands. Along the south edge of the fill there is a 20-foot wide shallow ditch draining eastward. Soybeans had been planted across the ditch and were clean with no other vegetation except for a slightly lower area in the center of this 1,300 foot section. Data point CO-2A was set in the low about 1,950 feet east of Lollie Road. The low was 20 feet wide and 100 feet long and contained Carex sp., barnyard grass, pigweed, poor Joe, and ground cherry besides soybeans. Only 33 percent of these species are facultative or wetter and do not meet the vegetative criteria for wetlands. Hydrologic criteria of sediment deposits and oxidized root channels in the upper 12 inches were noted and meet the hydrologic criteria. There were hydric soils at the point as the soils were 10 YR 4/1 and the soil profile matches the mapped hydric soil of Perry clay. The low is not considered at wetland as the vegetation does not meet the criteria for wetlands. The low could be considered a farmed wetland as all the vegetation is annuals and if the field is abandoned could develop facultative or wetter vegetation.

From the corner at the east end of the above section the main turns south for 1,800 feet to a corner of Donnell Ridge Road. The alignment in this reach is in the center of an unimproved farm road on 1 to 2 feet of fill and 30 feet wide. There is a slight drainage ditch along the toe of the fill on the west side and standing soybeans beyond. A precision graded field with standing rice is on the east side and an irrigation ditch with a low levee is along the toe of the fill on the south end. At about 800 feet north of Donnell Ridge Road corner in the soybeans on the west side there is a 70 feet wide by 150 feet long low with a water furrow through the center. The vegetation, soils, and hydrology in data point CO-1A set in the low was the same as at data point CO-2A described above and in the north end of the same soybean field. The low is not a wetland but could be a farmed wetland as described above. There was no visible evidence of any other lows in the soybeans that would have the potential to be wetlands. The precision graded rice field on the east side is graded with 0.2 feet fall in 100 feet which provides good slopes for drainage and although is in the hydric Perry clay there is not potential for wetlands and no data points were set.

This entire alignment from the location of the proposed lift station (0+00) to the plant site (66+81) is completely contained in active agricultural fields of rice, soybean and corn. No wetlands were identified within the proposed construction limits throughout this proposed alignment.

FIELD INVESTIGATION – LIFT STATION TO OLD MILITARY ROAD

From the Donnell Ridge corner the alignment runs east on the north side of Donnell Ridge for 700 feet. The road is on 3 to 4 feet of fill with a drainage ditch along the toe on the north side. A low rice field levee is just north of the road ditch with the precision graded rice field as described above beyond the levee. As the road ditch is not a "Water of the U.S." and there is no potential for wetlands in the precision graded field no data points were set.

At this point the alignment turns southeast under Donnell Ridge, extends 150 feet southeast to a turn and then east for 100 feet crossing Tucker Creek. The 1500 foot section was in a naturally well sloped and drained wheat field in hydric Perry clay soils. No data points were set in this reach as there was no evidence of hydrology and the wheat is an upland species. Since that time of observation the entire field has been precision graded. Data point CO-13 was set in the lowest part of a small patch of woods on the north side of the wooded area. The point was well drained to the northeast and exhibited no hydrology indicators. The vegetation consisted of sugar berry, green ash, red cedar, Alabama supple Jack, and poison ivy. The soil is mapped Perry clay but had 2 chroma with no mottles, and is not considered hydric. The point does not meet the hydrology or hydric soils criteria and is not considered a wetland. The remainder of the patch of woods is higher and is dominated by red cedar. There is a road ditch on the north side near Donnell Ridge and a short ditch on the east side. Data point CO-14 was set on the east side of the wooded area near the toe of a high spoil bank on the west side of Tucker Creek. The vegetation was young wheat and ranuculus sp. and was only 50 percent facultative or wetter. The only hydrology indicator was oxidized root channels in the upper 12 inches and the soil matched the hydric Perry clay soil. The point is not considered a wetland as it does not meet the hydrology criteria.

The alignment continues east crossing Tucker Creek. The cut-off channel is 40 feet wide with a depth of 2-3 feet and then has 2 feet in 10 feet side slopes for 20 feet and then 10 feet in 10 feet slopes to the top of the adjacent spoil piles. The bed and the banks of the channel are clay soils with no vegetation growing in the bed and red maple and sugar berry growing on the banks. The channel has an ordinary high water mark (OHWM) and is 40 feet wide at the OHWM. Considering that the lower Tucker Creek drainage area is in Perry clay and the upper end has a strong urban effect, there is not much rainfall infiltration into the ground to produce a sustained water flow to the stream and Tucker Creek would be considered to be intermittent.

From Tucker Creek the alignment continues east from stations 13+00 to 28+00 (gravity main) along the south edge of a woods line for 1,500 feet. Data points CO-15, 16, and 17 were set in the lowest section of this reach. The vegetation at these points included red cedar, greenbrier, ranuculus sp., rye grass, barnyard grass, wheat grass, sugar berry, honeysuckle, honey locust, green ash, Alabama supple Jack, and American elm with facultative or wetter percentages being 50, 37.5, and 62.5, respectively. Hydrologic indicators were none, oxidized root channels, and saturation, respectively. All 3 points were in Perry clay soils but the soil profiles did not match the Perry clay profile and had 2 chromas with no mottles. The 3 points are not considered wetlands as they do not meet all of the 3 criteria for wetlands. There is a wetland on the north edge of the woods along the abandoned Tupelo Bayou channel. No data points were set in this wetland as it is dominated by obligate wetland species. At the east end of the woods line at station 30+00 (gravity main) data point CO-18 was set in a low extending south near the alignment. The vegetation at this point was 100 percent facultative or wetter, the hydrology indicators included inundation, saturation, oxidized root channels, and FAC-Natural test, and the soil was hydric with 2 chromas with no mottles. The site is a wetland as it meets all 3 wetland criteria. Red Cedar dominates the higher ground around this point.

The alignment continues east from stations 31+00 to 36+00 (gravity main) across a fall combined soybean field. Data point CO-19 was set at station 36+00 (gravity main) in a slight low on the east side of the field. The vegetation consisted of soybean stubble, ranuculus sp., and rye grass for 33 percent facultative or wetter. There were no hydrologic indicators exhibited at the point but the soil was hydric with a 2 chroma with mottles. The point was not a wetland as it did not meet the vegetative or hydrologic criteria for wetlands. The alignment continues east for 700 feet from stations 36+00 to 43+00 (gravity main) to a turn to the north. In this reach, data point CO-20, the alignment crosses a fescue dominated pasture with a few scattered young honey locust and a red cedar dominated fence row 30 feet to the south. There were no hydrologic indicators in the reach. The soil is mapped Perry

clay, a hydric soil, but no soils pit was dug as the point was not a wetland because the vegetation and hydrologic criteria were not met. There was a wetland 30 feet southeast of the corner at station 43+00 (gravity main) along the old Tupelo Bayou channel. No data point was set as the wetland is dominated mostly by cypress and tupelo gum which are obligate wetland species. From the corner the alignment extends north for 830 feet from stations 43+00 to 51+30 (gravity main) to another corner turning east again. Data point CO-21 describes this reach which had been disced and sown in wheat. There was also fescue in the west edge of the field and red cedar, rock elm, and honey locust in the fence row 30 feet to the west. There were no hydrologic indicators exhibited in the reach and the soil was mapped Perry clay. The reach is not a wetland as the vegetation and hydrologic criteria were not met.

From the corner, the alignment continues east for 250 feet from stations 51+30 to 53+80 (gravity main) to another turn to the north and is in the edge of a pond formed by road fills across opposite ends of the abandoned channel of Tupelo Bayou. The pond has a 10 to 15 feet wide wetland fringe dominated by button bush, an obligate wetland species. From the corner to the north from station 53+80 to 54+80 (gravity main) the alignment extends about 100 feet along the center of a farm road crossing. There is the pond upstream or to the west and a cypress button bush wetland on the downstream or eastside of the road fill. The alignment extends north for 330 feet from stations 54+80 to 58+10 (gravity main) across another high, well sloped wheat field that had soybean on it in the summer and the reach is noted as data point CO-22. Although the soil at the point was mapped Perry clay, the vegetation and hydrology criteria for wetlands were not met and the reach is not a wetland.

From the corner at station 58+10 (gravity main) the alignment continues east for 900 feet along the north or low side of the wheat field to station 67+80 (gravity main). There is a wooded area just north of the alignment. Data point CO-23 was set at station 58+10 (gravity main) at the corner and data point CO-24 was set at station 68+00 (gravity main) at the east end of the wheat field. The vegetation at the

points was 46 and 25 percent facultative or wetter, respectively. There were no hydrologic indicators at either point and although the soils were mapped Perry clay both points had 2 chroma soils with no mottles. Neither of these points is a wetland as none of the requirements for wetlands was met. The alignment continues east from the wheat field first crossing a graveled farm road and then continuing for 1,350 feet along the south boundary of an improved pasture to station 80+60 (gravity main). A major power line crosses the alignment on the east end of this reach. There were 3 lows crossing the alignment in this reach and data points CO-25, 26, and 27 were set in each low from west to east. The vegetation at theses points was dominated mostly by upland species resulting in 0, 33, and 30 percent facultative or wetter species respectively, at these points. It had rained 1 plus inches the night before the observation of inundation or saturation as hydrologic indicators. Considering this recent rainfall and the small drainage areas of a few acres it is doubtful these indicators would be exhibited at these points under normal conditions. The soils at the 3 points are mapped Perry clay but soils at the points had 2 chromas with no mottles and are not considered hydric. The areas at the 3 points are not considered wetlands as they do not meet the vegetative or hydric soils criteria for wetlands. The unnamed left bank tributary to Tupelo Bayou runs west to east in the woods, 100 to 200 feet south of the alignment.

From the corner at station 80+60 (gravity main) the alignment turns north for 550 feet to station 86+10 (gravity main) where it corners to the east. It crosses 2 lows in this reach where data points CO-28 and 29 were set south to north respectively. The data points had vegetation dominated by wetland species with 82 and 84 percent facultative or wetter. The lows exhibited hydrologic indicators of inundation and saturation which probably would not be exhibited under normal conditions as described in paragraph 15. The soil at the points was mapped Perry clay but the soils at the points had 2 chroma with no mottles, and are not considered hydric. The areas at the points are not wetlands as the hydric soils criteria for wetlands were not met. At the north station 86+10 (gravity main) corner the alignment turns east and data point CO-30 was set at the corner. The ground is slight higher at this point than at points

CO-28 and29. The vegetation at the point is dominated by upland species and was only 40 percent facultative or wetter. Although the soil was saturated it is doubtful it would be exhibited under normal conditions as described in paragraph 15. The soil was mapped Perry clay but at the point the soil had a 4 chroma with no mottles. The area at the point is not is not a wetland as it does not meet any of the criteria for wetlands.

East from the corner the alignment from stations 86+10 to 94+10 (gravity main) is in a narrow east-west field just south of a wooded fence line. In this 800 feet the alignment is on high uplands designated point CO-31. Past this area the alignment crosses a slight drain at station 94+20 (gravity main) with a channel about 4 feet wide by 4 inches deep with no OHWM. Data point CO-32 was set in the drain. The vegetation was 50 percent facultative or wetter and the site was inundated and saturated but would probably not be under normal conditions as described in paragraph 15. The soils were mapped Muskogee silt loam but the soil at the point did not match this profile and had a 2 chroma with no mottles. The area at the point is not a wetland as it does not meet the hydrologic and hydric soils criteria for wetlands. East past this point from stations 94+60 to 98+60 (gravity main) the alignment crosses 400 feet of high uplands designated data point CO-33 and is similar to data point CO-31. Data point CO-34 was set at the east corner at station 100+40, center where the alignment turns north again. The vegetation was 71 percent facultative or wetter and secondary hydrologic indicators of oxidized root channels and FAC-Neutral test were exhibited. The soil at this point was mapped Taft silt loam but the soil did not match the Taft profile and had a 2 chroma with no mottles and is not considered hydric. The area at the point is not a wetland as it does not meet the hydric soils criteria.

At the corner the alignment turns north again for 690 feet from stations 100+40 to 107+30 (gravity main) and is in the east end of a field with woods to the east. The site designated data point CO-35 is on a high upland as the vegetation is mostly upland, and only 20 percent facultative or wetter. There is

some surface water and saturation but would not occur under normal conditions as described in paragraph 15. At the north corner, the alignment turns east in the corner of a wooded section. Data point CO-36 opposite station 108+00 (gravity main) was set in this corner of the woods and had vegetation of 50 percent facultative or greater. The only hydrologic indicator was oxidized root channels and the soil had a 4 chroma with no mottles. The soil was mapped Muskogee silt loam but the soil did not match the profile for Muskogee. The area at the point is not a wetland as the hydrology and soils do not meet the criteria for wetlands.

An area 250 feet east of the corner is poorly drained with shallow puddles around. Data point CO-37 was set in this area opposite station 111+00 (gravity main). The point is in the edge of the woods and 40 feet south of the alignment. The vegetation at the point was 58 percent facultative or wetter and the only hydrologic indicator was oxidized root channels. The soil had a 3 chroma with no mottles and the soil profile did not match the profile for the mapped Muskogee silt loam. The area at the point is not a wetland as it does not meet the hydrologic and hydric soils criteria. For the next 650 feet from stations 112+50 to 119+00 (gravity main) the alignment crosses a well sloped upland as the vegetation was 33 percent facultative or wetter and the only hydrologic indicator was oxidized root channels. A soil pit near the center of the reach had a 3 chroma with no mottles and was mapped Ouachita silt loam and did not match the Ouachita soil profile. The reach is not a wetland as none of the criteria for wetlands was met. Just east of the east end of this reach the channel of the unnamed east bank tributary to Tupelo is located just south of the alignment. Data point CO-39 was set in a low overbank on the north side of the creek and 30 feet south of the alignment opposite station 118+60 (gravity main). The vegetation in the low overbank was 88 percent facultative or wetter and hydrologic indicators of drift lines, sediment deposits, oxidized root channels, and FAC-Neutral test were exhibited. The soil at the point had a 3 chroma with no mottles, and was mapped Taft silt loam but did not match the Taft profile. The area at the point is not a wetland as it does not meet the hydric soils criteria for wetlands. There is

a low flooded area just south and west of point CO-39. This area is dominated by button bush and hibiscus, both obligate wetland plants making the low a wetland. The wetland extends from just west of point CO-39 to 60 feet southwest of the point opposite station 118+60 (gravity main).

There is a small tributary from the north entering the unnamed creek just east of point CO-39 at station 119+10 (gravity main). The soil in the bed and banks of this tributary is a sandy, silty, clay with several rock elms growing in the bed plus several shrub sized trees. The small tributary does not have an OHWM at the alignment crossing and about 170 feet upstream the tributary channel ends and the drain turns into a grassed waterway where data point CO-40 was set. East of this tributary to Old Military Road the area has recently been disturbed by the laying of a 12-inch blue poly sewer line. Also in this area the unnamed tributary is north of the alignment.

Point CO-40 is in the drainage swale and has vegetation that is 71 percent facultative or wetter stat secondary hydrologic indicators of oxidized root channels and FAC-Neutral test. Soil at the point had a 3 chroma with no mottles and was in an area mapped Taft silt loam but did not match the Taft profile. The area at the point is not a wetland as it does not meet the hydric soils criteria. About 200 feet east of point CO-40 a low 40 feet wide east-west swale starts and extends to the east about 400 feet. Data point CO-41 was set in the west end and point CO-42 in the east end. The points had vegetation that was 82 and 86 facultative or wetter, respectively and both had secondary hydrology indicators of oxidized root channels and FAC-Neutral test. The soil at both points was mapped Taft silt loam but had 3 chromas with no mottles and did not match the soil profile. The area at both points is not a wetland as the hydric soils criteria for wetlands was not met. Data point CO-43 was set in a broad slight low in a high pasture about 200 feet east of point CO-42. The vegetation at the point was 75 percent facultative or wetter and hydrologic indicators exhibited were oxidized root channels and FAC-Neutral test. The soil at the point was mapped Taft silt loam but did not match the Taft profile and had a 2 chroma with no

mottles. The area at the point is not a wetland as the soil did not meet the criteria for hydric soils. From this point to Old Military Road at station 127+00 (gravity main) the area is the same as at point CO-43 a high flat pasture.

This section included investigating waters along the proposed alignment for approximately 1,750 linear feet. The data collected at DP2 indicate a palustrine emergent wetland. This area consisted predominantly of herbaceous grasses and exhibited hydric soils and adequate hydrology. Hydrology criteria were met with two secondary indicators (oxidized rhizospheres and FAC-Neutral test). Hydric soil indicators included distinct mottling with low chroma parent soils (i.e., 10YR4/2). A small isolated depression was observed near the alignment's crossing of an unnamed tributary near Sta. 119+75. This isolated depression is deep and incised. It contained no vegetation within the banks, but hydrophytic vegetation near the top-of-banks. The alignment crosses a stream near Sta. 119+25. This flowing stream would be considered perennial in nature and exhibited an OHWM of 8'w x 7"d and contained aquatic vegetation.

FIELD INVESTIGATION – OLD MILITARY ROAD TO S. SALEM ROAD

Data point CO-44 was set on the west of the low at station 139+40 (gravity main) and point CO-45 was set at the corner on the east end at station 141+50 (gravity main). The vegetation at the points was 67 and 91 percent facultative or wetter, respectively and both points had secondary hydrologic indicators of oxidized root channels and FAC-Neutral lost. The soil at the two points was mapped Amy, a hydric soil. However, the soil at both points did not match the Amy profile and both points had 2 chromas with no mottles. The areas at the two points are not wetlands as the soils do not meet the hydric soils criteria for wetlands. The alignment then turns north for 200 feet and crosses the tributary to the north side. The tributary channel is 10 feet wide at the crossing at station 142+80 (gravity main).

From just downstream of the crossing to upstream for about one quarter mile beavers have built a series of dams in the tributary channel. These dams have probably existed for a long time and represent normal conditions as the mature trees have died from the enhanced hydrology. There were no limbs on the dead trees only the main trunks are still erect. The alignment continues northeast after the crossing and is in a 600 feet long narrow water filled low about 100 to 150 feet north of and parallel to the tributary. Data points CO-46, 47, 48, and 49 were set in the low between stations 144+00 and 148+50 (gravity main). The vegetation at the 4 points was 70, 91, 57, and 80 percent facultative or wetter, respectively and the hydrologic indicators exhibited were inundation, saturation, oxidized root channels, and FAC-Neutral test for all 4 points. The soil in the area is mapped Amy, but the soil profile at the 4 points did not match the Amy profile. The soil at data point CO-46 had a 2 chroma with no mottles and exhibited no other hydric indicators. However, because of the extent of inundation in the low and dead trees in the area, the area at the point CO-46 is inundated for long periods and is considered hydric. The soils at data points CO-47 and 48 have 2 chroma with mottles are considered hydric soils while the soil at data point CO-49 has a 3 chroma with mottles and is not considered hydric. The areas at points CO-46, 47, and 48 are wetlands as they meet all of the criteria for wetlands and the area at point CO-49 is not a wetland as it does not meet the hydric soils criteria for wetlands. The wetland is about 600 feet long and averages about 50 feet in width.

About 150 feet northeast of data point CO-48 the alignment turns east at station 150+20 (gravity main) and crosses the tributary again about 150 feet east of the corner at station 151+70 (gravity main). The channel is about 25 feet wide at the crossing. A deeply inundated extension of the channel and about 30 feet wide extends westward on the alignment for about 175 feet. This area is not vegetated and is considered a part of the "Waters of the U.S." along with the tributary at the crossing. On the east side of the channel there is a high bank and the alignment continues east up 2 to 3 feet in 100 feet slope for 200 feet. This slope designated point CO-50 has vegetation that is only 11 percent facultative or wetter,

no hydrologic indicators, but the soil is mapped Amy. The area along the slope is not a wetland as it does not meet the vegetative and hydrologic criteria for wetlands. East of the slope the alignment extends east for 450 feet across a high flat. Data points CO-51 was set in the west end of the flat and point CO-52 in the east end. The vegetation at the points was 71 and 56 percent facultative or wetter and both points exhibited hydrologic indicators of inundation, saturation, drift lines, oxidized root channels, and FAC-Neutral test. The soil at both points is mapped Taft silt loam and had 3 chromas with mottles. The areas at these points are not considered a wetland as they do not meet the hydric soils criteria for wetlands.

Point CO-53 continues eastward for 400 feet and then turns north for 600 feet, then turns east for 150 feet then crosses a low where point CO-54 was set and finally crosses Nutters Chapel Road. Data point CO-53 crosses high ground over a slight hill in this reach and had vegetation with 18 percent facultative or wetter and no hydrologic indicators. The soils for the point are mapped Taft silty loam and Muskogee silty clay loam which are not hydric soils. There are no wetlands in the reach as the vegetation and the hydrology does not meet the criteria for wetlands. Data point CO-54 set in the low 50 feet north and had vegetation that was 50 percent facultative or wetter and had hydrologic indicators of inundation, saturation, and oxidized root channels. The soil at the point is mapped Leadvale silt loam, which is not a hydric soil, and the soil at the point had a 3 chroma with mottles. The low is not a wetland as the soils do not meet the criteria for wetlands.

This rerouted alignment follows a perennial unnamed tributary to Tupelo Bayou and crosses it in two places (151+75 and 152+75). This stream is perennial in nature and exhibited OHWM of 11'w x 2.5-3.0'd. Several fish and other aquatic species were observed in the stream during the delineation. Three palustrine wetland types were delineated within the study area from Sta. 152+00 to near Sta. 164+00 and include emergent, scrub/shrub and forested. These areas appear to be influenced by flooding

events and potentially groundwater in the area. Hydrology indicators include inundation, saturation, drift lines, sediment deposits, oxidized rhizospheres, drainage patterns, and water-stained leaves. Hydric soil indicators include clay loam soils with a chroma of 2 with common and distinct bright mottles. Dominant vegetation in the area includes American elm (*Ulmus Americana*, FACW), green ash (*Fraxinus pennsylvanica*, FACW), persimmon (*Diospyros virginiana*, FAC), willow oak (*Quercus* phellos, FACW-), Chinese privet (*Ligustrum* sinense, FAC), buttonbush (*Cephalanthus occidentalis*, OBL), smartweed (*Polygonum pensylvanicum*, FACW), sedge species (*Carex* species, FAC), and greenbrier (*Smilax* species, FAC).

East of Nutters Chapel Road the alignment runs southeast just south of the tributary channel in the edge of a mowed hay field. Point CO-55 was set just east of the road at station 175+20 (gravity main) and point CO-56 was set near the east end of the hay field at station 178+80 (gravity main). The vegetation at the two points had 50 and 58 percent facultative or wetter, respectively and there were no hydrologic indicators at point CO-55, and indicators of inundation, saturation, and oxidized root channels at point CO-56. The soils at both points were mapped Leadvale silt loam and both had 3 chroma with no mottles. The areas at these points are not wetlands as the hydrology and soils criteria for wetlands is not met at point CO-55 and the soils criteria is not met for point CO-56. For the next 550 feet from stations 179+50 to 185+00 (gravity main) the alignment is still south of the tributary but it is on a well sloped (3 to 5 feet in 100 feet) wooded area, which is designated as data point CO-57. The vegetation in this reach is 36 percent facultative or wetter, there are no hydrology indicators, and the soils are mapped Taft silt loam. The area in this reach is not a wetland as it does not meet any of the criteria for wetlands.

Past point CO-57 the alignment crosses to the east side of the tributary at station 185+00 (gravity main). At the crossing the tributary is 6 feet wide at the OHWM. East of the tributary the alignment is just

north of a new 2 feet wide dug ditch and for the first 250 feet from stations 186+00 to 188+50 (gravity main) the alignment is in a well sloped (1 to 2 feet in 100 feet) wooded area that is designated point CO-58. In this reach the vegetation was 42 percent facultative or wetter, had no hydrology indicators, and the soils were mapped Taft silt loam. There are no wetlands in this reach as the vegetation, hydrology, and soils do not meet the criteria for wetlands. In a 100 feet long low area just east of this reach data point CO-59 was set at station 188+00 (gravity main). The vegetation at the point was 50 percent facultative or wetter, the hydrology indicators were inundation, saturation, and oxidized root channels, and the soils had a 3 chroma with no mottles, and were mapped Taft silt loam. The low area at point CO-59 is not a wetland as the soils criteria for wetlands was not met.

The area is designated data point CO-60 and is well sloped (1 to 2 feet in 100 feet) and drained by road ditches and small natural channels with no OHWM's. The vegetation in the reach is 18 percent facultative or wetter, there were no hydrologic indicators exhibited, and the soils through the reach are mapped Leadvale silt loam, and Linker fine sandy loam, which are not hydric soils. There were no wetlands in the reach as all wetland criteria were not met.

This portion of the alignment follows an intermittent unnamed tributary for approximately 1,000 feet before crossing the tributary and heading north to Salem Road. This area contained approximately half upland and half wetland vegetation, inadequate hydrology and hydric soils in a low swale along this alignment. Not all wetland criteria were met. Information was collected at Data Point 1 near Station 192+60 in a low area downstream of an existing, off-site pond.

FIELD INVESTIGATION – S. SALEM ROAD TO STONE DAM WWTP

This section of the alignment is located within existing roadside ditches associated with Favre Lane and residential lawns adjacent to the roadway. No wetlands, streams or other waters of the US were observed in along this section of the alignment.

In one of the yards, at CO-17, the vegetation is 0 percent facultative or wetter and a second yard is 14 percent. The yards are drained well by road ditches and showed no hydrology indicators. Soils in the yards are mapped Mountainburg gravelly, fine, sandy loam. There were no wetlands in the reach as none of the criteria for wetlands was met. The alignment then turns east along the north side of the Favre Lane which is paved with asphalt. The reach is 300 ft. long and ends at station 35+50 (Central Pump Station forcemain) and is designated point CO-72. With no vegetation and the well drained road there are no wetlands in the reach.

From Favre Lane the alignment turns north for 150 ft. from stations 35+50 to 34+00 (Central Pump Station forcemain) and the reach is designated point CO-73. The alignment is along the west edge of a pasture on an old slightly elevated road bed. The vegetation on the old road beds is 25 percent facultative or wetter and in a fence row just west of the alignment is 20 percent. With the high well drained road bed there are no hydrology indicators. The soils in this reach are mapped Leadvale silt loam which is not hydric. There are no wetlands in this reach as none of the criteria for wetlands is met. About 50 ft. east of the alignment in this reach there is a small triangular water filled depression opposite station 34+50 (Central Pump Station forcemain). Data point C0-74 was set in the depression where the vegetation was 100 percent facultative or wetter. Hydrology indicators of inundation, saturation and FAC-Neutral test were evident. The soils in the depression were a mix of soils with 3 to 6 chromes and no mottles. The soils were mapped Leadvale silt loam which is not hydric and they did not match the Leadvale soil profile. The depression is not a wetland as the soil does not meet the hydric soils criteria for wetlands.

The alignment then continues northeast from station 34+00 to 27+00 (Central Pump Station forcemain) across an improved pasture for 700 ft. along the south edge of a power line right-of-way (ROW) and is designated point CO-75. The vegetation in the reach was 50 percent facultative or wetter and the high

slightly rolling area exhibited no hydrology indicators. The soil in the reach had a 6 chroma with no mottles and did not match the profile of the mapped Leadvale silt loam soils. The area in the reach is not a wetland as it did not meet the hydrology or hydric soils criteria for wetlands. The alignment then continues northeast from station 27+00 to 21+00 (Central Pump Station forcemain) in a cleared power line ROW through a wooded area for 600 ft. and is designated point CO-76. The dominant vegetation in this reach was 0 percent facultative and when occasionally noted species are added is 29 percent facultative or wetter. The reach is well sloped (2 to 3 ft in 100ft) with no depressional areas and exhibited no hydrology indicators. The soils at the site are mapped Taft silt loam which is not hydric. There are no wetlands in this reach as none of the criteria for wetlands is met. A natural drain crosses the alignment in the middle of this reach at station 23+50 (Central Pump Station forcemain). The drain has a 1 ft. bottom width and has silty clay soils in both the bed and the banks. The vegetation in the bed and banks are also the same resulting in no OHWM for the drain. About 200 ft. downstream the drain turns into a grassed drainage swale at station 21+50 (Central Pump Station forcemain).

About 100 ft. northeast of the end of the above reach the alignment crosses a low in the pasture and data point CO-77 was set in the low at station 19+20 (Central Pump Station forcemain). The vegetation in the low had 75 percent facultative or wetter and hydrology indicators of saturation, water stained leaves, and FAC-Neutral list were evident. The soils had a 2 chroma with mottles but the profile did not match the profile of the mapped Leadvale soil. The low is a wetland as all the criteria for wetlands was met at the site. The wetland is about 30 ft. wide at the alignment and extends to the northwest at that width. The wetland widens in an east direction and ends near the west shoulder of South German Lane. The wetland boundaries were set based on change in ground elevation and hydrology indicators. The alignment continues across South German Lane and then crossed Stone Dame Creek about 200 ft. northeast of South German Lane at station 16+20 (Central Pump Station forcemain). The 140 ft. reach from stations 18+00 to 16+60 (Central Pump Station forcemain) between the lane and the creek is

across a pasture with some shrubby vegetation and was designated point CO-78. In this reach vegetation was 50 percent facultative or wetter and no hydrology indicators were present. The soils were mapped Taft silt loam, which is not hydric. There are no wetlands in the reach as the hydrology and the soils do not meet the criteria for wetlands.

At the Stone Dam Creek crossing these is a narrow low overbank on the south side and data point CO-79 was set in this area at station 16+50 (Central Pump Station forcemain). The vegetation in the low overbank was 100 percent facultative or wetter and hydrology indicators of drift lines, sediment deposits, and FAC-Neutral test were evident. The soil at the point had a 2 chroma with no mottles and was also mapped Taft silt loam. The low overbank site was not low enough to be called hydric based on extended inundation by the creek. The area is not a wetland as the soils do not meet the criteria for hydric soils in wetlands. Considering the urban nature of the Stone Dam Creek drainage area the stream is intermittent. At the crossing station 16+10 (Central Pump Station forcemain) the bed of the creek is a rocky, sandy gravel and the banks are silty clay. There is no vegetation growing in the bed with vegetation at data point CO-79 growing on the bank. With the difference in soils and vegetation in the bed and banks the creek has an OHWM at the crossing. The creek is about 30 feet wide at the OHWM. About 125 north of the creek channel there is a shallow low depression at station 15+30 (Central Pump Station forcemain) data point CO-80 was set in this site. The depression is in pasture, had vegetation that was 100 percent facultative or wetter, and showed hydrology indicators of inundation, saturation, oxidized root channels and FAC-Neutral test. The soil at the point had 3 chroma with mottles and was mapped Leadvale silt loam, which is not a hydric soil. The area at the point is not a wetland as it does not meet the hydric soils criteria for wetlands.

About 200 feet northeast if the creek the alignment turns east down a graveled farm and WWTP access road. Data point CO-81 describes the nonwetland down the gravel road from stations 15+00 to 0+00

(Central Pump Station forcemain). The lack of culverts in the road produced a water filled depression on the north side of the road and data point CO-84 was set in this area opposite station 14+00 (Central Pump Station forcemain). The vegetation in the depression was mostly obligate wetland vegetation resulting in the vegetation being 100 percent facultative or wetter. Hydrology indicators of inundation, saturation, oxidized root channels, and FAC-Neutral test were evident. The soil at the point is a wetland as it meets all the criteria for wetlands. The wetland is about 35 feet wide on the west end, 10 feet wide in the east end and is 75 feet long. Data point CO-85 was set at station 13+20 (Central Pump Station forcemain) in the same depression about 70 feet east of data point CO-84. The ground at point CO-85 is about one foot higher than at point CO-84. The vegetation at point CO-85 was 100 percent facultative or wetter and had hydrology indicators of sediment deposits, oxidized root channels, and FAC-Neutral test. The soil at the point had a 3 chroma with mottles and did not match the mapped Leadvale soil profile. The area at the site is not a wetland as it does not meet the criteria for hydric soils in wetlands.

Data point CO-90 opposite station 13+00 (Central Pump Station forcemain) was set in a low pasture about 65 feet south of the gravel road. The point had vegetation that was 100 percent facultative or wetter and exhibited hydrology indicators of sediment deposits, oxidized root channels, and FAC-Neutral test. The soil at the point had a 2 chroma with mottles and the soil profile did not match the profile of the nonhydric Leadvale soil mapped at the point. The area around the point is a wetland as it meets all the criteria for wetlands. The wetland is about 30 feet wide at the point and extends north to the gravel road where it is 15 feet wide. The wetland continues to the southeast. The wetland is bounded on both sides by ground that is 6 inches higher and dominated by bermuda grass. Data point CO-89 was also set on the south side of the gravel road opposite station 11+20 (Central Pump Station forcemain) in a broad flat low about 130 feet east of point CO-90. The vegetation at the point was 100 percent facultative or wetter and had hydrology indicators of sediment deposits oxidized root channels, and FAC-Neutral test. The soil at the point had a 3 chroma with mottles and the soil profile did not

match the profile of the Leadvale soil mapped at the site. The area around the point is not a wetland as it did not meet the hydric soils criteria for wetlands.

Data point CO-86 was set in a narrow low in the pasture on the north side of the gravel road opposite station 9+50 (Central Pump Station forcemain) about 350 feet east of data point CO-85. The vegetation at the point was 75 percent facultative or wetter and had secondary hydrology indicators of oxidized root channels and FAC-Neutral test. The soil at the point had a 4 chroma with mottles but did not match the soil profile of the mapped Leadvale soil. The area at the point is not a wetland as it does not meet the hydric soils criteria for wetlands. This point is similar to the area on both sides of the road for 500 feet to the east except for data point CO-87. This data point opposite station 8+00 (Central Pump Station forcemain) was set in a slight low 250 feet east of data point CO-86. The vegetation at point CO-87 was only 25 percent facultative or wetter and exhibited no hydrology indicators. The soil at the point had a 6 chroma with mottles and the profile matched the soil profile of the mapped nonhydric Leadvale soil. The area at the point is not a wetland as it does not meet any of the criteria for wetlands.

Data point CO-88 opposite station 3+20 (Central Pump Station forcemain) was set on the north side of the gravel road in the lowest part of the grassed swale draining into a stock pond on the south side of the road. The point is about 230 feet west of the fenced compound associated with the existing WWTP to the south. The vegetation at the point was 100 percent facultative or wetter and these were secondary hydrology indicators of oxidized root channels and FAC-Neutral test. The soil at the point had a 3 chroma with mottles and the profile did not match the mapped nonhydric Leadvale soil. The area at the point is not a wetland because it does not meet the hydric soils criteria for wetlands. The stock pond on the south side of the road opposite station 3+00 (Central Pump Station forcemain) is not a "water of the U.S." as there is no "water of the U.S." leaving the pond downstream.

Data point CO-81 describes the alignment down the center of the gravel road form the west corner to the corner of the fenced compound at station 0+90 (Central Pump Station forcemain). The alignment it turns south at station 0+60 (Central Pump Station forcemain). There was no vegetation on the gravel road and the road bed was about 18 inches high and well drained. There were a few scattered puddles in the road. The graveled road is not a wetland as it does not meet the criteria for vegetation and hydrology in wetlands. Data point CO-82 describes the area from the fenced compound south for 320 feet. The vegetation in the reach was only 20 percent facultative or wetter and there were no hydrology indicators. The soil in the reach is mapped Leadvale silt loam, which is not hydric. There are no wetlands in the reach as none of the criteria of wetlands is met.

SUMMARY

There are no wetlands or other "Waters of the U.S." in the proposed wastewater treatment plant site near the Arkansas River. There are a few small scattered wetlands on and near the outfall alignment. They consist of 2 potential farmed wetlands near the alignment between the proposed WWTP and the lift station, 5 wetlands on the alignment, and 5 near the alignment. The wetlands range in size from 0.02 acres up to 0.69 acres. Of these wetlands, there are 2 wetlands on the alignment and 2 near in the Stone Dam Creek area at the east end of the outfall. A summary of the wetlands is in Table 1.

The outfall cross several streams or creeks that are considered "waters of the U.S." they included Tupelo Bayou, 4 crossings of the unnamed east bank tributary to Tupelo Bayou, and 2 crossings of Stone Dam Creek on the east end of the out fall. A summary of the stream crossings is in Table 2.

Any mechanical land cleansing of the ROW or placement of fill material in the wetlands or stream crossings will require authorization by a Department of the Army permit from the Little Rock District Corps of Engineers under Section 404 of the Clean Water Act. The proposed work in wetlands and

stream crossings could be authorized by the Corps under one or more existing nationwide permits on the Corps could require an individual permit for the work requiring the full public interest review process.

Table 1 Summary of Wetlands

Data Point	Location	Description	Comments
CO-2A-09	50' south of center line and 1,950' east of Lollie road.	In soybean field. Possible farmed wetland, 20' wide by 100' long. (0.05 acres)	Not connected to Water of U.S.
CO-1A-09	100' west of center line and 800' north of Donnell Ridge Road	In soybean field. Possbile farmed wetland. 70' wide by 150' long. (0.24 acres)	Not connected to Watr of U.S. Probably isolated , can be avoided.
CO-18-09	STA 30+00, gravity main, 20' north of center line	In woods and in low of old Tupelo Bayou channel.	Wetland a Water of U.S. Can be avoided by shifting center line south.
Dom. by OBL, no data point	STA 43+00, gravity line	In woods adjacent to north edge of old Tupelo Byou channel.	Wetland a Water of U.S. Can be avoided by shifting center line north.
Dom. by OBL, no data point	STA 52+30 to 53+30, gravity line	In edge of pond in old Tupelo Bayou channel.	Wetland a Water of U.S. Can be avoided by shifting center line south.
Dom. by OBL, no data point	STA 53+80 to 54+70, gravity line	Wetlands in old Tupelo Bayou channel. Upstream and downstream of existing farm road fill.	Wetlands are Water of U.S. Can be avoided with center line in existing farm road fill
Dom. by OBL, no data point	STA 118+60, gravity line	Wetland in low flooded area adjacent to unnamed left bank tributary to Tupelo Bayou. (0.02 acres)	Wetland is Water of U.S. Can be avoided.
CO-46-09 CO-47-09 CO-48-09	STA144+00 STA146+50 STA148+00	Wetland in low wooded, flooded area adjacent to unnamed left bank tributary to Tupelo Bayou. (0.69 acres)	Wetland is Water of U.S. Can be avoided by shifting center line north, not avoided impact is 600' by 50'
CO-77-09	STA 19+20, gravity line	Wetland in low open pasture and is 30' wide at center line	Wetland is adjacent to Stone Dam Creek and cannot be avoided because of its length. Impact 30' by 35" long. (0.02 acres)
CO-84-09	STA 14+00, gravity line	In low pasture on north side of east/west gravel road. (0.04 acres)	Not connected to Stone Dam Creek. Therefore isolated. Can be avoided with center line down center of gravel road.
CO-90-09	STA 13+00, gravity line	In low pasture on south side of gravel road and is 20' south center line.	Wetland is adjacent to Stone Dam Creek and can be avoided.

Table 2 Summary of Stream Crossings											
			Soils		Vegetation						
Station	Description	Name	Bed	Bank	Bed	Bank	OHWM	Width	DA	Class	Impacts
11+50, gravity line	North Bank Tributary to AR River	Tucker Creek	Clay	Clay	None	Red Maple & Sugar Berry	Yes	40'	N/A	Intermittent	40' x 35'
94.50, gravity line	North Bank Tributary to unnamed east bank tributary to Tupelo Bayou	Unnamed	Silty Clay	Silty Clay	Same as data point CO-32-09	Same as data point CO-32-09	No	4'	≈ 4 ac	Ephemeral	None
119+00, gravity line	North bank tributary to unnamed east bank tibutary to Tupelo Bayou	Unnamed	Sandy, Silty, Clay	Sandy, Silty, Clay	Rock Elm	Rock Elm	No	2'	≈ '20 ac	Ephemeral	None
119+25, gravity line	Unnamed tributary	Unnamed	Silty Clay	Silty Clay	smartweed, nettle	smartweed, nettle, winged elm, mint, red oak, privet	Yes	8'		Intermittent to Perennial	8' x 35'
151+80 gravity line	Unnamed tributary	Unnamed	Silty Clay	Silty Clay	None	smartweed, nettle, privet, buttonbush, willow oak	Yes	11'		Perennial	6' x 35'
152+80 gravity line	Unnamed tributary	Unnamed	Silty Clay	Silty Clay	None	smartweed, nettle, privet, buttonbush, willow oak	Yes	11'		Perennial	6' x 35'
174+60 gravity line	Unnamed tributary	Unnamed	Silty Clay	Silty Clay	None	privet, willow oak, eastern redcedar	Yes	10'		Perennial	15' x 35'
186+00, gravity line	Unnamed east bank tributary to Tupelo Bayou	Unnamed	Gravel	Sandy silt	None	Same as data point CO-32-09	Yes	6'	N/A	Ephemeral	6' x 35'
23+50, Central PS forcemain	South bank tributary to Stone Dam Creek	Unnamed	Silty Clay	Silty Clay	Carex sp., sm rt. weed, com. Privet, Ranuculus sp.	Carex sp., smartweed, com. Privet, Ranuculus sp.	No	1'	N/A	Ephemeral	None
16+20, Central PS forcemain	West bank tributary to Lake Conway	Stone Dam Creek	Rocky, sandy, gravel	Silty, Clay	None	Same as data point CO-79-09	Yes	30'	N/A	Intermittent	30' x 35'



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CERTIFICATE OF AUTHORIZATION
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No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS
TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
36" FORCE MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-101
SHEET NUMBER

File: I:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-101.dwg Last Save: 10/15/2010 10:13 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebring, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 10:46 AM Plotter used: \\gfyvdc02\Canon IR C4080 PS

CULVERT

PC'S

CO-5

CO-4

SLIGHT DEPRESSION

35+00

40+00

45+00

50+00

55+00

60+00

65+00

66+85

CO-3

LOW

HIGH

CO-2

CO-01

SMALL DEPRESSION

100 50 0 100 200 300

SCALE: 1" = 100'

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA
INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
36" FORCE MAIN

JOB NO.: D8057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-102

SHEET NUMBER

File: L:\2008\D8057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-102.dwg Last Save: 10/14/2010 8:43 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 10:53 AM Plotter used: \\gfyvdc02\Canon iR C4080 PS

GRAVEL ROAD

ACTIVE RICE FIELD

WETLAND BOUNDARY

DONNELL RIDGE ROAD

BEAVER DAM

CO-18

30+00

CO-17

25+00

CO-16

20+00

15+00

CO-15

10+00

OB1

ROAD DITCH

SHORT DITCH

5+00

0+00

DONNELL RIDGE ROAD

FLOW

DEPRESSION WETLAND?
*SEE OTHER DATA.

CO-13

CO-14

OB1

ACTIVE RICE FIELD

CO-12

N

100 50 0 100 200 300

SCALE: 1" = 100'

GARVER

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GARVER-USA INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-103

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-103.dwg Last Save: 10/14/2010 8:46 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebring, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 10:59 AM Plotter used: \\gfyvda02\Canon IR C4080 PS



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CERTIFICATE OF AUTHORIZATION
GARVER-USA INC. No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-104

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-104.dwg Last Save: 10/7/2010 5:03 PM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:23 AM Plotter used: \\gfyvdc02\Canon IR C4080 PS

CO-36
110+00
105+00
CO-35
CO-30
90+00
CO-31
95+00
CO-32
100+00
CO-33
CO-34
85+00
CO-29
USACOE MAY CALL PTS 28 & 29
WETLAND MOVE 100' WEST TO
GET TO UPLAND
CO-28
70+00
CO-25
75+00
CO-26
CO-27
80+00
CO-24

N

100 50 0 100 200 300
SCALE: 1" = 100'

GARVER

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CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-105

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-105.dwg Last Save: 10/8/2010 7:56 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:10 AM Plotter used: \\gfyvdc02\Canon IR C4080 PS

ALL DISTURBED BY
12" BLUE POLY LINE BURIED.

BEGIN BURIED 12"
BLUE POLYLINE

STREAM WAS ROCKY GRAVELLY BED.
NO VEGETATION IN BED.
BANKS SILTY CLAY WITH
RANUCULUS ELEOCHARIS SOFT
RUSH NNSAN OHWM

DEEP HOLE WAS
PROBABLY BURY TANK
15'Dx20'
10'Dx10'

DISTURBED AREA
BY CONTRACTOR

WETLAND

CO-37
CO-38
CO-39
CO-40
CO-41
CO-42
CO-43
CO-44

110+00
115+00
120+00
125+00
130+00
135+00
140+00

DP2
DP3
DP4
OXBOW

WETLAND
PEM

STREAM CROSSING
OHW=8'Wx6'-8"D
*AQUATIC VEG.
*PERENNIAL
*SMARTWEED
*NEATTLE SPP.
*C. pRIVET
*BOTTLE BRUST SEDGE
*WINGED ELM
*R. OAK
*MINT SPP.

OLD MILITARY ROAD

N

100 50 0 100 200 300

SCALE: 1" = 100'

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA
INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS
TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

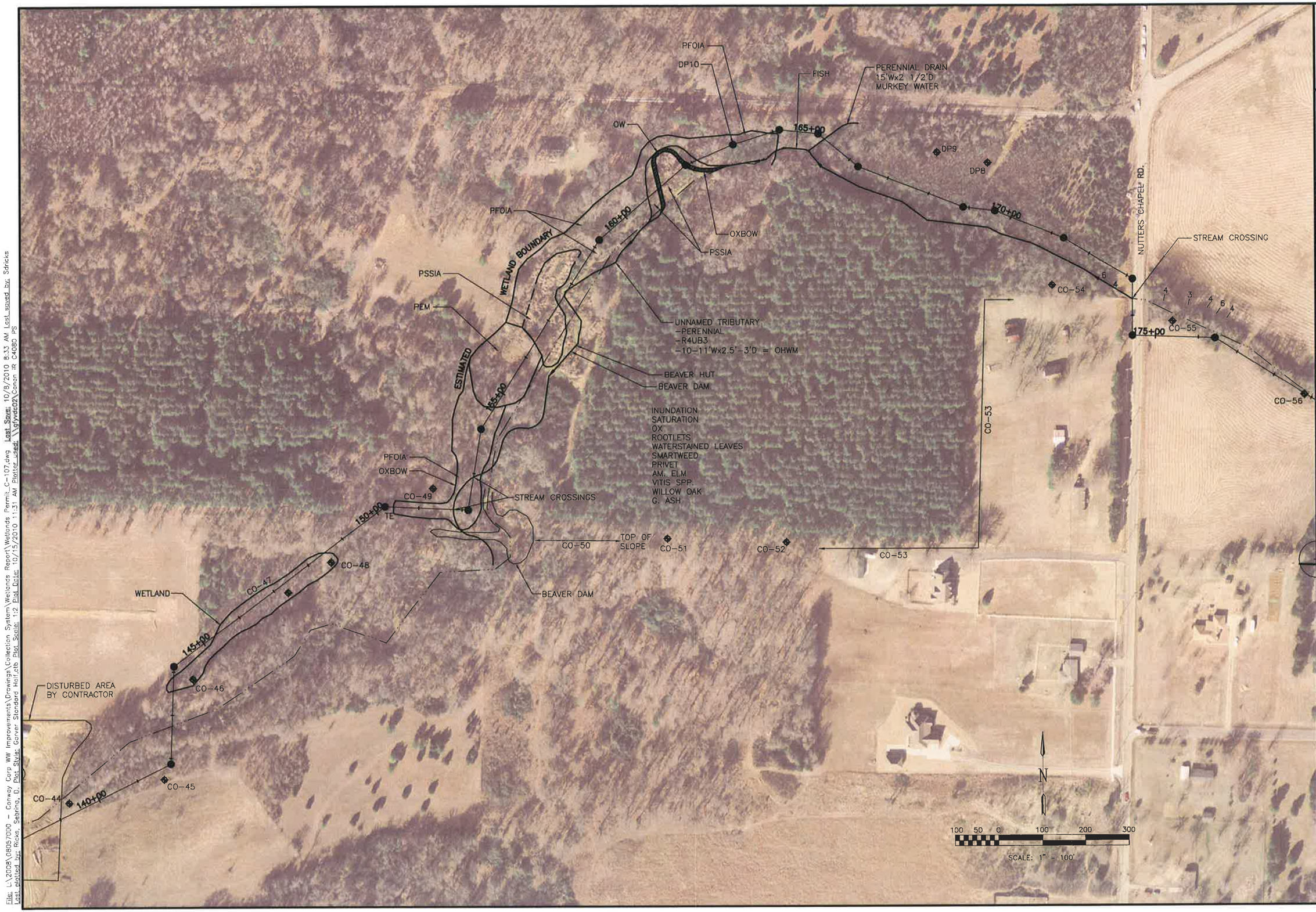
JOB NO.: D8057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-106

SHEET NUMBER

File: L:\2008\D8057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-106.dwg Last Save: 10/14/2010 8:53 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:25 AM Plotter used: \\gfyvdc02\Canon iR C4080 PS



GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA, INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS
TUPELO BAYOU WWTP IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-107

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-107.dwg Last Save: 10/8/2010 8:33 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebring, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:31 AM Plotter used: \\gfyvde02\Canon IR C4080 PS

STREAM CROSSING

CO-55

CO-56

180+00

CO-57

CREEK INTERMITTENT
OHWM=6'Wx4'-8"D
SHALE SUBSTRATE
NOFLOW-POOL (DS)
SMILAX
CEDAR
POISON IVY
SMARTWEED
PRIVET
WILLOW OAK

CO-58

CO-59

NON-WETLAND
MINT SPP.
WILLOW OAK
10-15'W SWALE
AM. ELM

2' WIDE DUG DITCH

POND DAM
ABOUT 50'
FROM T.P.

POND

BERM

DP1

WET SWALE
WILLOW OAK
PRIVET
WINGED ELM

185+00

190+00

195+00

195+12

FAVRE LANE

SALEM ROAD

YORK LANE

N

100 50 0 100 200 300

SCALE: 1" = 100'

GARVER

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REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
DONNELL RIDGE
48" GRAVITY MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-108

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-108.dwg Last Save: 10/14/2010 8:57 AM Last saved by: Schricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:35 AM Plotter used: \\gfyvdc02\Canon iR C4080 PS



GARVER

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No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
CENTRAL
36" FORCE MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY: XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-109

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-109.dwg Last Saved: 10/8/2010 8:56 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 1:41 AM Plotter used: \\gfyvds02\Canon iR C4080 PS

CO-69
CO-70
CO-71
CO-72
CO-73
CO-74
CO-75
CORNER OF HOUSE 10' FROM DITCH
LOW DEPRESSION
FAVRE LANE
35+00
40+00
45+00
50+00
55+00
60+00
GREENWOOD CIRCLE
PYRAMID DRIVE
ARDEN LANE
HATHAWAY DRIVE
SAGEGRASS ROAD
S DONAGHEY AVENUE
100 50 0 100 200 300
SCALE: 1" = 100'
N

GARVER

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GARVER-USA INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
CENTRAL
36" FORCE MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-110
SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-110.dwg Last Save: 10/8/2010 9:02 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:43 AM Plotter used: \\gfyvdc02\Canon IR C4080 PS

APPLE BLOSSOM LANE

MORNING GLORY LANE

65+00

70+00

FAVRE LANE

FAVRE LANE

75+00

80+00

FAVRE LANE

85+00

90+00

S DONAGHEY AVENUE

N

100 50 0 100 200 300

SCALE: 1" = 100'

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP IMPROVEMENTS

WETLANDS STUDY
CENTRAL
36" FORCE MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-111
SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-111.dwg Last Save: 10/15/2010 11:51 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/18/2010 8:50 AM Plotter used: \\gfyvdc02\Canon iR C4080 PS

GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
CENTRAL
36" FORCE MAIN

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY: XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-112

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-112.dwg Last Save: 10/8/2010 9:16 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:46 AM Plotter used: \\gfyvdc02\Canon iR C4080 PS



GARVER

CERTIFICATE OF AUTHORIZATION
GARVER-USA INC.
No. 23
ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, ARKANSAS

TUPELO BAYOU WWTP
IMPROVEMENTS

WETLANDS STUDY
WWTP OUTFALL

JOB NO.: 08057000
DATE: SEPT., 2010
DESIGNED BY:XXX
DRAWN BY: XXX

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
C-113

SHEET NUMBER

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Wetlands Report\Wetlands Permit_C-113.dwg Last Saved: 10/12/2010 8:21 AM Last saved by: Sdricks
Last plotted by: Ricks, Sabrina, D. Plot Style: Garver Standard Half.ctb Plot Scale: 1:2 Plot Date: 10/15/2010 11:56 AM Plotter used: \\Gfyvdc02\Canon IR C4080 PS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: N R HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-1-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE		
2. SOYBEAN STUBBLE	HL	FACU
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: SITE HAS JUST BEEN DISCED + SUBSOILED

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: NONE _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- NONE ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PIT IS IN A SMALL DEPRESSION IN NE CORNER

CO-1-09

SOILS

Map Unit Name (Series and Phase): ROXANA VERY FINE SANDY LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		7.5 YR 4/4	NONE		SANDY SILT
8-12		10 YR 6/3	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes ~~No~~
Hydric Soils Present? Yes ~~No~~

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 200' SOUTH NORTH (E-W) FIELD EDGE AND 220' WEST OF NS CO. RD.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL NEW ALIGNMENT LIFT STA TO STP SITE Applicant/Owner: _____ Investigator: W R HENSON	Date: 10/1/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CD-1A-DP

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SAQB+V	
2. SOYBEANS	HL	FACU
3. COFFEE BEAN	HL	FACW
4. PIGWEED	HL	FACU
5. GROUND CHERRY	HL	FACU
6. POOR JOE	HL	FACU
7. CAREX SP	HL	FAC-to OBL
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/6 33% ~~50%~~

Remarks: PT IS IN LOW WITH WATER PUDDLE IN SOYBEAN FIELD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NONE	_____(in.)
Depth to Free Water in Pit:		_____(in.)
Depth to Saturated Soil:		_____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT. IN SLIGHT DEPR. WATER PUDDLE TO DRAIN SOUTH

CO-1A-03

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (29) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	~~A~~	10YR 3/2	NONE		CLAY
3-6		10YR 3/1	11		CLAY FEW OLD ORG. CH
6-9		10YR 4/1	11		CLAY
9-12		10YR 4/1	DARK ORANGE TO DARK BROWN	FEW FAINT	CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ~~Yes~~ (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) ~~Yes~~ (No)

Remarks: PT IS IN LOW 100' WEST OF N-S FIELD ROAD AND 600' NORTH PAVED RD. CORNER

LOW IS 70' WIDE X 150' LONG

LOW IS AN ~~PARTIAL WETLAND~~ UPLAND BUT COULD BE CALLED A FARMED WETLAND AS VEG IS MANIPULATED ANNUALLY BUT SITE MEETS HYD. CRITERIA AND HAS HYDRIC SOILS

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-2-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB+V	
2. VOLUNTEER WHEAT	HL	FACU
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: PT IS IN SLIGHT LOW IN FIELD THAT WAS IN CORN LAST YEAR, DISCED AFTER HARVEST, AND WHEAT SOWN

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: THERE IS A 15' HIGH DROP OFF JUST EAST OF SITE AND INTO A SLIGHT LOW WHERE PT IS.

CO-2-09

SOILS

Map Unit Name (Series and Phase): ROXANA VERY FINE SANDY LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		10YR 4/3	NONE		SANDY SILT
3-12		5YR 4/4	NONE		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS IN CULTIVATED FIELD, ~~NO~~ 100' EAST OF LEVEE AND 150' SSE OF CORNER OF LOW FIELD, CORN RESIDUE ALL OVER. NO EVIDENCE OF PONDING OR WETLAND VEG.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL NEW ALIGNMENT LIFT STA TO STP SITE	Date: 10/1/09
Applicant/Owner:	County: FAU
Investigator: WR HENSON	State: AR
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-2A-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHAB+V	
2. SOYBEANS	HL	FACU
3. CAREX SP	HL	FAC to OBL
4. BARNYARD GR	HL	FAC W-
5. PIGWEED	HL	FAC U
6. POOR JOE	HL	FAC U
7. GROUND CHERRY	HL	FACU
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/3 33% ~~50%~~

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: (in.)

Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN BOTTOM OF WIDE SHALLOW SOUTH SIDE RD PITCH PLANTED IN SOYBEANS

CO-ZA-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (ZA) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		10YR 3/2	NONE		CLAY
3-5		10YR 3/1	11		FEW FAINT DK.RT. CH CLAY
5-9		10YR 4/1	11		CLAY
9-12		10YR 4/1	11		CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ~~Yes~~ (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: PT IS 50' SOUTH OF GRAVEL RD IN BOTTOM OF WIDE SHALLOW DITCH AND 600' WEST ~~OF~~ NE CORNER

AOW IS 20' WIDE BY 100' LONG

LON IS AN ~~FARMED WETLAND~~ UPLAND BUT COULD BE CALLED A FARMED WETLAND AS VEG IS MANIPULATED ANNUALLY BUT SITE MEETS HYD. CRITERIA AND HAS HYDRIC SOILS

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/22/03 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-3-03

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB	+V
2. YOUNG WHEAT	HL	FACU
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: PT IS IN FIELD PLANTED IN CORN LAST YEAR, HARVESTED, DISCED AND SOWN IN WHEAT, CORN STUBLE EVERYWHERE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)
Depth to Free Water in Pit: NONE _____(in.)
Depth to Saturated Soil: NONE _____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW AT TOE OF HIGH DROP OFF TO EAST

CO-3-09

SOILS

Map Unit Name (Series and Phase): ROXANA VERY FINE SANDY LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		7.5YR 4/3	NONE		SANDY SILT
3-11		7.5YR 5/4	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 150' NW OF SINGLE 36" PECAN TREE

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/22/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CD-4-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	DS, US, SA	QB+V
2. OCCASIONAL		
3. RANUCULUS SP	HL	FACW-OBL
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN LOWEST PART OF FIELD
IF SOWN WHEAT HAS DISAPPEARED. YOUNG WHEAT IS GROWING ON SLIGHTLY HIGHER GROUND 30' EAST, 30' NORTH AND 60' TO NEST OF PT.
CORN STUBBLE ALL OVER GROUND

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)

Depth to Free Water in Pit: NONE ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT DEPRESSION IN THE SE CORNER OF THE FIELD. THERE IS A WATER FILLED RADITCH 70' SOUTH OF PT AND MANY TRACTOR RUTS BETWEEN PT AND THE DITCH.

CO-4-09

SOILS

Map Unit Name (Series and Phase): GALLION SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2	NONE		SILTY CLAY
2-12		7.5YR 4/2	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN LOWEST AREA IN THE FIELD. PT IS 100' NORTH OF (R-W) GRAVELED SAND PLANT RD AND 250' WEST OF E OF COUNTY RD.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-5-09

STA 95+00 TO 44+00 EAST SIDE OF COUNTY RD.

NOTE: CONWAY NRCS SAID THIS PORTION IS IN PC'S.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. YOUNG WHEAT	UL	FACU	9.		
2. CORN STUBLE (NEAR END)	UL	FACU	10.		
3.			11.		
4. CORN STUBLE TO THE	NL	FACU	12.		
5. SOUTH CORNER			13.		
6.			14.		
7. NONE OS,JS SHRUB+V			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks:

HYDROLOGY

DATA AT STA 69+00

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ____(in.)
Depth to Free Water in Pit: ____(in.)
Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
NONE
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS AT LOWEST POINT IN PC FIELD

CO-5-09

SOILS

Map Unit Name (Series and Phase): ROXANA VERY FINE SANDY LOAM (NORTH END) GALLION SILT LOAM (SOUTH END) AT THIS PT.

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		7.5YR 4/2	NONE		SILTY, CLAYEY SAND
2-11		7.5YR 4/3	"		" " "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)
ON EAST SIDE OF COUNTY RD

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT RUNS FROM STA 95+00 TO 44+00 WHERE CONWAY NRCS SAID THIS PORTION WAS PC. THE HYD + SOILS DATA WERE TAKEN AT STA 69+00 WHICH CONFIRMS PC'S FOR THIS PORTION OF THE ALIGNMENT

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-6-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB	+V
2. YOUNG WHEAT	HL	FACU
3. SOYBEAN STUBLE	HL	FACU
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: PT IS IN CULTIVATED FIELD, SOY BEANS LAST YEAR NOW WHEAT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: NONE _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- NONE ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN VERY SMALL SLIGHT LOW IN CORNER OF FIELD

CD-6-09

SOILS

Map Unit Name (Series and Phase): GALLION SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		7.5YR 4/3	NONE		SANDY SILT

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: PT IS 35' SOUTH TELEPHONE POLE AND 120' EAST OF THE ℄ OF N-S COUNTY RD.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

AT STA 43+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-7-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE DS, US, SHRB & V		
2. SOYBEAN STUBLE	HL	FACU
3. CRAB GRASS	HL	UPL
4. COFFEE BEAN	HL	FACW
5. PIG WEED	HL	FACU+
6. YOUNG WHEAT (DOM)	HL	FACU
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 20%

Remarks: PT IS IN CULTIVATED FIELD. WAS IN SOYBEANS LAST SUMMARY NOW DRILLED IN WHEAT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN ABOUT A 30'X30' LOW IN NORTH EDGE OF FIELD SOME 3" DEEP RUTS IN ~~ALL~~ LOW

CO-7-09

SOILS

Map Unit Name (Series and Phase): MORELAND SILTY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		7.5YR 3/2	NONE		SILTY CLAY
2-11		7.5YR 4/2	"		CLAYEY SILT

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS 35' SSW OF TELEPHONE POLE ABOUT STA 35+00

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL	Date: 1/22/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-B-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS	
2. SWT PECAN	US	FAC+
3. SWT PECAN	SHRB	FAC+
4. GREEN BRIER	V	FAC
5. LADIESEAM GRASS	V	FACW
6. HONEYSUCKLE	V	FAC-
7. ASTER SP EMERGING	HL	FAC-
8. GIANT RAGWEED (DOM)	HL	FAC
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/7 71%

Remarks: PT IS IN OVER GROWN AREA (SLIGHT LOW) 20' EAST OF EDGE OF WHEAT FIELD TO WEST

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)

Depth to Free Water in Pit: ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN A SLIGHT LOW FORMED BY SPOIL PILE FROM DITCH 50' TO EAST AND FIELD WEST SLOPING IN THE PT.

CO-8-09

SOILS

Map Unit Name (Series and Phase): MORELAND SILTY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		7.5YR 3/2	NONE		SANDY SILTY CLAY
2-7		7.5YR 4/2	"		" " "
7-11		7.5YR 4/3	"		" " "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 60' SOUTH PT CO-9-09 AND 45' WEST OF E N-S OLD DUG DITCH

POINT NOT ON FINAL ALIGNMENT

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-9-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB + V	
2. SMART WEED	HL	FACW TO OBL
3. CAREX SP	HL	FAC TO OBL
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN BOTTOM OF OLD DUG DITCH WATER AND NO VEG IN BOTTOM 10' SE OF PT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: DWNSTRM OF PT DITCH IS WATER FILLED WITH NO VEG IN BOTTOM. NO RECENT MAINTENANCE AT PT. BOTTOM OF DITCH AT THE PT IS ABOUT 6' HIGHER THAN THE WATER LEVEL IN THE DITCH

DITCH DRAINS TO SE

CO-9-09

SOILS

Map Unit Name (Series and Phase): MORELAND SILTY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		7.5YR 4/2	NONE		MANY CLAY OM RT CH
2-5		7.5YR 4/2	"		SILTY CLAY
5-8		7.5YR 4/3	"		" "
8-10		7.5YR 4/2	"		" "
10-11		7.5YR 4/3	"		SILTY SAND

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: PT IS 35' SOUTH ℄ E-W COUNTY ROAD. PT IS ON WEST TOP BANK OF DITCH.
A 12" STEEL EXPOSED ~~(E-W)~~ IRRIGATION PIPE 10' N OF PT
ABOUT 70' DNSTRM OF PT WATER IS ABOUT 8" DEEP IN DITCH, ~~CREEK~~ DITCH IS ABOUT 8' WIDE, IT HAS AN OHWM BUT MAY NOT BE CONNECTED TO A "WATERS OF THE U.S." NO VEG IN BED, VEG ON BANKS AS DESCRIBE ON THIS FORM. SILTY CLAY BED+BANKS

PT IS ABOUT STA 33+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL	Date: 1/22/03
Applicant/Owner:	County: FAU
Investigator: WR HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-10-DS
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. SWT PECAN	OS	FAC+
2. SUGAR BERRY	OS	FACW
3. SUGAR BERRY	US	FACW
4. H.L. DOGWOOD	SHRB	FAC
5. BOX ELDER	SHRB	FACW
6. RIVER CANE	SHRB	FACW
7. ALA SUPL JACK	V	FACW
8. HONEYSUCKLE	V	FAC-
9. P. IVY	V	
10. GIANT RAGWEED	HC	
11. GOLDEN ROD	HL	
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/8 87.5%

Remarks: PT IS IN LOW EAST OF DITCH SPOIL PILE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ____(in.)
Depth to Free Water in Pit: ____(in.)
Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS IN LOW ON EAST SIDE OF SPOIL PILE. GROUND ELEV. RISES EAST OF PT.

CO-1D-09

SOILS

Map Unit Name (Series and Phase): MORRLAND SILTY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		7.5YR 3/2	NONE		CLAY
1-12		7.5YR 4/2	"		"
					FEW SMALL PIECES OF BURNT WOOD AT 9-12

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 40' EAST & N-S DITCH AND 70' SOUTH & E-W COUNTY RD

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-11-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OBS. VS. SHRB+V		
2. FRN RANUNCULUS SP	HL	FACW to OBL
3. FRN RYE GRASS	HL	FACU
4. SOYBEAN STUBLE	HL	FACU
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: PT IS IN A LOW IN NW CORNER OF CULTIVATED FIELD, FIELD PLANTED IN SOYBEANS LAST YEAR, HAS BEEN DISCED IN FALL, NOTHING PLANTED NOW.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW. PROBABLY MADE BY FARM EQUIPMENT TURNING IN CORNER

CO-11-09

SOILS

Map Unit Name (Series and Phase): MORELAND SILTY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8		7.5YR 4/2	NONE		SILTY CLAY
8-11		7.5YR 4/3	NONE		11 11

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 50' SSW OF TELEPHONE POLE AND BUOY EAST
WEST END OF FIELD
ABOUT STA 27+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

POINT NOT ON FINAL ALIGNMENT

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W R HENSON	Date: 1/22/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-1/2-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB + V	
2. YOUNG WHEAT	HL	FACU
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: MOST OF YOUNG WHEAT HAS DISAPPEARED IN LOW NOT A GOOD STAND

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)

Depth to Free Water in Pit: NONE _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN AN ELONGATED LOW SLIGHT 10'W x 30'L.

CO-12-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		7.5YR 3/2	NONE		CLAY
1-3		7.5YR 4/1	"		CLAY FEW FAINT DK.RT.CH
3-7		10YR 3/1	"		CLAY FEW FAINT DK.RTCH
7-11		10YR 3/2	"		CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 30' EAST TELEPHONE POLE AND ABOUT 400' FROM EITHER NOR-S CORNER

PT AT STA 13+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/22/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-13-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. SUGAR BERRY	OS	FACW	9.		
2. GREEN ASH	OS	FACW	10.		
3. SUGAR BERRY	US	FACW	11.		
4. RED CEDAR	US	FACU	12.		
5. SUGAR BERRY	SHRB	FACW	13.		
6. ALA SUPL JACK	V	FACW	14.		
7. P. IVY	V	FAC	15.		
8. NONE	UL		16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/7 86%

Remarks: PT IS IN PATCH OF WOODS, HIGHER PARTS ARE DOMINATED BY RED CEDAR

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)
Depth to Free Water in Pit: _____(in.)
Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: ~~Obs~~ PT IN LOW IN WOODS, SOME SLOPE TO DITCH 70' TO EAST

CO-13-09

SOILS

Map Unit Name (Series and Phase): PERAY clay (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		CLAY
1-6		10YR 3/1	"		"
6-12		10YR 4/2	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS IN WOODS IN LOW. SOUTH EDGE WOODS 50' SOUTH, WEST EDGE OF WOODS 160' WEST, & E-W COUNTY RD 200' TO NORTH

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W. R. HENSON	Date: 1/23/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-1A-DS

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OS	VS,SHRB+V	
2. YOUNG WHEAT	HL	FACU
3. RANUCULUS SP	HL	FAC TO OBL
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: PT IS IN CULTIVATED FIELD. NOW PLANTED IN WHEAT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW NEXT TO TOE OF LEVEE. SOIL PIPE TO EAST

CO-14-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	~~NONE CLAY~~		CLAY
1-5		10YR 4/2	"		" REMAINS DYRTCH
5-11		10YR 3/1	"		CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: PT IS 60' WEST SW OF TELEPHONE POLE AND 100' SOUTH WOODS LINE

Approved by HQUSACE 2/92

OHWM TUCKER CR OR TUPELO BAYOU

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: _____ Applicant/Owner: _____ Investigator: _____	Date: 1/22/09 County: _____ State: _____
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:



SAME AS BOTH SIDES

NO VEG IN BED RED MAPLE + SUGAR BERRY START 1' ABOVE THE WATER

CLAY SOILS IN BED + BANKS

SOILS

Map Unit Name
(Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/23/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-15-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. RED CEDAR	OS	FACU
2. NONE	US SHRB	
3. GREENBRIER	V	FAC
4. RANUCULUS SP	HL	FAC+, OBL
5. RYE GRASS	HL	FACU
6. BARNYARD GRASS	HL	FACW-
7. WHEAT GRASS	HL	FACU
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/6 50%

Remarks:
PT IS IS SOUTH OF EDGE OF WOODS
FIELD TO WEST IS HIGH, FLAT, AND WITH SOYBEAN STUBLE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)
Depth to Free Water in Pit: _____(in.)
Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW BETWEEN TOE OF FIELD TO SOUTH AND EDGE OF WOODS TO NORTH

CO-15-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 3/2	NONE		CLAY
2-11		7.5YR 4/2	11		11

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 15' SOUTH OF EDGE OF WOODS AND 10' NORTH OF TOE OF FILL. AND ABOUT 450' EAST OF WEST EDGE OF FIELD ABOUT STA 7+50
AB FOR 120' NORTH IS WOODS DOMINATED BY REDCEDAR AND AN ABRUPT DROP ABOUT 4-5' INTO A WETLAND DOM. BY CYPRESS + SMARTWEED
NO POINTS SET DOM + BY OBLIGATES

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/23/09
Applicant/Owner:	County: FAU
Investigator: W. R. HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: CO-16-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. RED CEDAR (DOM.)	OS	FACU	9.		
2. RED CEDAR (DOM)	US	FACU	10.		
3. RED CEDAR	SHRB	FACU	11.		
4. SUMAC BERRY	11	FACW	12.		
5. HONEYSUCKLE	V	FAC-	13.		
6. HONEY LOCUST (1)	OS	FAC-	14.		
7. GREEN ASH (1)	OS	FACW	15.		
8. ALA SUPL JACK	V	FACW	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/8 37.5%

Remarks: PT IS IN WOODS ABOUT 20'

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: NONE (in.)
Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test NO
___ Other (Explain in Remarks)

Remarks: PT IS IN VERY FLAT AREA

CO-16-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		CLAY
1-6		7.5YR 4/2	"		CLAY FEW VERY FAINT DK RICH
6-11		7.5YR 3/2	"		CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 20' WEST OF EAST EDGE OF WOODS AND 30' WEST OF EAST DROP UP FIELD EDGE AND 120' SOUTH OF NW FIELD CORNER AT 150' NORTH OF PT IS SAME WETLAND NORTH OF PT CO-15. WETLAND DOM, BY OBLIGATES NO DATA PT SET.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 1/23/09 County: FAU State: AR
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-17-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. SUGAR BERRY	OS	FACW	9. CAREX SP	HL	
2. GREEN ASH	OS	FACW	10.		
3. AM ELM	VS	FACW	11.		
4. GREEN ASH	SHRB	FACW	12.		
5. RED CEDAR	SHRB	FACU	13.		
6. HONEYSUCKLE (DOM. THICK)	V	FAC-	14.		
7. ALA SUPL JACK	V	FACW	15.		
8. HONEYSUCKLE (DOM. THICK)	HL	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 62.5 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Free Water in Pit:	11	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS ON LOW OVER BANK NEXT BEAVER INDUCED WETLAND ON DOWNSTREAM

CO-17-09

SOILS

Map Unit Name (Series and Phase): PEORY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 3/2	NONE		SILTY CLAY
2-6		7.5YR 4/1	"		CLAY
6-12		7.5YR 4/2	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 50' NORTH OF TOE OF FIELD TO SOUTH
WETLAND BOUNDARY IS 20' TO NE WHERE HONEYSUCKLE DOM. ENDS
AND 60' TO NW WHERE GROUNDSLOPES OFF

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/23/09
Applicant/Owner:	County: FAV
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-18-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OBS, VS, +V		
2. BUTTON BUSH	SHRB	OBL
3. YOUNG SUGAR BERRY	SHRB	FACW
4. GREEN BRIER	✓	FAC
5. CAREX SP	HL	FAC to OBL
6. SMART WEED	HL	FACW to OBL
7. HIBISCUS	HL	OBL
8. DEAD OR DYING CEDARS ON EDGE		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN END OF SIDE CHANNEL TO SOUTH

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN THE SOUTH END OF A SIDE CHANNEL OFF THE WETLAND TO THE NORTH,

CO-1B-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 2/2	NONE		CLAY SOME ORGANICS
1-4		10YR 3/2	11		CLAY FEW FAINT OX RTCH
4-11		7.5YR 4/2	LIGHT ORANGE	FEW FAINT	CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: CONSIDERING INUNDATION BY BEAVERS AND DEAD TREES IN THE WETLAND, BEAVE PONDING IS NORMAL CIRCUMSTANCES. THE SOILS ARE HYDRIC FROM LONG TERM INUNDATION.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ~~Yes~~ No (Circle)
Wetland Hydrology Present? ~~Yes~~ No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: PT IS 100' WEST OF EAST EDGE OF WOODS AND 130' NORTH OF SOUTH EDGE OF WOODS, PT IS NEAR STA 21+50
RED CEDAR DOMINATES ON THE HIGHER GROUND EAST, SOUTH AND WEST OF THE POND.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R HENSON	Date: 1/23/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-19-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OS, US, SHRB-V		
2. SOYBEAN STUBLE	HL	FACU
3. RANUCULUS SP	HL	FAC TO OBL
4. RYE GRASS	HL	FACU
5.		
6.		
7. RED CEDAR (DOM) IN FENCE LINE		
8. 40' TO EAST		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 33%

Remarks: PT IS ABOUT 40' OUT IN FIELD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: (in.)
Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test NO
___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW IN FIELD

CO-19-09

SOILS

Map Unit Name (Series and Phase): PERAY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		CLAY
1-8		7.5YR 4/2	"		"
8-11		7.5YR 4/2	LIGHT ORANGE	FEW VERY FAINT	CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 40' WEST OF FENCE CORNER IN FIELD PLANTED IN SOYBEANS LAST YEAR
ABOUT STA 2745

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/23/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-20-09
(If needed, explain on reverse.)	

STA 28+00 TO STA 34+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRUB	
2. FESCUE (DOM)	HL	FAC-
3. HONEY LOCUST	SHAB	FAC-
4.		
5.		
6. RED CEDAR DOM IN FENCEROW		
7. 20' TO SOUTH AND PARALLEL		
8. TO ALIGNMENT		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks: PT. IS IN FESCUE IMPROVED PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)

Depth to Free Water in Pit: ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS ON HIGH FLAT

CO-20-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
	NO PIT DUG AREA DOM BY UPLAND SPECIES				

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS ALIGNMENT FROM STA 28+00 TO STA 34+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HEUSON	Date: 1/23/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-2/-09

STA 34+50 TO 43+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB, V	
2. YOUNG WHEAT	HL	FACU
3. FESCUE 15'-20'	HL	FAC-
4. EAST OF FENCE LINE		
5.		
6. RED CEDAR,	DOM. IN FENCE ROW	FACU
7. ROCK ELM		FAC
8. HONEY LOCUST,		FAC-
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 20%

Remarks: SITE HAS BEEN DISCED AND SOWN IN WHEAT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ____(in.)
Depth to Free Water in Pit: NONE ____(in.)
Depth to Saturated Soil: NONE ____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: THIS REACH IS WELL SLOPED AND DRAINED

CO-21-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 34+50 TO 43+00
REACH IS ENTIRELY IN A CULTIVATED FIELD

REACH FROM STA 43+00 TO STA 45+50 NEEDS TO BE MOVED SOUTH OUT OF "WATER OF U.S." OR PERMIT ~~AM~~ REQUIRED.
IF MOVED SOUTH DESCRIPTION FOR STA 34+50 TO 43+00 APPLIES FOR STA 43+00 TO STA 34+50.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 1/23/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-22-09

STA 46+50 TO STA 49+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB+V	
2. YOUNG WHEAT	HL	FACU
3.		
4. WAS SOYBEANS +	HL	FACU
5. JOHNSON GRASS	HL	FACU
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: PT IS IN A HIGH WELL SLOPED CULTIVATED FIELD. WAS SOYBEANS IN SUMMER, NONDISCED AND SOWED IN WHEAT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)
Depth to Free Water in Pit: ___(in.)
Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: SEE VEG. NOTE

CO-22-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO	PIT	DUG	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS REACH STA 46+50 TO STA 49+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/23/09
Applicant/Owner:	County: FAU
Investigator: WR HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-23-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. SUGAR BERRY	OS	FACW
3. RED CEDAR	OS	FACU
4. SUGAR BERRY	VS	FACW
5. RED CEDAR	VS	FACU
6. SUGAR BERRY	SHRB	FACW
7. RED CEDAR	SHRB	FACU
8. HONEYSUCKLE	V	FAC-
9. FESCUE	HL	FAC-
10. KNOTROOT FOXTAIL	HL	FAC
11. RANUNCULUS SP	HL	FAC TO OBL
12. YOUNG WHEAT	HL	FACU
13. COMM RAGWEED	HL	FACU
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/13 46%

Remarks: PT IS IN EDGE OF DISCED AND SOWED WHEAT FIELD
A CLEARING PILE AND TREE LINE IS JUST 15' NORTH OF PT.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)
Depth to Free Water in Pit: ___(in.)
Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IN EDGE OF FIELD AT TOE OF HIGH IN FIELD. A WOODED FLAT IN NORTH OF PT FOR 100', THEN A NE-W GRAVEL RD WITH SIDE DITCHES

CO-23-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 3/2	NONE		SILTY CLAY
2-11		7.5YR 4/2	"		CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ABOUT STA 49+50

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/23/03 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-24-03

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW	9. RANUNCULUS SP	HL	FAC TO OBL
2. RED CEDAR	OS	FACU	10. COM, RAGWEED	HL	FACU
3. ROCK ELM	US	FAC	11. RYE GRASS	HL	FACU
4. RED CEDAR	US	FACU	12. WHEAT GRASS	HL	FACU
5. RED CEDAR	SHRB	FACU	13.		
6. ROCK ELM	SHRB	FAC	14.		
7. HONEYSUCKLE	V	FAC-	15.		
8. FESCUE	HL	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/12 25 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)

Depth to Free Water in Pit: NONE _____(in.)

Depth to Saturated Soil: NONE _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN NORTH EDGE OF WHEAT FIELD. GROUND SLOPES INTO THE WOODS FOR 50' THEN SOUTH E-W GRAVEL RD DITCH

CO-24-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY (HYDRIC) ~~ROTAMD VERY FINE SANDY LOAM~~

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		CLAY
1-12		7.5YR 3/2	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN NE CORNER OF WHEAT FIELD AT ABOUT STA 59+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/28/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? Yes No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID: CO-25-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. RED CEDAR	OS	FACU-
2. RED CEDAR	US	FACU-
3. RED CEDAR	SHRB	FACU-
4. NONE	V	
5. BERMUDA GRS	HL	FACU
6. WHITE CLOVER	HL	FACU
7. FESCUE	HL	FAC-
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: PT IS IN EDGE OF IMPROVED PASTURE NEXT TO AN E-W WOODS LINE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 1 (in.)
Depth to Free Water in Pit: ? ___ (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)
RUN OFF IN

Remarks: NOTE 1"+ RAINFALL LAST NIGHT. SHALLOW DRAINTS FLOWING EAST PAST POINT. WAIT A COUPLE OF DAYS AND NO HYDROLOGY

C-25-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2	NONE		SILTY CLAY
2-7		7.5 YR 3/2	"		" "
7-11		7.5 YR 4/2	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ABOUT 300' EAST OF ROAD CORNER AND 20' NORTH OF E-W WOODS LINE NEAR STA 62+50.
PT IS IN AN AREA ABOUT 6" LOWER THAN GROUND TO EAST AND WEST OF PT.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/28/09
Applicant/Owner:	County: FAV
Investigator: W R HENSON	State: ARK.
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-28-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. RED CEDAR	OS	FACU-
3. RED CEDAR	US	FACU-
4. GREEN ASH	US	FACW
5. WINGED ELM	SHRB	FACU+
6. WILLOW OAK	SHRB	FACW-
7. COM. PRIVET	SHRB	FACU
8. P. IVY	V	FAC
9. HONEYSUCKLE	V	FAC-
10. FESCUE	HL	FAC-
11. WHEAT GRASS	HL	FACU
12. HONEYSUCKLE	HL	FAC-
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/12 33%

Remarks: PT IS IN LOW DRAINING FIELD TO NORTH

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: FROM LAST NIGHTS RAINFALL ✓ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD RDR PT CO-25-09

CU-26-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR4/2	NONE		SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ABOUT 500' WEST OF HIGH V-S POWERLINE AND 30' NORTH OF E-W FENCE. PT IS ABOUT 5FT OF +OW. LOW FROM LOWFIELD TO NORTH IS A GRASSED WATERWAY NO OHWM

THERE IS AN E TO W CREEK 100' SOUTH OF PT WHICH IN PROBABLY "A WATER OF US". CREEK IS BANK FULL NO OBSERVATION OF FLOW

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/28/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-27-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. RED CEDAR	OS	FACU-
3. RED CEDAR	US	FACU-
4. RED CEDAR	SHRB	FACU-
5. NONE	V	
6. FESCUE	HL	FAC
7. YOUNG HONEY LOCUST	HL	FAC-
8. COM. RAGWEED	HL	FACU
9. WHITE ASTER	HL	FAC-
10. RANUNCULUS SP	HL	FAC/OBL
11. ROCK ELM	OS	FAC
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/10 30%

Remarks: PT IS IN EDGE OF FIELD OF IMPROVED PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ? ✓ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: SEE NOTE ON HYD PT CO-25-09
PT IS IN GRASSED WATERWAY DRAINING FIELD TO NORTH

CO-27-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SILTY CLAY
1-11		10YR 4/2	11		SILTY CLAY MANY STRONG + FAINT DK. RT. CH

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN LOW N-S DRAIN 100' WEST HIGH POWER LINE (N-S)
ABOUT STA 68+50
E-W CREEK IS 250' TO SOUTH OF PT.

AREA BETWEEN PTS CO-26+27 IS 1' HIGHER THAN AT THESE PTS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/28/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CU-28-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. WILLOW OAK	OS	FACW-
3. WILLOW OAK	VS	FACW-
4. PERSIMMON	VS	FAC
5. WILLOW OAK	SHRB	FACW-
6. RED CEDAR	SHRB	FACU-
7. GREEN ASH	SHRB	FACW
8. FESCUE	HL	FAC-
9. RANUNCULUS SP	HL	FAC TO OBL
10. SPAGNUM	HL	FAC
11. CAREX SP	HL	FAC TO OBL
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 9/11 82%

Remarks: PT IS IN SLIGHT LOW ON ALIGNMENT

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 4 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CU-25-09

CO-28-09

SOILS

Map Unit Name (Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SILTY CLAY
1-7		10YR 5/2	"		CLAY MANY OX RT CH
7-11		10YR 6/2	"		CLAY MANY FAINT OX RTCH

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 100' NORTH OF WOODS CORNER AND 30' WEST OF N-S WOODS LINE ABOUT STA 7.3+50

PT IS IN LOW NEXT TO WOODS GROUND IN WOODS TO EAST AND PASTURE TO WEST IS SLIGHTLY HIGER. LOW IS EITHER ANIMAL RUN WALLOWED OUT OR CAUSED BY DISCING IN PAST.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/28/09
Applicant/Owner:	County: FAU
Investigator: WR HENSON	State: NRR
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Plot ID: CO 29-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SH	NA ✓
2. RANUNCULUS SP	HL	FAC TO OBL
3. KNOT ROOT FOXTAIL	HL	FAC
4. WHITE ASTER	HL	FAC-
5. YOUNG TRUMPET CREEPER	HL	FAC
6. CAREX SP	HL	FAC TO OBL
7. TORPEDO GRASS	HL	FAC+
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). % 80%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 3 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ? ✓ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CO-25-09
PT IS IN N-S LOW NEXT TO WOODS GROUND IN WOODS TO EAST AND IN PASTURE TO WEST IS HIGHER. LOW MAY BE AN OLD MUD HOLE FROM CATTLE OR CAUSED BY DISCING IN PAST

CO-2909

SOILS

Map Unit Name (Series and Phase): PERRY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SILTY CLAY
1-3		10YR 4/3	NONE		SILTY CLAY FEW OX RT CH
3-11		10YR 5/2	11		SILTY CLAY MANY VERY FAINT OX RT CH

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? Yes (No?)

Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks: PT IS 35' WEST N-S WOODSLINE AND ABOUT 450' NORTH OF WOODS CORNER. ABOUT STA 76+00

NOTE! 50-100' WEST OF PT GROUND 6" HIGHER, VEGETATION DOMINATED BY BERMUDA GRASS, FESCUE, KNOT HOOT FOXTAIL, WHITE CLOVER TORPEDO GRASS

SAME AT PT. CO-28-09

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/28/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO 30-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB, V	
2. RANUNCULUS SP	HL	FAC TO OBL
3. KNOT ROOT FOXTAIL	HL	FAC
4. COM. LESPEDEZIA	HL	FACU
5. RYE GRASS	HL	FACU
6. DANDELION SP	HL	FACU
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 40%

Remarks: PT IS INEDGE OF FIELD. FENCE RUN 30' TO EAST

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: ? 1 (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CO-25-09

CU-30-09

SOILS

Map Unit Name (Series and Phase): PEARY CLAY

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10 YR 4/3	NONE		SILTY CLAY
1-4		7.5 YR 5/4	NONE		SILTY CLAY FEW FAINT SMALL CK
4-8		7.5 YR 4/4	"		"
8-11		7.5 YR 5/4	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS AT ALIGNMENT CORNER ABOUT STA 29+50

GROUND ELEV. RISES EAST OF PT.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W.R. HERKOW	Date: 1/28/09 County: FAU State: AR/L
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-31-09

STA 78+50 TO STA 86+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	GS, VS, SHRB, TV	
2. BERMUDA GRASS	HL	FACU
3. CORLESPEDEZA	HL	FACU
4. BROOMED SAGE	HL	FAC-
5. YOUNG RED CEDAR	HL	FACU
6. KNOT ROOT FOXTAIL		FAC
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 20%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: NONE _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS A LONG HIGH HUMP NO HYD.

CD-31-09

SOILS

Map Unit Name (Series and Phase): MUSKOGEE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		DOM. BY UPLAND SP.			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS ON A LONG HIGH HUMP FROM STA 78+50 TO 86+50

℄ IS 30' SOUTH FENCE ROW DOM BY REDCEDAR PLUS A COUPLE OF WILLOW OAKS + C.B. OAKS + BROOM CHERRY

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W.D. HENSON	Date: 1/28/09 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-32.09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	OS	FACW-	9.		
2. WINGSTEM	US	FACU+	10.		
3. WILLOW OAK	SNRB	FACW-	11.		
4. RED CEDAR	SNRB	FACU	12.		
5. GREENBRIER	V	FAC	13.		
6. HONEYSUCKLE	V	FAC-	14.		
7. CAREX SP	NL	FAC TO OBL	15.		
8. FESCUE	NL	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/8 50%

Remarks: PT IS IN EDGE OF FIELD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	2	(in.)
Depth to Free Water in Pit:		(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CO-32.09 SHALLOW DRAIN CHANNEL ABOUT 4'X4' DEEP NO OHWM PT IS IN SLIGHT DRAIN OVERLAND FLOW THRU WOODS DOWNSTREAM

CJ-32-09

SOILS

Map Unit Name (Series and Phase): MUSKEGEE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SILTY CLAY
1-8		10YR 5/2	NONE		SILTY CLAY MANY STRONG OXRT CN
8-1		10YR 5/2	"		SILTY CLAY MANY STRONG OXRT CN AND A FEW SMALL BLACK CONCRETIONS

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions NOT IN TOP 2"
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)?
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ABUT STA 86+50

PT IS IN SLIGHT DRAIN NO OHWM

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W.R. HENSON	Date: 1/29/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-33-09

STA 87+00 TO STA 91+00

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3. SAME AS PT CO-31-09			11.		
4. EXCEPT MORE BERMUDA			12.		
5. GRASS			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 20% FROM PT CO-31-09

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)

Depth to Free Water in Pit: NONE _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: AREA FOR PT IS HIGH LIKE GROUND AT PT CO-31-09

CO-33-09

SOILS

Map Unit Name (Series and Phase): OUACHITA SILT LOAM
Taxonomy (Subgroup): NOT HYDRC
Drainage Class:
Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		DOMINATED BY UPLAND SPECIES			
		AND NO HYD.			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS ON A HIGH FROM STA 87+00 TO STA 91+00
AREA IS SAME AS AREA AT PT CO-31-09 EXCEPT MORE
BERMUDA GRASS

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/29/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-34-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. POST OAK	OS	FACU	9. GREENBRIER	V	FAC
2. WILLOW OAK	OS	FACW-	10. CAREX SP	HL	FAC to OBL
3. C.B. OAK	OS	FACW	11. SMART WEED	HL	FACW to OBL
4. WILLOW OAK	US	FACW-	12. WHITE ASTER	NL	FAC-
5. C.B. OAK	US	FACW	13. BARNYARD GRS	NL	FACW-
6. WILLOW OAK	SNRB	FACW-	14. [illegible]	HL	FAC+
7. RED CEDAR	SNRB	FACU	15.		
8. WINGED ELM	SNRB	FACU	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 12/14 ~~69%~~ 71%

Remarks:
PT IS IN NE CORNER OF FIELD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: ? 2 (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 4/4
___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CO25-09
FARM ROAD CROSSES AT FENCE GAP 25' EAST. HYD. IS BASED ON MUDHOLE AT GAP AND TO SOUTH IN FARM RD.
AREA AROUND THE MUD HOLE IS 4" HIGHER AND HAS NO HYD.

CO-34-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 5/3	NONE		SILTY CLAY
1-7		10YR 5/2	NONE		SILT CLAY MANY FAINT OX RTCN
7-11		10YR 5/2	11		SILTY CLAY MANY STRONG OX RTCN

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN CORNER OF FIELD QUAD FENCE CORNER 35' NE

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 4/29/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-35-09

STA 98+00 TO STA 98+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE DS, US, 5 HRB+V		
2. COM. LESPEDEZA	HL	FACU
3. RYE GRASS	HL	FACU
4. BERMUDA GRASS	HL	FACU
5. RANUNCULUS SP	HL	FAC TO OBL
6. YOUNG LESPEDEZA OR	HL	FACU
7. HOP CLOVER DOM		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/5 20%

Remarks: WOODS ARE DOM BY RED CEDAR, CB OAK

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? SOME AT SURFACE (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ? ✓ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: SEE NOTE IN HYD FOR PT CO-25-09
THERE IS A 4 WHEELER ROAD NEXT WOODS (NO MUD HOLES) AND A SLIGHT PITCH ON THE WEST SIDE OF ROAD AT SOUTH END. GENERALLY THE SITE IS HIGH

CO-35-09

SOILS

Map Unit Name (Series and Phase): MUSKOGEE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		AREA DOMINATED BY MOSTLY			
		UPLAND SPECIES			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: A1S ALONG ~~EAS~~ N-S EAST WOODS LINE IN EDGE OF FIELD FROM STA 92+00 TO STA 98+50

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/29/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-36-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. C.B. OAK	OS	FACW
2. WINGED ELM	OS	FACU
3. WINGED ELM	US	FACU
4. WINGED ELM	SHRB	FACU
5. C.B. OAK	SHRB	FACW
6. WILLOW OAK	SNRB	FACW-
7. LADIES EAR DROP	V	FACW
8. CAREX SP	HL	FACW to OBL

Dominant Plant Species	Stratum	Indicator
9. HONEYSUCKLE	HL	FAC-
10. YOUNG RED CEDAR	NK	FACU
11. SMART WEED	NL	FACW to OBL
12. GOLDEN ROD	NL	FACU
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/12 50%

Remarks: PT IS IN EDGE OF WOODS JUST NORTH OF FARM ROAD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:		NONE (in.)
Depth to Free Water in Pit:	?	6 (in.)
Depth to Saturated Soil:	?	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: SEE ~~#~~ NOTE IN HYD FOR PT CO-25-09
WATER PUDDLES IN ROAD. GROUND AT PT IS ABOUT 3' HIGHER

CO-36-09

SOILS

Map Unit Name (Series and Phase): MUSKEGEE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		7.5 YR 4/2	NONE		SILT CLAY
1-4		7.5 YR 4/3	"		" "
4-7		7.5 YR 5/3	"		" "
7-12		7.5 YR 5/4	"		SILTY CLAY SOME OX RT CN

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN EDGE OF WOODS JUST NORTH OF STA 99+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/29/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: AR
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-37-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. S.R. OAK	OS	FACU
2. WILLOW OAK	OS	FACW-
3. S.R. OAK	VS	FACU
4. WILLOW OAK	VS	FACW-
5. RED CEDAR	SHRB	FACU
6. WILLOW OAK	SHRB	FACW-
7. GREEN BRIER	✓	FAC
8. HONEYSUCKLE	✓	FAC-
9. COREX SP	HL	FAC TO OBL
10. FESCUE	HL	FAC-
11. BARNYARD GRS	HL	FACW-
12. SPAGHNUM	HL	FAC
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/12 58%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: ? 1 (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test 5/5 NO
___ Other (Explain in Remarks)

Remarks: SEE HYD CMT FOR PT CO-25-09 BIG AREA POORLY DRAINED AS THERE ARE SHALLOW PUDDLES AROUND

CO-37-09

SOILS

Map Unit Name (Series and Phase): MUSKOGEE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-½					ORGANICS
½-2		10YR 4/2	NONE		SILTY CLAY SOME OX RT CH
2-4		10YR 5/2	"		SILTY CLAY MANY FAINT OX RT. CH
4-8		10YR 5/3	"		"
8-12		10YR 5/3	"		SANDY SILTY CLAY SOME FAINT OX RT. CH
					SOME FAINT GRAYISH BLACK LENSES

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No) ?
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS 250' EAST OF SW FIELD CORNER AND 20' ~~NORTH~~ SOUTH OF E-W FENCE. PT IS IN EDGE OF WOODS
ALIGNMENT IS ~~40~~ 30' NORTH OF PT.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/29/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-38-09

STA 103+00 TO STA 109+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SARBHV	
2. FESCUE	HL	FAC-
3. LITTLE BLUE STEM	HL	FACU
4. CRAB GRASS	HL	FACV
5. RANUCULUS SP	HL	FAC TO OBL
6. KNOT ROOT FOXTAIL	HL	FAC
7. WHITE CLOVER	HL	FACU
8. SOME BARNYARD GRASS IN SMALL LOWS	HL	FACW-
9. COM, LESPEDEZIA	HL	FACU
10. BERMUDA GRS	HL	FACU
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/9 33%

Remarks: AREA IS IN SOUTH EDGE OF FIELD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	?	OCCASSIONAL PUDDLE (in.)
Depth to Free Water in Pit:		(in.)
Depth to Saturated Soil:	?	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ? ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE IN DATASHT FOR PT CO-25-09
AREA IS WELL SLOPED WEST TO EAST. THERE IS A SHALLOW LOW ON SOUTHSIDE OF E-W FARM ROAD IN THE AREA

CO-38-09

SOILS

Map Unit Name (Series and Phase): OUACHITA SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 5/3	NONE		SANDY SILTY CLAY
1-4		10YR 5/4	NONE		" " " SOME OX RT CN
4-9		10YR 5/4	"		SANDY SILTY CLAY
9-12		10YR 5/3	"		" " "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: SOIL PIT IS ABOUT STA ~~103+50~~ 107+00

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS FOR AREA FROM STA 103+00 TO STA 109+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/29/09
Applicant/Owner:	County: FAU
Investigator: NR HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-39-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	OS	FACW-
2. WILLOW OAK	VS	FACW-
3. COM. PRIVET	SHRB	FACU
4. NONE	V	
5. SOFT RUSH	NL	FACW+
6. CAREX SP	NL	FAC TO OBL
7. PANICUM SP	NL	FAC TO OBL
8. RANUCULUS SP	NL	FAC TO OBL
9. SMART WEED	NL	FACW TO OBL
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/8 88%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? AT SURFACE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test 7/
- ___ Other (Explain in Remarks)

Remarks: SEE HYD. NOTE FOR PT CO-35-09 ETOW
PT IS ON A LOW OVER BANK NEXT TO CREEK 30' TO SOUTH OF THE ALIGNMENT

CO-39-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR4/2	NONE		SANDY, SILTY, CLAY
1-5		10YR 5/2	"		" " " MANY OX RT CN SOME SMALL FAINT BLACK MNSES
5-9		10YR 5/2	"		SANDY SILTY CLAY FEW FAINT OX RT CN
9-12		10YR5/3	"		SANDY SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN NORTH LOW OVERBANK OF CREEK
PT IS OPPOSITE TO SOUTH OF STA 110+00

THERE IS A LOW FLOODED AREA WEST AND SOUTH PT WHICH IS A WETLAND BASED ON BUTTONBUSH AND HIBISCUS GROWING THERE IT VARIES FROM 4' WIDE JUST WEST OF PT TO 20' WIDE AT 60' SW OF PT

Approved by HQUSACE 2/92

THE SMALL TRIBUTARY ENTERING FROM NORTH JUST EAST OF PT IS NOT A WATER OF THE U.S. THE SANDY, SILTY, CLAY SOIL IS THE SAME IN THE BED + BANKS. THERE ARE SEVERAL SMALL ROCK ELMS GROWING IN THE BED PLUS SEVERAL SWAMP SWEET TREES. AT ABOUT 170' UPSTREAM THE SMALL CHANNEL ENDS AND THE DRAIN TURNS INTO A GRASSED WATERWAY
THE AREA IS DISTURBED BY PIPELINE CONSTRUCTION ONGOING

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/30/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-40-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. GREEN ASH (J)	DS	FACW	9.		
2. NONE	VS + V		10.		
3. WINGED ELM	SHB	FACU	11.		
4. CAREX SP	HL	FAC TO OBL	12.		
5. WHITE ASTER	HL	FAC-	13.		
6. KNOT ROOT FOXTAIL	HL	FAC	14.		
7. BARNYARD GRASS	HL	FACW-	15.		
8. PANICUM SP	HL	FAC TO OBL	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/7 71%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 2 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 4/c
___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE FOR PT CO-25.09
PT IS IN A VEGETATED DRAINAGESWALE

CO-40-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 5/3	NONE		SILTY SAND
1-6		10YR 5/3	"		SILTY CLAY MANY DK RT CM
6-12		10YR 6/3	"		SILTY CLAY MANY FAINT DK RT CM

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: Pt IS 15' EAST OF 5-STRAND BARBED WIRE FENCE AND 130' NORTH OF CREEK. Pt AT ABOUT STA 112+50

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HUDSON	Date: 1/30/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-41-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. AM. ELM	0.5	FACW
2. GREEN ASH	05	FACW
3. AM ELM	US	FACW
4. GREEN ASH	US	FACW
5. WINGED ELM	SHRB	FACW
6. GREEN ASH	SHRB	FACW
7. SMART WEED	NL	FACW TO OBL
8. GREEN BRIER	V	FAC
9. CAREX SP	NL	FACW TO OBL
10. BARNYARD GRASS	NL	FACW-
11. WHITE ASTER	NL	FAC-
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 9/11 82%

Remarks: PT IS IN LOWSWALE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: ? 6 (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ___ ✓ Inundated
? ___ ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ ✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ ✓ FAC-Neutral Test 9/2
___ Other (Explain in Remarks)

Remarks: SEE HYD CMTS IN ~~PT 25~~ PT CO-25-09
WATER IS REAL MUDDY FROM CONSTRUCTION ACTIVITY AROUND PT.
HARD TO I.D. H.L FOR MUDDY WATER

CO-41-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SILTY SAND
1-4		10YR 5/2	11		SANDY SILTY CLAY SOME STRONG ORTCH
4-12		10YR 5/3	11		SANDY SILTY CLAY MANY FAINT ORTCH

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)
PT NEAR STA 115+50

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS IN CENTER OF E-W NARROW LOW SWALE. LOW SWALE ENDS 120' TO WEST AT NEWLY LAID PIPE. THE SWALE MAY HAVE DRAINED INTO THE CREEK AT THIS POINT BEFORE PIPE CONSTRUCTION. SWALE IS ABOUT 40' WIDE AT PT.

OUTFALL LINE ℄ IS ABOUT 30' NORTH OF THE EDGE OF THE SWALE GROUND 1-2' HIGHER 150' NORTH OF PT IN PASTURE AND 1-1.5' HIGHER IN WOODS TO SOUTH

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 1/30/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-42-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. AM. ERM (I)	OS	FACW	9.		
2. NONE	US, SARB+V		10.		
3. CAREX SP	HL	FAC to OBL	11.		
4. PANACUM SP	HL	FAC to OBL	12.		
5. BARNYARD GRASS	HL	FACW-	13.		
6. SPACHNUM	HL	FAC	14.		
7. WHITE ASTER	HL	FAC-	15.		
8. TORPEDO GR	HL	FAC+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ~~86~~ 83%

Remarks: PT IS @ IN THE EDGE OF AN OPEN PASTURE TO THE NORTH AND IS IN THE SAME LOW SWALE AS PT CO-H

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 3 (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test ✓
___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE OF PT CO-25-09

CO-42-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SILTY SAND
1-4		10YR 5/2	"		MANY OX RT CH SANDY SILTY CLAY
4-8		10YR 5/3	"		MANY FAINT OX RTCH SANDY SILTY CLAY
8-12		10YR 5/3	"		SANDY SILTY CLAY MANY STRONG OX RT CH.

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 15' NORTH OF WOODS LINE AND 30' EAST OF THE CENTER OF A CONSTRUCTION CROSSING (BIG MUD HOLE)

PT ABOUT STA 117+00

PT IS IN LOW SWALE 15' WIDE. SAME SWALE AS PT CO-41-09

THE SWALE SHALLOWS OUT TO NONE 150' EAST OF PT

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/30/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-43-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS,US,SHRB+V	
2. BROMED SAGE	HL	FAC-
3. BARNYARD GRASS	HL	FACW-
4. KNOT ROOT FOXTAIL	HL	FAC
5. CAREX SP	HL	FAC TO OBL
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks: PT IS IN BROAD SLIGHT LOW IN NIGH PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test ?/
___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE ~~FOR~~ FOR PT CO-25-09

CO-43-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR4/3	NONE		SANDY SILTY CLAY
1-9		10YR 5/3	NONE		SILTY CLAY VERY FRI VERY FAINT OX RTCN
9-12		10YR5/2	"		SANDY SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 80' NORTH OF WOODS LINE AND 250' EAST PT CO-42-09

PT IS NEAR STA 118+50

FROM STA 117+50 TO STA 126+50 AREA IS THE SAME AS THIS PT. A HIGH FLAT PASTURE.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 1/30/09 County: FAU State: FLA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-44-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OS, VS, SHRB		NV
2. BERMUDA GRASS	HL	FACU
3. CAREX SP	HL	FAC TO OBL
4. BARNYARD GRASS	HL	FACW-
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 67%

Remarks: PT IS IN EDGE OF OPEN FIELD THAT WAS BEEN BUSH HOGGED

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 2 (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test */
___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE FOR PT CO-25-09

CO - 44-09

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SANDY SILT
1-4		10YR 6/3	"		SANDY SILTY CLAY MANY STRONG BY RTCN
4-8		10YR 6/3	"		SANDY SILTY CLAY MANY FAINT DKRTCH
8-12		10YR 5/3	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ABOUT 230' EAST & OLD MILITARY RD AND 60' SOUTH OF EAST TO WEST CREEK AND 20' SOUTH OF E-W 2 STRND BORBD WIRE. GROUND SLOPES UPWARD ABOUT 1' IN 100' TO SOUTH AND UPWARD TO CREEK BANK ABOUT 1' HIGHER

PT IS IN ALON THAT EXTENDS EASTWARD PT CO-45-09 IN SWAMP/OW.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 1/30/09
Applicant/Owner:	County: FAV
Investigator: W.R. HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-45-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. GREEN ASH	VS	FACW
3. AM ELM	VS	FACW
4. JNT CUM	SHRB	FAC+
5. AM ELM	SHRB	FACW
6. GREEN ASH	SHRB	FACW
7. TRUMPET CREEPER	V	FAC
8. HONEYSUCKLE	V	FAC-
9. LADIES TOK DROP	V	FACW
10. COREX SP	HL	FACW to OBL
11. BERNARD GRASS	HL	FACW-
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 10/11 91%

Remarks: PT IS IN LOW E-W SWALE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: ? 3 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ? 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
? ✓ Inundated
? ✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 9/1
___ Other (Explain in Remarks)

Remarks: SEE HYD NOTE FOR PT CO-25-09

CO-45-09

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SANDY SILTY CLAY
1-4		10YR 5/2	"		" " "
4-9		10YR 5/3	"		" " " MANY FAINT OLIVE
9-12		10YR 5/3	"		SANDY SILTY CLAY FEW VERY FAINT OLIVE

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 25' NORTH OF E-W FENCE, 250' EAST PT CO-44-09 AND 140' SOUTH OF CREEK
GROUND IS HIGHER TOWARDS CREEK TO NORTH AND IN FIELD TO SOUTH.
PT IS IN SAME LOW AS PT CO-44-09

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/1/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-46-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. AM. ELM	OS	FACW
2. WILLOW OAK	OS	FAW-
3. AM. ELM	VS	FACW
4. COM. PRIVET	SHRB	FACU
5. GREEN ASH	OS	FACW
6. GREENBRIER	V	FAC
7. HONEYSUCKLE	V	FAC-
8. COM. PRIVET	HL	FACU
9. PANICUM SP	HL	FAC TO OBL
10. ANA JUDL JACK	V	FACW
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/10 70%

Remarks: PT IS IN LOW NORTH OVERBANK OF CREEK

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 2 (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 4/3
___ Other (Explain in Remarks)

Remarks: THE MAIN CREEK WHICH IS 60' SOUTH OF THE PT HAS SEVERAL BEAVER DAMS UPSTRM + DOWNSTRM OR POINT WHICH HAS CAUSED INUNDATION OF THE NORTH OVERBANK AND THE KILLING OF MANY MATURE (BIG) TREES IN THE AREA

CO-46-09

SOILS

Map Unit Name (Series and Phase): AMY (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR4/2	NONE		SANDY, SILTY, CLAY
4-5		10YR4/1	"		MANY STRONG MATRIX SILTY CLAY
5-12		10YR4/2	"		SANDY SILT SILTY SAND

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ✓ Other (Explain in Remarks)

Remarks: BECAUSE OF DEAD TREES IN AREA THE SOIL MAY BE INUNDATED LONG ENOUGH TO BE CONSIDERED HYDRIC
SITE SIMILIAR TO PT CO-47.09 WHICH IS HYDRIC, THEREFORE CONSIDER THIS SOIL HYDRIC BASED ON INUNDATION

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No ?

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: PT IS 100' SE OF SE WOODS CORNER IN LOW OVERBANK BETWEEN HIGHER BANK ALONG CR AND ~~LOW OVERBANK~~, AND HIGH SWITCUM THICKET TO NW
SOILS CHECK OUT HYDRIC IN SAME LOW OVERBANK 250' UPSTRM THEREFORE SOILS AT THIS PT ARE HYDRIC AS INUNDATION IS ABOUT THE SAME
WETLAND IS ABOUT 50' WIDE AND EXTENDS DOWNSTRM (WEST) ABOUT 120' WHERE LOW ENDS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 2/1/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-A7-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	DS	FACW-	9. YOUNG WILLOW OAK	HL	FACW-
2. GREEN ASH	DS	FACW	10. BUTTON BUSH	SHRB	OBL
3. WILLOW OAK	DS	FACW-	11. ALA SUM JACK	V	FACW
4. WILLOW OAK	SHRB	FACW-	12.		
5. COM. PRIVET	SHRB	FACU	13.		
6. LADIES EARDROP	V	FACW	14.		
7. THUMPET CREEPER	V	FAC	15.		
8. JUMP WEED	AL	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 10/11 91%

Remarks: PT IS ON EDGE BETWEEN OLD MATURE WOODS TO SE AND YOUNG (THICK) MOSTLY SWEETGUM TO NW

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	8	(in.)
Depth to Free Water in Pit:		(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test 5/
- ___ Other (Explain in Remarks)

Remarks: PT IS IN LOW NORTH OVERBANK
SAME NOTE FOR HYD. AT PT CO-AL 09 ABOUT BEAVERS IS IN THIS AREA TOO.
BEAVER DAM IN CREEK CHANNEL 70' SE OF PT AND IN NORTH LOW OVERBANK
40' NORTH OF PT. ALSO MANY DEAD MATURE TREES

CO-47-09

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/2	NONE		SANDY SILTY CLAY
1-12		10YR 5/2	BRIGHT ORANGE	MANY SOME STRONG SOME WEAK	SANDY SILTY CLAY SOME OX RICH

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: PT IS ABOUT 250' NE OF PT CO-46-09 IN SAME LOW OVER BANK
WETLAND IS ABOUT 50' WIDE AT PT BASED ON INUNDATION

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R. HENSON	Date: 2/1/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-48-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	OS	FACW-	9.		
2. WILLOW OAK	US	FACW-	10.		
3. COM. PRIVET	SHRB	FACU	11.		
4. RED CEDAR	SHRB	FACU	12.		
5. D. HOLLY	SHRB	FACW-	13.		
6. NONE	V		14.		
7. COM. PRIVET (DENSE	HL	FACU	15.		
8. YNG. WILLOW OAK)	HL	FACW-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/7 57 %

Remarks: IN SHORE LOW OVERBANK AS PTS CO-46-47-09
FEW YOUNG DEAD SAPLINGS AROUND SITE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 3 (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 4/3
___ Other (Explain in Remarks)

Remarks: PT IN LOW IN INUNDATED OVERBANK FROM BEAVER ACTIVITY
CREEK IS 180' TO SE (MANY DEAD TREES THERE)

CO-48-09

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 5/2	NONE		SANDY SILT FEW DK RTCN
1-8		10YR 5/3	"		FEW DK MTCH SANDY SILTY CLAY
8-12		10YR 5/2	LIGHT BROWN	VERY FEW VERY FAINT	SANDY SILTY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: PT IS ABOUT 150' NE PT CO-47-09 IN SAME LOW OVERBANK
WETLAND IS ~~ONLY 20'~~ ABOUT 50' WIDE BASED ON INUNDATION AND SOILS AT 10" 10YR 5/2 WITH FAINT MOTTLES
WETLAND ENDS ABOUT 70' NE OF PT WHERE GROUND IS 2-3' HIGHER AND VEG. IS DOM BY RED CEDAR AND COM. PRIVET WITH WILLOW OAK D.S.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 2/1/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-49-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	OS	FACW-
2. WILLOW OAK	US	FACW-
3. PERSIMMON	US	FAC
4. WILLOW OAK	SHRB	FACW-
5. HONEYSUCKLE	V	FAC-
6. VINE	HL	
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/5 80%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 3 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 3/
___ Other (Explain in Remarks)

Remarks: PT IS IN NORTH LOW OVER BANK. THERE IS A HIGH (+6" BETWEEN THIS PT AND PT CO-48-09

CO-49-09

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR 4/2	NONE		SAND SILTY CLAY
4-8		10YR 5/3	NONE		" " " MANY STRNG DK RTCH SANDY SILTY CLAY
8-12		10YR 5/3	"		FEW FAINT OXRTCH
			DARK BROWN	SOME FAINT	SANDY SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 25' NORTH E-W RUSTY (DOWN) B.W. FENCE AND ABOUT 100' NE OF TP AT STA 139+30

BEAVER ACTIVITY IN AREA

THERE IS A BEAVER DAM JUST SOUTH OF OUTFALL CROSSING OF CREEK

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/12/09
Applicant/Owner:	County: FAU
Investigator: W R HUDSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-SO-09
(If needed, explain on reverse.)	

STA 142+60 (EAST HIGH BACK OF CREEK) TO 144+60 (TOP OF SLOPE) LOW FLAT TO EAST

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. POST OAK	OS	FACU	9. PURPLE TOP	NL	FACU
2. S.R. OAK	OS	FACU-	10.		
3. POST OAK (SPROUTS)	US	FACU	11.		
4. RED CEDAR	SHRB	FACU-	12.		
5. COMI PRIVET	SHRB	FACU	13.		
6. HONEYSUCKLE	V	FAC-	14.		
7. CAREX SP	NL	FAC TO OBL	15.		
8. HONEYSUCKLE	NL	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/9 11%

Remarks: HIGH UPLAND WOODED SLOPE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NONE	(in.)
Depth to Free Water in Pit:		(in.)
Depth to Saturated Soil:	NONE	(in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: AREA SLOPES UPWARD TO EAST ABOUT 2-3' IN 100'
WELL DRAINED NO EVIDENCE OF HYD

CO-5009

SOILS

Map Unit Name (Series and Phase): Amy (HYDRIC)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG		NO HYD EVIDENCE	
		AND AREA DOMINATED BY UPLANDS			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: AREA STARTS AT EAST TOP BANK OF CREEK AND GOES EASTWARD 20' TO THE TOP OF THE SLOPE

ABOUT STA 14+60 TO STA 14+60
THERE IS A LOW FLAT EAST OF UPSLOPE (SEE NEXT W.L. PATH PT.)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 2/2/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-51-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK (DOM)	OS	FACW-
2. POST OAK (J)	OS	FACU
3. WILLOW OAK	US	FACW-
4. WILLOW OAK	SHRB	FACW-
5. GREENBRIER	V	FAC
6. CAREX SP	HL	FAC TO OBL
7. INDIAN WHEAT GRS	HL	FACU
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/7 71%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ✓ Water Marks
- ✓ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test 4/5
- ___ Other (Explain in Remarks)

Remarks: PT IS IN THE LOWEST POINT OF A HIGH FLAT

CO-51-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SANDY SILTY CLAY
1-4		10YR 5/3	"		" " " FEW FAINT OXRTCN
4-		10YR 5/3	LIGHT ORANGE	MANY FAINT	SANDY SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 120' EAST OF TOP OF UPSLOPE AT ABOUT STA 145+80.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W.R. HENSON	Date: 2/2/03 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-SZ-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK (QUAL)	OS	FACW-
2. WILLOW OAK (2)	US	FACW-
3. WILLOW OAK	SHRB	FACW-
4. GREEN ASH	SHRB	FACW
5. COM PRIVET	SHRB	FACU
6. HONEYSUCKLE	✓	FAC-
7. CAREX SP } SPARSE	HL	FAC OBL
8. FESCUE } SPARSE	HL	FAC-
9. HONEYSUCKLE 2	HL	FAC-
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/9 56%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
✓ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 5/9
___ Other (Explain in Remarks)

Remarks: PT IS IN LOW ON HIGH FLAT

CO-52-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SANDY SILTY CLAY
1-3		10YR 4/3	"		SANDY SILT SOME PAINT OXIDIZED
3-6		10YR 5/4	LIGHT BROWN	FEW FAINT	SANDY SILTY CLAY
6-12		10YR 5/3	LIGHT BROWN & DARK ORANGE	SOME FAINT TO STRONG	SANDY SILTY CLAY FEW DARK ORANGE TO WARDS BLACK LENSES

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN LOW ON HIGH FLAT ABOUT 100' WEST OF YARD (N-S) FENCE AND 25' SOUTH OF PROPERTY LINE (E-W)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/2/09
Applicant/Owner:	County: FAU
Investigator: WR WENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-53-09
(If needed, explain on reverse.)	

STA 119+00 (START OF MOWED YARDS) TO STA 160+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. YARDS MOSTLY BERMUDA	HL	FACU
2. AND CRAB GRASS	U	FACU
3. EDGE IS MOSTLY COMPANET	SHRB	FACU
4. SOME SWT GUM AND	OS	FAC+
5. BLACK CHERRY IN EDGE	OS	FACU
6. IN EDGE DEWBERRY AND	✓	FACU
7. HONEYSUCKE	✓	FAC-
8. IN YARDS SOME WILD ONIONS	HL	FAC-

Dominant Plant Species	Stratum	Indicator
9. CHICKWEED	HL	FACU-
10. FESCUE	HL	FAC-
11. CAREX SP	HL	FAC TO OBL
12. ~~AND~~		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/11 18%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)

Depth to Free Water in Pit: NONE ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test 2/9 NO
- ___ Other (Explain in Remarks)

Remarks: YARDS WELL SLOPED AND DRAINED NO HYD. EVIDENCE

CO-53-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM STA 149+00 TO STA 152+00 & NEITHER ARE HYDRIC
MUSKEGEE SILTY CLAY LOAM STA 152+00 TO 160+00

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG IN YARDS WELL SLOPED			
		AND DRAINED, NO HYD EVIDENCE AND			
		MOST VEG. IS FACV.			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT STARTS AT STA 149+00 (START OF YARDS) UP ON A HIGH, AND THEN DOWN SLOPE TO STA 160+00 (TO A LOW IN EDGE OF YARD.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 2/2/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-54-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. HONEY LOCUST	OS	FAC-
3. WILLOW OAK	OS	FACW
4. HONEY LOCUST	VS	FAC-
5. COM. PRIVET	SHRB	FACU
6. BUTTON BUSH	SHRB	OBL
7. NONE	V	
8. WHITE ASTER	HL	FAC-
9. CAREX SP	HL	FAC TO OBL
10. COM. PRIVET	HL	FACU
11. INDIAN WHEATGRASS	HL	FACU
12. ALASUAL JACK	V	FACW
13. RANUCULUS SP	HL	FAC TO OBL
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/12 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	1 (in.)
Depth to Free Water in Pit:	_____ (in.)
Depth to Saturated Soil:	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test 6/6 NO
- ___ Other (Explain in Remarks)

Remarks: PT IS IN LOW 30' INTO WOODS 50' NORTH & OUTFALL LINE

CO-54-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR4/2	NONE		SANDY SILT
2-6		10YR5/3	"		SANDY SILTY CLAY LOAM/SAINT DY RTCN
6-12		10YR5/3	ORANGE	FEW FAINT	SANDY SILT SOME LARGE DARK BROWN TO BLACK CONCRETIONS

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ✓ Concretions (NOT IN TOP 6")
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ~~Yes~~ No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 30' NORTH OF E-W WOODS LINE AND 200' WEST OF PAVED N-S ROAD AND OPPOSITE ~~AT~~ STA 160+50
GROUND ON ~~ALT~~ OUTFALL ALIGNMENT 50' TO SOUTH IS ABOUT 1+ HIGHER NO WETLANDS ON ALIGNMENT OPPOSITE FLOW.
* FROM STA 160+50 TO PAVED ROAD SAME AS PT CO-53-09 AND GROUND SLIGHTLY HIGHER THAN AT STA 160+50

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R HENSON	Date: 2/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-55-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. WILLOW OAK	US	FACW-
3. WILLOW OAK	SHRB	FACW-
4. HONEYSUCKLE	V	FAC-
5. GREENBRIER	V	FAC
6. BROMED SAGE	HL	~~FAC~~ ~~FACW~~
7. CREEK SD	HK	FAC TO OBL
8. CRAB GRASS		FACU
9. FESCUE	HL	FAC-
10. BERMUDA GRASS	HL	FACU
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/10 . 50%

Remarks: PT IS IN EDGE OF FIELD MOWED FOR HAY

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test A/S NO
- ___ Other (Explain in Remarks)

Remarks: PT IS ON SOUTH OVERBANK OF CREEK 50' SOUTH OF CREEK.

CO-55-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/2	NONE		SANDY SILTY CLAY
1-6		10YR 5/3	"		SILTY CLAY
6-10		10YR 5/4	"		"
10-12		10YR 5/3	"		"

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 50' SOUTH CREEK + 80' EAST OF PAVED ROAD

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/4/09
Applicant/Owner:	County: FAU
Investigator: W B HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-56-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. GREEN ASH	OS	FACW
2. WILLOW OAK	US	FACW-
3. WILLOW OAK	SHRB	FACW-
4. HONEYSUCKLE	V	FAC-
5. BROMED SAME	HL	FAC-
6. PANICUM SP	HL	FAC TO OBL
7. CAREX SP	HL	FAC TO OBL
8. INDIAN WHEATGRASS	HL	FACU
9. GOLDENROD	HL	FACU
10. BLACK BERRY	HL	FAC
11. HONEYSUCKLE	HL	FAC-
12. TORPEDO GRS	HL	FACW
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/11 7/12 58% 58%

Remarks: PT IS IN EDGE OF FIELD MOWED FOR HAY

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test 5/5 NO
___ Other (Explain in Remarks)

Remarks: PT IS IN LOW OLEARMK 40' SOUTH OF CREEK

CO-56-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2	NONE		SANDY SILTY CLAY
2-5		10YR 5/3	"		" FEW FAINT OX RTA
5-9		10YR 5/3	"		SANDY SILTY CLAY
9-12		10YR 5/3	"		" FEW FAINT BLACK LENSES

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 40' SOUTH & CREEK AND ABOUT 30 D' EAST OF PT CO-55-09 AT ABOUT STA 167+50

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY CUTOFF	Date: 2/4/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-57-09
(If needed, explain on reverse.)	

STA 168+50 (EDGE OF N-S WOODS LINE) + STA 174+00 (N-S CREEK CROSSING)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. RED CEDAR	OS	FACU
2. BLACK CHERRY	OS	FACU
3. WILLOW OAK	OS	FACW-
4. RED CEDAR	US	FACU
5. CEDAR ELM	US	FAC
6. WILLOW OAK (FACW-)	US	FACW-
7. COM. PRIVET (DOM)	SHRB	FACU
8. RED CEDAR	SHRB	FACU

Dominant Plant Species	Stratum	Indicator
9. HONEYSUCKLE	V	FAC-
10. GREENBRIER	V	FAC
11. COM. PRIVET	NL	FACU
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/11 36.4%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test 3/7 NO
- ___ Other (Explain in Remarks)

Remarks: ALIGN ~~FAU~~ PARALLELS CREEK TO SOUTH ABOUT 50' TO 100'. GROUND WELL SLOPED HIGH TO SOUTH AND LOWER ALONG CR. SLOPE IS ABOUT 3'-5' IN 100'

CO-57-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		NO HYD. EVIDENCE			
		AND DOMINATED BY			
		UPLAND SPECIES			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS ALONG ALIGNMENT FROM STA 168+50 TO STA 174+00

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR WENSON	Date: 2/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: <0-5B-09

174+00 TO 176+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. RED WILLOW OAK	OS	FACW-
2. GREEN ASH	OS	FACW
3. RED CEDAR	OS	FACU
4. C.B. OAKS	OS	FACW
5. WILLOW OAK	OS	FACW-
6. SUMAC	SHRB	FACU
7. RED CEDAR	SHRB	FACU
8. COMM PRIVET (1" DIA THICK)	SHRB	FACU
9. HONEYSUCKLE	V	FAC-
10. WHITE ASTER	HL	FAC-
11. GOLDEN ROD	HL	FACU
12. BLACK BERRY	HL	FAC
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/12 41.7 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test 4/7 NO
___ Other (Explain in Remarks)

Remarks: AREA NOT AS SLOPED AS FROM STA 168+50 TO 174+00 BUT IS STILL SLOPED 1-2' IN 100' AND NEW DITCH DRAINS IT

CO-SB-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		NO HYD. EVIDENCE			
		AND DOM. BY MOSTLY UPLAND			
			SPECIES		

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PIT IS FROM STA 174+00 TO STA 176+50 AND JUST NORTH OF NEW E TO W DUG DITCH

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 2/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-5909

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. WILLOW OAK	OS	FACW-
2. GREEN ASH	OS	FACW
3. BLACK CHERRY	OS	FACU
4. GREEN ASH	US	FACW
5. BLACK CHERRY	US	FACU
6. COM. PRIVET	SHRB	FACU
7. GREENBRIER	V	FAC
8. HONEYSUCKLE	V	FAC-

Dominant Plant Species	Stratum	Indicator
9. COM. PRIVET	HL	FACU
10. SPAGHNUM	HL	FAC
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/10 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test 3/5 NO
___ Other (Explain in Remarks)

Remarks: PT IS IN LOW FLAT DRAINAGE PATH THRU THE WOODS NOT CONNECTED TO NEW DUG DITCH 50' TO WEST

CO-5909

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 3/2	NONE		SANDY SILTY CLAY
1-4		10YR 5/3	"		SILTY CLAY
4-8		10YR 4/3	"		SILTY CLAY VERY FEW + FAINT OX RT CN
8-12		10YR 4/3	"		SILTY CLAY FEW SMALL FAINT BLACK LENSES

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 35' SE OF CORNER OF WOOD FENCE
IT IS ABOUT STA 177+00
GROUND SLOPES OFF STEEPER TO NORTH ABOUT 40' NORTH OF PT.
THERE IS AN OLD DUG DITCH WITH SPOIL PILE (12-14" TREES GROWING IN SPOIL PILE) THAT DRAINS ALIGNMENT FROM PT EASTWARD TO T.P. AND SOUTH. AREA IS SAME AS THIS PT.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R. HENSON	Date: 2/4/03 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-GD-09

STA 17+50 TO STA 20A+81 (END)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. POST OAK	OS	FACU
2. RED CEDAR	OS	FACU
3. POST OAK	VS	FACU
4. NONE	V+SHRB	
5. CRAB GRASS	HL	FACU
6. CAREX SP	HL	FAC TO OBL
7. COMPOSITE DEZIA	HL	FACU
8. WILD STRAWBERRY	HL	FAC-
9. CHICKWEED	HL	FACU-
10. SPACHNUM	HL	FAC
11. COM. PRIVET	SHAB	FACU
12. RED CEDAR	VS	FACU
13.		
14. IN UNDEVELOPED AREAS		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ~~2/11 14.3%~~ 18%

Remarks: AREA IS MOSTLY YARDS ON HIGH GROUND PLUS SOME SMALL UNDEVELOPED AREAS. NORTH SIDE OF ROADWAY AT STA 17+50 IS OUTER BANK IN ROAD DITCH

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test Y/N NO
- ___ Other (Explain in Remarks)

Remarks: PT IS BETWEEN HOUSES, IN FRONT YARDS, AND ABOVE YORK ENGINEERING AREA WELL SLOPED 1-2' IN 100' AND DRAINED BY NATURAL CHANNELS AND ROAD DITCHES

60-60-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM / LINKER FINE SANDY LOAM — NEITHER ARE HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		VEG. DOMINATED BY UPLAND SPECIES			
		AREA WELL DRAINED NO HYD. EVIDENCE			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS REACH FROM STA 177 1779+50 TO STA 204+81 (END)

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HERNDON	Date: 2/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-61-09

STA 0+00 TO 0+50 IS ELEVATED PAVED ROAD
STA 0+50 TO 4+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRUB	V
2. BERMUDA GRASS (DOM)	HL	FACU
3. CRAB GRASS	HL	FACU
4. WILD ONION	HL	FACU
5. CHICKWEED	HL	FACU-
6. FESCUE	HL	FAC-
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: AREA A MOWED SIDE YARD

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: NONE (in.)
Depth to Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: AREA WELL SLOPED FROM 3'TO 5' IN 100' IN MOWED YARD

CO-61-09

SOILS

Map Unit Name (Series and Phase): LINKER FINE SANDY LOAM — NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		NO HYD EVIDENCE			
		AND VEG DOMINATED			
		BY UPLAND SPECIES			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 0+00 TO STA 4+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-62-09

STA 4+00 TO STA 18+50

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	ES, US, SHRUB	V
2. BROMED SAGE	NL	FAC-
3. BERMUDA GRASS	NL	FACU
4. CRAB GRASS	UL	FACU
5. TURNIP		
6. RAPE (FOR DEER)	UL	NOT LISTED FACU
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9. IN FENCE ROW TO NORTH		
10. RED CEDAR (POOR	US	FACU
11. HONEYSUCKLE	V	FAC-
12. COM. PRIVET		FACU
13.		
14. IN NW PART POOR SOIL	UL	FACU-
15. COM. BERMUDA	UL	FACU
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0% 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)
Depth to Free Water in Pit: _____ (in.)
Depth to Saturated Soil: _____ (in.)
NONE

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
NONE
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test NO
___ Other (Explain in Remarks)

Remarks: AREA HIGH AND WELL SLOPED NO HYD EVIDENCE EXCEPT FOR ~~LOW~~ LOW AT PT CO-63-09

CO-62-09

SOILS

Map Unit Name (Series and Phase): WESTEND LEADVILLE SILT LOAM, EAST AND LINDER FINE SANDY LOAM — NEITHER HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		AREA HIGH AND WELL SLOPED			
		NO HYD. EVIDENCE DOM BY UPLAND SP.			
		EXCEPT AT PT CO-63-09			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 4+00 TO STA ~~13+50~~ 11+50

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W R HENSON	Date: 2/1/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-63-09

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. PERSIMMON	OS	FAC	9.		
2. PERSIMMON	US	FAC	10.		
3. WINGED ELM	US	FACU+	11.		
4. COM. PRIVET	SNRB	FACU	12.		
5. HONEYSUCKLE	V	FAC-	13.		
6. ALA SUPL JACK	V	FACW	14.		
7. HONEYSUCKLE	HC	FAC-	15.		
8. BLACKBERRY		FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/8 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: 4 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test 1/4 NO
- ___ Other (Explain in Remarks)

Remarks: PIT IS IN LOW ON ALIGNMENT. THERE IS A MUD HOLE IN FIELD RD ON ALIGNMENT

60-63-09

SOILS

Map Unit Name (Series and Phase): MOUNTAINBURG STRONG SANDY LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/2	NONE		SANDY SILTY CLAY
1-8		10YR 5/3	11		SILTY CLAY MANY 2% RT CH
8-12		10YR 5/3	11		SILTY CLAY SOME 0% RT CH
					SOME SMALL FAINT BLACK LENSES

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 20 SOUTH OF E-W FENCE ROW AND JUST NORTH OF MUDHOLE IN E-W FIELD ROAD

PT IS ABOUT STA 12+00

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 2/4/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-64-09

STA 12+50 TO 39+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	DS, US, SHR & V	
2. BAHIA SEED	HL	FAC-
3. FESCUE	HL	FAC-
4. GOLDEN ROD	HL	FACU
5. WHITE ASTER	HL	FAC-
6. CRAB GRASS	HL	UPL
7. BERMUDAGRASS	HL	FACU
8.		
9. IN PLACES A FEW		
10. PERSIMMON SPROUTS	HL	FAC
11. BLACKBERRY	HL	FAC
12. LANCELEAF RAGWEED	HL	FACU
13. DEW BERRY	HL	UPL
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/10 0% TO 20%

Remarks: THE ALIGNMENT IS IN A OLD FESCUE-BERMUDAGRASS PASTURE THAT HAS BEEN MOSTLY MOWED FOR HAY AND HAS RECENTLY OVER ~~GROWN~~ GROWN IN A FEW ~~SPOTS~~ SPOTS

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test ND
- ___ Other (Explain in Remarks)

NONE

Remarks: AREA WELL SLOPED AND MOSTLY HIGH STOUT NATIVE GRASSED (AS ABOVE) DRAINAGE SWALE AT STA 21+00 LOW AGAINST FENCE IS 2' DEEP CAUSED BY POOR GRADING

OF LOTS

CO-64-09

SOILS

Map Unit Name (Series and Phase): MOUNTAINBURG STROUD SANDY LOAM — NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		VEGETATION IS DOMINATED BY MOSTLY UPLAND SPECIES			
		AREA WELL DRAINED NO HYD. EVIDENCE			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS A REACH FROM STA 12+50 TO STA 39+00

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R. HENSON	Date: 2/5/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-65-09

STA 39+00 TO STA 44+00
BEHIND HOUSE LOTS

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OS, VS, SHRB+V		
2. BERMUDA GRASS (DOM)	HL	FACU
3. FESCUE (DOM)	HL	FACU
4. (1) YOUNG PERSIMMON AT PIPE OUTLET		FAC
5. BROMED SEDGE	HL	FACU
6. DRAINAGE SWALE HAS BERMUDA GRASS		
7. SOFT RUSH, FESCUE, SMARTWEED, BRUYARD		
8. GRASS ACROSS 1' WIDE BOTTOM NOT A LIKELY OF VS NO DAMM		
9. FEW GIANT RAGWEED	HL	FAC
10.		
11. AT BACK OF MOWED LOTS		
12. WHITE CLOVER		FACU
13. RYE GRASS		FACU
14. CHICKWEED		FACU
15. ONE DEER ROAD PLOT AUST, WINTER PEAS, WHEAT, GREENS, MINERAL BLOCK		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/8 13%

Remarks:

HYDROLOGY

- ___ Recorded Data (Describe in Remarks):
  - ___ Stream, Lake, or Tide Gauge
  - ___ Aerial Photographs
  - ___ Other
- ✓ No Recorded Data Available

Field Observations:

- Depth of Surface Water: NONE ___ (in.)
- Depth to Free Water in Pit: NONE ___ (in.)
- Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- NONE ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: DRAINAGE SWALE FROM SOUTH IS FLOWING NORTH INTO BURIED PIPE ON WEST END
THERE ARE SLIGHT DITCHES FROM E AND N AT BACK OF LOTS DRAINING INTO SWALE (NO FLOW). OTHERWISE ALIGNMENT IS 1ft HIGHER GROUND

CO-65-09

SOILS

Map Unit Name (Series and Phase): MOUNTAINBURG STRONG SANDY LOAM NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		VEG. DOMINATED BY UPLAND SPECIES			
		AREA WELL SLOPED AND DRAINED NO HYD.			
		EVIDENCE EVEN SLIGHT DITCH BEHIND LOTS			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS FROM STA 39+00 TO 44+00 BEHIND LOTS
NO WETLANDS. ONE VEGETATED DRAINAGE SWALE NO DAMM
ON WEST END.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/5/09
Applicant/Owner:	County: FDV
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-66-09
(If needed, explain on reverse.)	

STA 44+00 TO ~~55+00~~ 53+50 ACROSS OLD PASTURE JUST NORTH OF OLD DAIRY

55+40/0 TO 55+70 IS ON NORTH SIDE OF DONAGHEY DRIVE

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OS U.S. SHRUB + V		
2. BERMUDA GRASS (DOM)	HL	FACV
3. FESCUE (DOM)	HL	FAC-
4. RYEGRASS UNDER POWER LINE	HL	FACV
5. OCCASIONAL PERSIMMON SPROUT	HL	FAC
6. " (EAST END) BLACK BERRY		FAC
7. " GOLDEN ROD		FACV
8. " BROOM SEDGE		FACV
		FAC-
		FACU

Dominant Plant Species	Stratum	Indicator
9. DRAINAGE SWALES FROM SOUTH AND EAST INTO		
10. DRAINAGE INTLET AT STA 47+20 SOUTH NOTHING BUT FESCUE + BERMUDA GRS. EAST DOM BY BERMUDA GRS + FESCUE WITH		
11. A FEW BLACK WILLOW AND 30 FT RU STU NO OWNM'S		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/9 22%

Remarks: REACH IS

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ____(in.)

Depth to Free Water in Pit: NONE ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test NO
___ Other (Explain in Remarks)

Remarks: SOME SHALLOW (1-2") WATER ALONG ~~DRAINAGE~~ CENTER DRAINAGE SWALE. (SEE HYD. FOR PT CO-67-09). OTHERWISE HIGH AND WELL SLOPED NO HYD. EVIDENCE

EAST END OF REACH IS MUCH WIDER (2' TO 3')

CO-66-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG EXCEPT AT PT CO-67-09			
		SOILS NOT HYDRIC THERE			
		VEG. DOMINATED BY UPLAND SPECIES			
		AND NO HYD. EVIDENCE EXCEPT IN			
		NARROW EAST DRAINAGE SWALE			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: PT IS REACH FROM STA 44+00 TO STA ~~55+70~~ 53+50 (EAST SIDE OF SOUTH DONAGHEY DRIVE

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R HENSON	Date: 2/5/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-67-09

PT IS AT STA AB+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, HV	
2. FEW BLACK WILLOWS	SHRB	OBL
3. BERMUDA GRASS (DOM.)	HL	FACU
4. FESCUE (DOM)	HL	FAC-
5. SOME BROMED SEDGE	HL	FAC-
6. BARNYARDGRS	HL	FACW-
7. SMART WEED	HL	FACW TO OBL
8. BED STRAW	HL	FACU
~~9. KNOT ROOT FOXTAIL~~	HL	FAC
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/8 50%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	2 (in.)
Depth to Free Water in Pit:	(in.)
Depth to Saturated Soil:	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test 3/4 NO
- ___ Other (Explain in Remarks)

Remarks: PT IS IN A 20' WIDE BY 80' LONG LOW IN EAST DRAINAGE SWALE

CC-67-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 5/3	NONE		SILTY CLAY FEW FAINT OX RICH
2-4		10YR 5/3	DARK ORANGE	MANY STRONG	SILTY CLAY SOME BLACK SHALE PIECES MAY BE FILL
~~4-~~		~~10YR 5/4~~	"	"	
4-9		10YR 5/4	DARK ORANGE	SOME MANY STRONG	SILTY CLAY
9-11		10YR 5/4	"	FEW FAINT	" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN CENTER OF EAST DRAINAGE SWALE ABOUT 100' EAST OF END OF FAKE ROCK (GRAY) FENCE AT STA 48+00

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL
Applicant/Owner:
Investigator: W R HENSON

Date: 2/5/09
County: FAU
State: ARK

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID:
Plot ID: CO-68-09

57+30

STA 53+50 TO STA ~~55+00~~ IN YARD OF RESIDENCE
57+30 TO 60+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. BERMUDA GRASS	HL	FACU
2. HONEYSUCKLE	V	FAC-
3. GOLDEN ROD	HL	FACU
4. BROMED SEDGE	HL	FACU
5. LOTS OF JUNK		
6. POST OAK ALONG	OS	FACU
7. S.R. OAK & FENCE LINE	OS	UP
8. SPAGNUM	HL	FAC
WILLOW OAK AT BACK OF LOT	OS	FACW

Dominant Plant Species	Stratum	Indicator
9. BERMUDA GRASS	HL	FACU
10. CON, CORP, ELEC. SWITCH YARD		
11. WELL DITCHED		
12. AND DRAINED		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/8 ← 25% ↑ ~~100%~~ 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: NONE ___(in.)
Depth to Free Water in Pit: NONE ___(in.)
Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test NO
___ Other (Explain in Remarks)

Remarks: YARD WELL SLOPED TO EAST (2' IN 100') N-S DITCH JUST EAST OF YARD OWNED BY CONWAY CORP
ELEC SWITCH YARD IS ON HIGH FILL WITH DITCHES AROUND SITE TO DRAIN.

CO-6B-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		VEG DOMINATED BY UPLAND SPECIES			
		AND NO HYD. EVIDENCE			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS FOR REACH 53+50 (EAST SIDE OF SOUTH DONAGEY DRIVE) TO STA 60+00 (SE CORNER OF CONWAY CORP ELEC. SWITCH STATION.

~~R-CO-B0-09~~

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W.R. HENSON	Date: 2/5/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-69-09

STA 60+00 TO 64+00 EAST SIDE OF ELEC. SWITCH YARD

STA 64+00 TO 71+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OBS	OBS, SHRB+V	
2. BERMUDA GRASS	HL	FACU
3. BROOMED SEDGE	HL	FACU
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9. NONE OBS	OBS, SHRB+V	
10. BERMUDA GRASS	HL	FACU
11. SODED SIDE YARD		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0% 0%

Remarks:

HYDROLOGY

- ___ Recorded Data (Describe in Remarks):
  - ___ Stream, Lake, or Tide Gauge
  - ___ Aerial Photographs
  - ___ Other
- √ No Recorded Data Available

Field Observations:

- Depth of Surface Water: NONE ___(in.)
- Depth to Free Water in Pit: NONE ___(in.)
- Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test ND
- ___ Other (Explain in Remarks)

Remarks: FROM STA 60+00 TO STA 71+00 THE ALIGNMENT IS ON THE LEFT SIDE OF A 4' WIDE B.W. CONCRETE DITCH. THE SIDE SLOPES ON THE DITCH VARY FROM 1ON3 TO 1ON4.

WELL DRAINED NO. HYD.

CO-69-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM NOT HYDRIC

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		ALIGNMENT ON SIDE SLOPE OR DITCH			
		VEG. DOM BY BERMUDA (UPLAND SPECIES)			
		SIDE SLOPES OR DITCH PROVIDES WELL			
		DRAINED OUTFALL ALIGNMENT			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 60+00 TO 71+00 ALONG WEST AND NORTH SIDE SLOPES OR DITCH TAKU A SUBDIVISION

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: N R HELSON	Date: 2/5/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-70-09

STA 71+00 TO STA 80+00
DITCH BOTTOM NOT PAVED

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. POST OAK	OS	FACU
2. S.R. OAK	OS	FACU
3. RED CEDAR	US	FACU
4. COM. LESPEDEZIA	HL	FACU
5. BROMED SEDGE	HL	FACU
6. BERMUDA GRASS	HL	FACU
7. ON SIDE SLOPE		
8.		
9. STA 71+00 TO STA 75+00		
10. DITCH HAS BEEN CLEANED OUT		
11. DOWNSTRM STA 75+50 NOT CLEANED		
12. IN PLACES DITCH BOTTOM IS COVERED		
13. WITH BERMUDA GRASS AND FESCUE		
14. ALL ACROSS BOTTOM		
15. NO OHWM		
16. SANDY LOAM BED & BANKS		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: ALIGNMENT IS ON NORTH SIDE OF DITCH. IT APPEARS SIDE SLOPES HAVE BEEN MOWED OCCASSIONALY

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)
Depth to Free Water in Pit: ___(in.)
Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test ND
___ Other (Explain in Remarks)

Remarks: SIDE SLOPES ARE 10:1 TO 10:1 AND PROVIDE GOOD DRAINAGE TO SIDE SLOPES AND ABOUT 50' LANDWARD, NO HYD. EVIDENCE

CO-70-09

SOILS

Map Unit Name (Series and Phase): MOUNTAINBURG GRAVELLY FINE SANDY LOAM NOT HYDRIC

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		ALIGNMENT IS WELL DRAINED			
		NO HYD. EVIDENCE			
		VEG. IS DOMINATED BY UPLANDS			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT RUNS FROM STA 7+00 TO STA 80+00 (WHERE ALIGNMENT DIVERGES FROM DITCH ACROSS YARDS

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 2/5/09
Applicant/Owner:	County: FAU
Investigator: W.R. HENSON	State: ARK.
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-71-09
(If needed, explain on reverse.)	

STA 80+00 TO STA 83+00

VEGETATION YARDS AND PAVED ROAD

Dominant Plant Species	Stratum	Indicator
1. ~~BGR~~ NONE	OS, VS, SAPL+V	
2. BERMUDA GRASS	NL	FACV
3. WILD ONIONS	NL	FACV
4.		
5. ACROSS CORNER BERMUDA GRASS		FACV
6. POST OAK	OS	FACV
7. LL PINE / BLACKBERRY	OS / OS	FAC / FACV
8. FESCUE / RED CEDAR (NO NEW SUCKLE)	NL / SHRB / V	FAC- / FACV / FAC-

Dominant Plant Species	Stratum	Indicator
9.		
10. } 0%		
11. }		
12.		
13. }		
14. }		
15. } 14%		
16. }		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NO NE ___(in.)

Depth to Free Water in Pit: ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- NONE ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: AREA DRAINED GOOD BY ROAD DITCHES

SOILS

Map Unit Name (Series and Phase): MOUNTAINBURG GRAVELLY FINE SANDY LOAM NOT HYDRIC

Drainage Class:

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		VEG. DOMINATED BY UPLAND SPECIES			
		AREA WELL DRAINED NO HYD. EVIDENCE			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 80+00 TO STA 83+00 YARDS AND PAVED ROAD

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: WR HENSON	Date: 2/5/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-72-09

STA 83+00 TO STA 86+00 ALIGNMENT IN NORTH SIDE OF FAUVER LN.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: SITE IS ASPHALT PAVEMENT NO VEG. NO WETLANDS OR WATERS OF U.S.

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

NONE

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

NONE

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: STORM DRAINAGE IN AREA NO HYD. EVIDENCE

CO-72-09

SOILS

Map Unit Name (Series and Phase): NO SOIL ASPHALT PAVEMENT

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: PT IS STA 83+00 TO STA 86+00
ALIGNMENT IS ALONG THE NORTH SIDE OF FAUVER LN (PAVED WITH ASPHALT)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 6/16/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-73-09

STA 86+00 TO 88+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB+V	
2. BERMUDA GRASS	DOM. HL	FACU
3. COM. LESPEDEZA	HL	FACU
4. DANDELION SP.	HL	FACU
5. CAREX SP	HL	FAC-OBL
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9. IN SPRUCE ROW JUST ON		
10. WEST EDGE OF ALIGNMENT		
11. RED CEDAR	SHRB	FACU-
12. HONEYSUCKLE	V	FAC-
13. TRUMPET CREEPER	V	FAC
14. WILD ROSE	V	FACU
15. COM. PRIVET	SHRB	FACU
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/4 25% 1/5 20%

Remarks: ALIGNMENT IS ALONG WEST (N-S) EDGE OF PASTURE ON AN OLD N-S ROADBED

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: (in.)
Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators: ALIGNMENT IS HIGH ROADBED WELL SLOPED AND DRAINED
Primary Indicators: NONE
___ Inundated
___ Saturated in Upper 12 Inches NO EVIDENCE OF HYD. INDICATORS
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: SMALL 70' DEPRESSIONAL LOW 50' EAST OF CO-74-09 50' ALIGNMENT SEE W.L. DATA PT CO-74-09

CO-73-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
	NO PIT DUG				
	SHALY GRAVEL ON SURFACE				

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS STA 86+00 TO 88+00
NO WETLANDS OR WATERS OF U.S.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W.R. HENSON	Date: 6/16/09 County: FAULKNER State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-7402

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRD + V	
2. CAREX SP	HL	FAC-OBL
3. ELEOCARUS SP	HL	FACW-OBL
4. SOFT RUSH	HL	FACW+
5. SMART WEED	HL	FACW-OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN LOW DEPRESSION IN PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

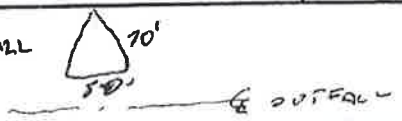
Depth of Surface Water:	12 (in.)
Depth to Free Water in Pit:	0 (in.)
Depth to Saturated Soil:	0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: LOW & SMALL



CO-7A-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (8)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 5/3	NONE		SILTY CLAY
1-2		10YR 4/3	"		" "
2-6		MIX 10YR 4/3 - MORE 10YR 5/6 - LESS	"		" "
6-12		MIX 10YR 4/3 - LESS 10YR 5/6 - MORE	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 70' WEST OF STA 86+80

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W. R. HENSON	Date: 6/16/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-~~FF~~-09 75

STA 88+00 TO 95+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. DALLAS GRASS	DOM HL	FAC+
2. COM. LESPEDEZA		FACU
3. SOME		
4. FESCUE	HL	FAC-
5. CAREX SP	HL	FAC-OBL
6. RANUNCULUS SP	HL	FAC-OBL
7.		
8.		
9. NONE OS, US, SHRB+V		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: AREA IS A HIGH SLIGHTLY ROLLING 1-2' FLAT IMPROVED PASTURE ALIGNMENT IS ON SOUTH EDGE OF A POWER LINE ROW

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

NONE

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks:

CO-75-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SILTY CLAY
1-2		10YR 5/3	"		" "
2-4		10YR 5/4	"		" "
4+1		10YR 5/6	"		" "

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: SOILS PIT IS AT LOWEST POINT IN REACH ABOUT STA 90+00

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PIT IS NEAR STA 90+00, REACH FROM 88+00 95+00 IS THE SAME

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 6/16/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-76-09
(If needed, explain on reverse.)	

95+00 TO STA 101+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE DS, VS, SH OBL+V		
2. CRAB GRASS DOM	HL	FACV
3. COM LESPEDEZA	HL	FACV
4. OCCASSIONAL		
5. FESCUE	HL	FAC-
6. RANUCULUS SP	HL	FAC-OBL
7. GREEN BRIER	HL	FAC
8. RYE GRASS		FACV
9. CHEAT GRASS	HL	FACU
10. BERMUDA GRASS	HL	FACV
11. WHITE CLOVER	HL	FACU
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0% ON DOM. 2/7 29% ON OCCASIONAL

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:
Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: (in.)
Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test ND
___ Other (Explain in Remarks)

Remarks: REACH WELL SLOPED 2-3' IN 100' NO OBSTRUCTIONS

CO-76-09

SOILS

Map Unit Name (Series and Phase): TART SILT LOAM (32)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		DOMINATED BY UPLAND SPECIES			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No NO PIT

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: AREA IS STA 95+00 TO STA 101+00
A NATURAL DRAIN CROSSES THE ALIGNMENT AT STA 98+00
DRAIN ~~ABOUT~~ ABOUT 1' WIDE BOT. WIDTH. BED AND BANKS
ARE SILTY CLAY. VEG IN BED & BANKS IS CAREX SP, SMART WEED SP
COM. PRIVET, RANUNCULUS SP,
VEG & SOILS IN BED AND BANKS ARE SAME NO OHWM
DRAIN AT STA 98+00 IS NOT A WATER OF U.S.
AT ABOUT 200' DOWNSTREAM THE DRAIN TURNS INTO A
GRASSED DRAINAGE SWALE.

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 6/16/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-77-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB, TV	
2. CAREX SP	HL	FAC-OBL
3. BERMUDA GRASS	HL	UPL
4. RANUNCULUS SP	HL	FAC-OBL
5. DALLAS GRASS	HL	FAC+
6. VIR. BUTTON WEED	HL	FACW
7. SMART WEED	HL	FACW-OBL
8. FESCUE	HL	FAC-
9. WOOLGRASS	HL	OBL
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 6/8 75%

Remarks: PT IS IN LOW IN PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0 (in.)
Depth to Free Water in Pit:	12 (in.)
Depth to Saturated Soil:	10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test 5/3
- ___ Other (Explain in Remarks)

Remarks: PT IS IN A LOW WINDING FLAT IN PASTURE

CO-77-09

SOILS

Map Unit Name (Series and Phase): LEADWALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/3	NONE		SILTY CLAY
1-3		10YR 5/3	NONE		" " MANY DK. RT. CH SILTY CLAY
3-12		10YR 5/4	"		FEW FAINT BLACK LENSES SILT CLAY
7-12		10YR 5/2	DARK BROWN	FEW - AVG	MANY OLD DK RT CH AND SMALL BLACK LENSES

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

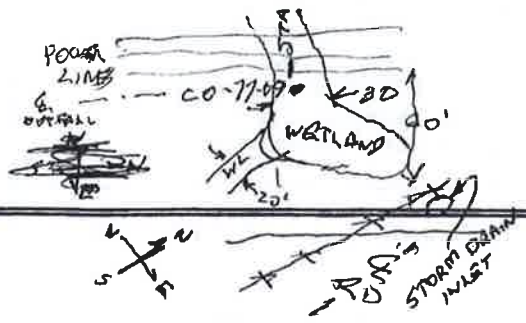
Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: PT IS IN LOW WINDING FLAT WETLAND IS ABOUT 30' WIDE AT ALIGNMENT CROSSING



BOUNDARIES BASED ON ELEVATION AND HYD. AREA ON BOTH SIDES OF WETLAND FROM STA 101+00 TO 102+80 (EDGE OF GERMAN LAKE (W-8) IS SIMILAR TO PT CO-76-09 AN UPLAND.

STA 103+30 @ GERMAN LAKE
PAVEMENT STA 102+80 TO STA 103+40

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 6/16/09
Applicant/Owner:	County: FAU
Investigator: W R HENSON	State: ARK
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-TB-05
(If needed, explain on reverse.)	

STA 103+30 TO STA 104+70

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB+V	
2. DALLAS GRASS } DOM	HL	FAC+
3. RESCUE } DOM	HL	FAC-
4. GREEN BRIER	HL	FAC
5. WILD ROSE	HL	FACU
6. BUCKEYE	HL	FACU
7. BLACK BERRY	HL	FAC
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/6 50 67%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- NONE ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- NONE ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO 3/1
- ___ Other (Explain in Remarks)

Remarks: PT 13 HIGH FLAT BETWEEN GERMAN LANE AND STONE DAM CREEK

CO-78-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM (32) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) ~~No~~ (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS HIGH FLAT
STA 105+20 STONE DAM CR CROSSING.
BED SOME ROCK, GRAVELLY, SOME SAND
BANKS ARE SILTY CLAY
NO VEG. IN BED, WITH SOFT RUSH, SMARTWEED, DAYFLOWER, CAREX SP ON BANK
SOILS + VEG IN BED + BANKS ARE DIFFERENT
HAS AN OHWM

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 6/16/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-79-09

STA 104 +80

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE 05	VS	SHRUB
2. SMARTWEED	HL	FACW-OBL
3. SOFT RUSH	HL	FACW+
4. CAREX SP	HL	FAC-OBL
5. RANUNCULUS SP	HL	FAC-OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: (in.)

Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ✓ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN LOW OVER BANK NEXT TO STONE DAM CR.

CO-19-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM (32) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		10YR 4/3	NONE		SILTY CLAY
1/4 INCH		10YR 5/6	11		SILT SAND LENSE
10-12		10YR 4/2	11		SAND SILT

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS IN LOW OVERBANK (SOUTHSIDE) OF STONE DAM CR

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL	Date: 6/16/09
Applicant/Owner:	County: FAU
Investigator: WR HENSON	State: AR
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID: CO-80-09
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE OBS. VS. SHR, +V		
2. SAGITTARIA (DOM)	HL	FACW-OBL
3. CAREX SP	HL	FAC-OBL
4. RANUNCULUS SP	HL	FAC-OBL
5. ELEOCHARUS SP	HL	FACW-OBL
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN LOW IN PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	1	(in.)
Depth to Free Water in Pit:	0	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN A 30' SHALLOW LOW DEPRESSION ABOUT 100' LONG

CD-BO-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2	NONE		SILTY CLAY
2-5		10YR 4/3	"		" " MANY FAINT DK RED SILTY CLAY
5-9		10YR 5/4	"		" " FEW VERY FAINT DK RED SILTY CLAY
9-12		10YR 5/3	DARK BROWN	FEW FAINT	" " FEW SMALL BLACK FE/MN LENSES

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS AT STA 106+25
GROUND 12" HIGHER AWAY FROM LOW
AND SIMILAR TO PT CO-78-09

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 6/16/09 County: FAV State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-81-09

STA 107+00 TO 121+00

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3. NONE			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: NO VEG ON GRAVEL FILL ROAD & DOWN CENTER OF ROAD STA 121+00 INSIDE HIGH GRAVELED + FENCED COMPOUND TO STA 121+80

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

NONE

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:

NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

NONE
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: ROAD FILL ABOUT 18" HIGH NO INUNDATION. A FEW PUDDLES ON ROAD

~~WETLAND~~ NO

CO-81-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B)

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO SOIL PIT DUG			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: STA 107+00 TO 121+00 ROAD 1-1.5' HIGHER THAN ADJACENT LAND.
ALIGNMENT DOWNG GRAVEL ROAD FILL (E-W)
WETLAND ON NORTH SIDE OF ROAD FROM STA 107+00 TO ABOUT STA 111+00
WETLAND BASED WATER 12" DEEP SOLID FM PRIMROSE (OBL)
SEE DATA POINT CO-84-09 DATED 8/25/09 SET IN WETLAND

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENDSON	Date: 6/16/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-B2-09

STA 121+80 TO STA 125+00

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB-T	V
2. BERMUDA GRASS	HL	FACU
3. COM. LESPEDEZIA (DOM)	HL	FACU
4. OCCASSIONAL		
5. RANUNCULUS SP	HL	FAC TO OBL
6. BITTER SNZ WEED	HL	FACU-
7. WHITE CLOVER	HL	FACU
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/5 20%

Remarks: REACH IS IN IMPROVED PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)

Depth to Free Water in Pit: NONE (in.)

Depth to Saturated Soil: NONE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: STARTS AREA THEN WELL SLOPED 1-2', MOD TO STONE DAM CR.

CO-82-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
		NO PIT DUG			
		DOM. BY UPLAND SPECIES			
		NO HYD. INDICATORS			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: UPLAND REACH FROM STA 121+80 (FENCED CON CORP EQUIPENT AREA TO STA 125+00 (WETLAND SEE DATA SHEET CO-83-09 DATED 6/10/09

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: WR HENSON	Date: 6/10/03 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-B3-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SHRB+V	
2.		
3. SOFT RUSH	HL	FACW+
4. CAREX SP	HL	FAC TO OBL
5. SMART WEED SP	HL	FACW TO OBL
6. FL. WTR. PRIMROSE	HL	OBL
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: PT IS IN LOW IN PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
✓ Saturated in Upper 12 Inches
✓ Water Marks
___ Drift Lines
✓ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IN LOW DEPRESSION
LOTS OF EVIDENCE OF PONDING. WATER IS HELD ON SITE BY HIGH GROUND AND/OR SPOIL PILES ON NORTH BANK OF STONE DAM CREEK

CO-83-09

SOILS

Map Unit Name (Series and Phase): TAFT SILT LOAM (32) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc.
0-2		10YR5/2	NONE			SILTY CLAY FEW FAINT OX. RT. CH.
2-5		10YR5/2	BRIGHT ORANGE	MANY	SOME STRONG	SAME AS ABOVE PLUS SOME SMALL BLACK LENSES
5-9	MIX	10YR5/2 / 10YR5/4	11	VERY FEW	VERY FAINT	SILTY CLAY / FEW VERY SMALL BLACK LENSES
9-13	MIX	10YR5/2 (LESS) / 10YR5/4 (MORE)	BRIGHT ORANGE	~~VERY FEW~~ MANY VERY FEW AND SMALL	BRIGHT	SILTY CLAY 11

Hydric Soil Indicators: LONG DURATION PONDING. AT 50' WEST OF PT IN THE LOW DEPRESSION THE SOILS AT 10" WERE 10YR 5/2 WITH STRONG ORANGE MOTTLES

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ✓ Other (Explain in Remarks)

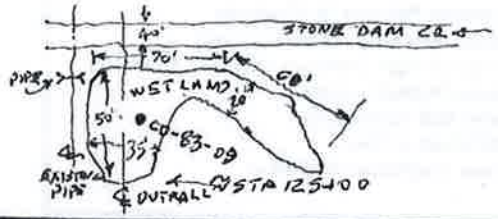
Remarks: SOILS CONSIDERED HYDRIC BASED ON EVIDENCE OF LONG DURATION PONDING

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: WETLAND IS ON OUTFALL ROW AS SHOWN BELOW IN DRAWING



Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W R HENSON	Date: 8/25/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-84-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB, V	
2. FL. WER. PRIMROSE (DOM)	HL	OBL
3. ELEOCHARIS SP	HL	FACW to OBL
4. HIBISCUS	HL	OBL
5. COFFEE BEAN	HL	FACW
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water:	2	(in.)
Depth to Free Water in Pit:	0	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: AREA ABOUT 30'X 50' WATER IS PONDED. NATURAL DRAINAGE IS FROM NORTH TO SOUTH IS NOW BLOCKED BY E-W GRAVEL ROAD FILL

CO-B4-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		BLACK			ORGANICS
1-2		10YR 5/3	NONE		CLAY
2-#7		10YR 5/2	FAINT ORANGE	MANY FAINT	CLAY SOME OLD OX RT. CH
#7-12		10YR 5/2			CLAY MANY OLD OX RT. CH.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ✓ Other (Explain in Remarks)

Remarks: SITE HAS BEEN INUNDATED, JUNE, JULY, AUG. SOILS ARE HYDRIC BASED ON LONG DURATION OF INUNDATION

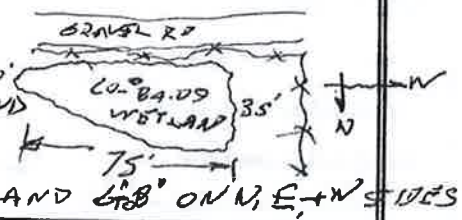
WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: PT IS 15' NORTH OF SOUTH E-W ROAD FENCE AND 85' EAST OF N-S FENCE

WETLAND IS ABOUT 35' WIDE ON WEST END AND 75' LONG WITH 10' WIDE ON EAST END GROUND ELEV GOES UP 12" ON ROAD SIDE AND 6"-8" ON N, E, + W SIDES



Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8-25-09 County: FAU State: ARK.
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-BS-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS.VS. SHRB+V	
2. FL WTR PRIMROSE	HL	OBL
3. ELEOCHARUS	HL	FACW-OBL
4. CAREX SP	HL	FAC-OBL
5. BARNYARD GRASS	HL	FACW-
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

√ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE ___(in.)

Depth to Free Water in Pit: ___(in.)

Depth to Saturated Soil: ___(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: GROUND ABOUT 12" HIGHER THAN AT PT CO-B4 30' TO WEST

CO-BS-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 4/2	NONE		CLAY
2-5		10YR 5/2	NONE		SILTY CLAY
5-11		10YR 5/3	LIGHT ORANGE	MANY WEAK	SILTY CLAY

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT 13 15' NORTH OF E-W SOUTH FENCE AND 70' EAST OF PT CO-BA-09

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8-25-09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-BG-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, US, SAB+V	
2. SMART WEED	HL	FACW-OBL
3. VIR. BUTTON WEED	HL	FACW
4. BARNYARD GRS,	HL	FACW-
5. BERMUDA GRS	HL	FACU
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

NONE

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:

NONE

- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: PT IS IN WEST END OF NARROW LOW ON NORTH SIDE OF GRAVEL RD.

CO-86-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (8) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3		10YR 3/2	NONE		SANDY SILT LOTS OF ORGANICS
3-8		10YR 5/3	"		SANDY SILT OX. R T. CH.
8-12		10YR 5/4	BROWN	FEW FAINT	SANDY SILT

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 350' ~~WEST~~ EAST PT CO-85-09 AND 20' NORTH OF SOUTH E-W FENCE AND ON NORTH SIDE OF ROAD. PT IS ABOUT STA 111+40. THIS POINT IS SIMILAR TO AREA 111+40 TO ~~AREA IS SIMILAR TO~~ STA 117+00 ON BOTH NORTH AND SOUTH SIDES OF ROAD

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: _____ Investigator: W R HENSON	Date: 8/25/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: CO-BT-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB+V	
2. SMART WEED	HL	FACW-OBL
3. BERMUDA GRASS	HL	FACU
4. PIG WEED	HL	FACU+
5. BITTER SNEEZE WEED	HL	FACW-
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/4 25%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ ___ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE? _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators: NONE
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required): NONE
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test NO
- ___ Other (Explain in Remarks)

Remarks: PT IS IN SLIGHT LOW THAT DRAINS TO WEST

CO-87-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 3/2	NONE		SANDY SILT LOTS OF ORGANICS
2-7		10YR 5/6	"		SANDY SILT
7-12		10 YR 5/6	DARK BROWN	FEW FAINT	SANDY SILT

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 250' EAST PT CO-86-09, ~~ADJ~~ 40' EAST & N-S FIELD RD, AND 30' NORTH OF E-W SOUTHFENCE GROUND IS 1-2' HIGHER EAST OF PT.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8/25/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-BB-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB + V	
2. SMART WEED	HL	FACW-OBL
3. ELEOCHARIS SP	HL	FACW-OBL
4. BARNYARD GRASS	HL	FACW-
5. FLT. WTR PRIMROSE	HL	OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE (in.)
Depth to Free Water in Pit: (in.)
Depth to Saturated Soil: (in.)

Wetland Hydrology Indicators:
Primary Indicators:
NONE
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS IN LOWEST PART OF A GRASS SWALE DRAINING INTO POND TO SOUTH

CO-BB-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4		10YR 4/2	NONE		SANDY SILT
4-B		10YR 5/3			SANDY SILT FEW FAINT OLD ORTICH
B-12		10YR 5/3	DARK BROWN TO DARK BROWN	SOME FAINT	SANDY SILT SOME BLACK LENSES APPEAR TO BE OLD BLACK SHALE CHIPS

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No (Circle)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 50' NORTH OF E-W SOUTH FENCE AND 180' EAST OF N-S FENCE
DUGSTOCK POND ON SOUTH SIDE OF FENCE & ROAD FROM PT WAS A GRASSED SWALE ENTERING AND EXITING THE POND
NO OTHER DUG STOCK POND IS NOT A "WATER OF U.S."

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8/25/09 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-BY-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB	✓
2. SMART WEED SP	HL	FACW-OBL
3. CAREX SP	HL	FAC-OBL
4. BARNYARD GRASS	HL	FACW-
5. FLT. WTR PRIMROSE	HL	OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: IN PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: NONE _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ✓ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: MANY SHALLOW TRACTOR RUTS IN AREA
PT IS IN A BROAD FLAT LOW

CO-B9-09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (B) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1		10YR 4/2	NONE		SILTY CLAY
1-3		10 YR 4/2	"		SILTY CLAY MANY ORG. CN.
3-8		10 YR 5/2	"		"
8-		10 YR 5/3	DARK BROWN	MANY VERY FAINT	SILTY CLAY SOME SMALL BLACK CONCR.

Hydric Soil Indicators: NONE

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks: PT IS 60' SOUTH OF E-W NORTH FENCE AND ABOUT 400' EAST OF WEST N-S FENCE ON SOUTH SIDE OF E-W GRAVEL ROAD

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: CONWAY OUTFALL Applicant/Owner: Investigator: W R HENSON	Date: 8/25/08 County: FAU State: ARK
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: Plot ID: CO-90-09

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. NONE	OS, VS, SHRB	✓
2. SMART WEED SP	HL	FACW-OBL
3. BARNYARD GRASS	HL	FACW-
4. HIBISCUS	HL	OBL
5. CAREX SP	HL	FAC-OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: IN LOW PASTURE

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NONE _____(in.)
Depth to Free Water in Pit: _____(in.)
Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
✓ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
✓ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: PT IS IN A NARROW N-S LOW

CO-90-~~B~~09

SOILS

Map Unit Name (Series and Phase): LEADVALE SILT LOAM (8) Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2		10YR 3/2	NONE		SILTY CLAY
2-4		10YR 5/2	"		SILTY CLAY MANY STRONG OXIDITY
4-8		10YR 5/3	"		"
8-12		10YR 5/2	DARK BROWN	MANY FAINT	SILTY CLAY

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

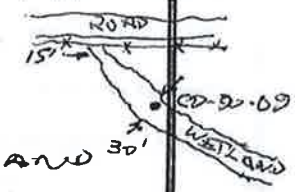
Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: WETLAND IS ABOUT 30' WIDE E-W AT PT. PT IS 50' SOUTH OF E-W NORTH FENCE AND SOUTH OF E-W GRAVEL ROAD
WETLAND IS ABOUT 15' WIDE AT FENCE
WETLAND GOES SE FROM PT
EAST AND WEST OF WETLAND GROUND IS 6"+ HIGHER AND DOMINATED BY BERMUDA GRASS



DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID:	Swale
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:	
Is the area a potential Problem Area?	Yes	(No)	Plot ID:	Dp 1
(If needed, explain on reverse.)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow oak, Quercus phellos	T	FACW-
2	Winged Elm, Ulmus alata	S	FACU+
3	Grape, Vitis spp.	V	FAC*
4	Moss spp., Hylocomiastrum spp.	H	NL
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) 50%

Remarks: 3 78% of Vitis species occurring in Region 2 are FAC or wetter. Does not meet hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water:	(in.)	-
Depth to Free Water in Pit:	(in.)	>12
Depths to Saturated Soil:	(in.)	>12

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

X Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Does not meet hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft Silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0 - 2	Humus				
2 - 12		10YR 4/2	10YR 5/6	Common / Faint	Silty Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)			
Wetland Hydrology Present?	Yes	(No)	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	(Yes)	No			

Remarks: Does not meet all wetland criteria

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Fallow Pasture
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 2
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species		Stratum	Indicator
1	purple lovegrass,	Eragrostis spectabilis	H	FACU
2	Switchgrass,	Panicum virgatum	H	FAC+
3	sedge,	Carex spp.	H	FAC'
4	blackberry,	Rubus betulifolius	S	FAC
5	yellow foxtail,	Setaria glauca	H	FAC
6	meadow beauty,	Rhexia species	H	FACW+
7	Rosette grass	Dicanthelium scoparium	H	FACW
8	Iron weed,	Vernonia arkansana	H/S	FAC
9				

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-)

Remarks: 18 40% of Carex species occurring in Region 2 are FAC or wetter.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >18

Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

X Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

X FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria based on the presence of 2 or more secondary characteristics.

SOILS

Map Unit Name (Series and Phase): Taft silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-18		10YR 4/2	10YR 5/6	few/Distinct	clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 2 with mottles in the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:		State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Wooded Area
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 3
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	white oak, Quercus alba	T	FACU
2	Sweetgum, Liquidambar strycaflua	T/S	FAC
3	Smartweed, Polygonum pensylvanicum	H	FACW
4	Sedge, Carex spp.	H	FAC'
5	Rosette grass, Dichanthelium commutatum	H	FAC
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: '84% of Carex species occurring in Region 2 are FAC or wetter.
Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) —
Depth to Free Water in Pit: (in.) >18
Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Does not meet hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft silt loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-1	Humus				
1-18		10YR 4/2	10YR 5/4	few/faint	clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Low chroma colors, but faint and few mottles. Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	Yes	(No)	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp4

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Green ash, Fraxinus pennsylvanica	T	FACW
2	Chinese privet, Ligustrum sinense	T/S	FAC
3	Eastern Redcedar, Juniperus virginiana	T	FACU
4	Nettle spp., Boehmeria cylindrica	H	FACW+
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-2
Depth to Free Water in Pit: (in.) 4
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft Silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-10		10 YR 5/1	10 YR 5/8	common / Distinct	clay loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
X	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
X	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 1 in the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.
Small depressional area that was saturated and inundated; with no vegetation within the floor.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:		State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp5
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow, Salix spp.	S	OBL
2	Cotton wood, Populus deltoides	S	FAC+
3	Smartweed, Polygonum pennsylvanicum	H	FACW
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >22

Depths to Saturated Soil: (in.) >22

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

X FAC-Neutral Test

X Other (Explain in Remarks) Algal mats

Remarks: Algal mats throughout depression in sandy soil. Meets hydrology criteria based on the presence of 2 secondary indicators.

SOILS

Map Unit Name (Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-22		10YR 5/4	—	—	Sand

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)

Remarks: Arkansas River floodplain. Soil profile comprised entirely of sand. Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 6
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	willow, Salix spp.	S	OBL
2	smartweed, Polygonum pennsylvanicum	H	FACW
3	Johnson grass, Sorghum halapense	H	FACU
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) —
Depth to Free Water in Pit: (in.) > 22
Depths to Saturated Soil: (in.) > 22

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
X Other (Explain in Remarks) Algal mats

Remarks: meets hydrology criteria.

SOILS

Map Unit Name
(Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained
Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-4		10 YR 4/2	10YR 5/1 & 4/6	few / faint	silty loam
4-22		10 YR 5/4	10YR 5/8	few / distinct	sand

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria. Depressional area on banks of Arkansas River.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:		Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM + AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID:
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 7
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow, Salix spp.	T/S	OBL
2	Buttonbush, Cephalanthus occidentalis	S	OBL
3	smartweed, Polygonum pennsylvanicum	H	FACW
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-): >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observations
- Depth of Surface Water: (in.) —
- Depth to Free Water in Pit: (in.) >18
- Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- X Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- X Other (Explain in Remarks) Algal mats

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name
(Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained
Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-10		10YR 4/2	10YR 4/6	common / faint	silty clay loam
10-18		10YR 3/2	—	—	"

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria. Depressional area (large) within levee system of Arkansas River.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Dense wooded Area
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 8
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	American elm, Ulmus americana	T/s	FACW
2	Chinese privet, Ligustrum sinense	T/s	FAC
3			
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: Privet thicket. Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >6

Depths to Saturated Soil: (in.) >6

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

X Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Thick root structure inhibited further soil boring. Some water-stained leaves. Meets hydrology criteria.

SOILS

Map Unit Name
(Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained
Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-6		10YR 5/4	—	—	silty loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

Is the Sampling Point Within a Wetland? Yes (No)

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Wooded Riparian Zone
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 9
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	American elm, Ulmus americana	T	FACW
2	Green ash, Fraxinus pensylvanica	T	FACW
3	willow oak, Quercus phellos - associated	T	FACW
4	Chinese privet, Ligustrum sinense	S	FAC
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) –

Depth to Free Water in Pit: (in.) >16

Depths to Saturated Soil: (in.) >16

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

X Drift Lines

X Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

X Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria. Few water-stained leaves.

SOILS

Map Unit Name (Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-1		10YR 4/2	—	—	clay loam
1-16		10YR 5/4	10YR 5/6	few/faint	"

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? Yes (No)

Is the Sampling Point Within a Wetland? Yes (No)

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Zone
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp10

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species		Stratum	Indicator
1	American Elm,	Ulmus americana	T	FACW
2	Green ash,	Fraxinus pennsylvanica	T	FACW
3	Persimmon,	Diospyros virginiana	S/T	FAC
4	Buttonbush,	Cephalanthus occidentalis	S	OBL
5	Smartweed,	Polygonum pensylvanicum	H	FACW
6	Sedge spp.,	Carex spp.	H	FAC[1]
7	Greenbrier,	Smilax spp.	V	FAC[2]
8				
9				

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: [1]84% of Carex species occurring in Region 2 are FAC or wetter. [2]83% of Smilax species occurring in Region 2 are FAC or wetter. Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-1
Depth to Free Water in Pit: (in.) 6
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-6		10YR 5/2	10YR 5/8	common / Distinct	clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 2 within the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM + AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Depression Edge
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: OBL

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species		Stratum	Indicator
1	Black willow,	Salix nigra	T	OBL
2	Willow Oak,	Quercus phellos		FACW-
3				
4				
5				
6				
7				
8				
9				

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) 100%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-2
Depth to Free Water in Pit: (in.) —
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
X Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Area (depression) receives runoff from adjacent rice field. This depression had flow during the site visit. Meets hydrology Criteria.

SOILS

Map Unit Name (Series and Phase): Perry Clay

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Refer to CO-15 Data.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No			
Wetland Hydrology Present?	Yes	No	Is the Sampling Point Within a Wetland?	Yes	No
Hydric Soils Present?	Yes	No			

Remarks: Refer to CO-15 and CO-13 Data, Observation point.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-2010
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Dep. Wetland
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: OB2

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Sugarberry, Celtis laevigata	T	FACW
2	American Elm, Ulmus americana	T	FACW
3	Trumpet Creeper, Campsis radicans	V	FAC
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) 0-1

Depth to Free Water in Pit: (in.) —

Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

X Saturated in Upper 12 Inches

X Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Roxana very fine sandy loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
Surface		10YR 4/2 - 4/1			

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Isolated depression adjacent to Arkansas River levee. Meets all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID:	Swale
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:	
Is the area a potential Problem Area?	Yes	(No)	Plot ID:	Dp 1
(If needed, explain on reverse.)				

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow oak, Quercus phellos	T	FACW-
2	Winged Elm, Ulmus alata	S	FACU+
3	Grape, Vitis spp.	V	FAC[3]
4	Moss spp., Hylocomiastrum spp.	H	NL
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) 50%

Remarks: 3 78% of Vitis species occurring in Region 2 are FAC or wetter. Does not meet hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >12

Depths to Saturated Soil: (in.) >12

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

X Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Does not meet hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft Silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0 - 2	Humus				
2 - 12		10YR 4/2	10YR 5/6	Common / Faint	Silty Loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)			
Wetland Hydrology Present?	Yes	(No)	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	(Yes)	No			

Remarks: Does not meet all wetland criteria

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Fallow Pasture
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 2
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species		Stratum	Indicator
1	purple lovegrass,	Eragrostis spectabilis	H	FACU
2	switchgrass,	Panicum virgatum	H	FAC+
3	sedge,	Carex spp.	H	FAC'
4	blackberry,	Rubus betulifolius	S	FAC
5	yellow foxtail,	Setaria glauca	H	FAC
6	meadow beauty,	Rhexia species	H	FACW+
7	Rosette grass	Dicanthelium scoparium	H	FACW
8	Iron weed,	Vernonia arkansana	H/S	FAC
9				

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-)

Remarks: 184% of Carex species occurring in Region 2 are FAC or wetter.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >18

Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

X Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

X FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria based on the presence of 2 or more secondary characteristics.

SOILS

Map Unit Name (Series and Phase): Toft Silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-18		10YR 4/2	10YR 5/6	few/Distinct	clay loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 2 with mottles in the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:		State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Wooded Area
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 3
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	White oak, Quercus alba	T	FACU
2	Sweetgum, Liquidambar strycaflua	T/S	FAC
3	Smartweed, Polygonum pensylvanicum	H	FACW
4	Sedge, Carex spp.	H	FAC'
5	Rosette grass, Dichanthelium commutatum	H	FAC
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: '84% of Carex species occurring in Region 2 are FAC or wetter.
Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) ---
Depth to Free Water in Pit: (in.) >18
Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Does not meet hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft silt loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-1	Humus				
1-18		10YR 4/2	10YR 5/4	few / faint	clay loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Low chroma colors, but faint and few mottles. Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	Yes	(No)	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp4
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Green ash, Fraxinus pennsylvanica	T	FACW
2	Chinese privet, Ligustrum sinense	T/S	FAC
3	Eastern Redcedar, Juniperus virginiana	T	FACU
4	Nettle spp., Boehmeria cylindrica	H	FACW+
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-): >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-2
Depth to Free Water in Pit: (in.) 4
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Taft Silt Loam

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-10		10 YR 5/1	10 YR 5/8	common / Distinct	clay loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
X	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
X	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 1 in the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.

Small depressional area that was saturated and inundated; with no vegetation within the floor.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:		State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp5
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow, Salix spp.	S	OBL
2	Cottonwood, Populus deltoides	S	FAC+
3	Smartweed, Polygonum pensylvanicum	H	FACW
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >22

Depths to Saturated Soil: (in.) >22

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

___ Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

X FAC-Neutral Test

X Other (Explain in Remarks) Algal mats

Remarks: Algal mats throughout depression in sandy soil. Meets hydrology criteria based on the presence of 2 secondary indicators.

SOILS

Map Unit Name (Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-22		10YR 5/4	—	—	Sand

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Arkansas River floodplain. Soil profile comprised entirely of sand. Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Depression
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: DP 6
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	willow, Salix spp.	S	OBL
2	smartweed, Polygonum pennsylvanicum	H	FACW
3	Johnson grass, Sorghum halapense	H	FACU
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >22

Depths to Saturated Soil: (in.) >22

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

X Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

X Other (Explain in Remarks) Algal mats

Remarks: meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-4		10 YR 4/2	10YR 5/1 & 4/6	few / faint	silty loam
4-22		10 YR 5/4	10YR 5/8	few / distinct	sand

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is the Sampling Point Within a Wetland? (Yes) No

Remarks: Meets all wetland criteria. Depressional area on banks of Arkansas River.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:		Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM + AAS	State:	AR
Do Normal Circumstances exist on this site?	(Yes) / No	Community ID:	
Is the site significantly disturbed (Atypical Situation)?	Yes / (No)	Transect ID:	
Is the area a potential Problem Area?	Yes / (No)	Plot ID:	Dp 7
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Willow, Salix spp.	T/S	OBL
2	Buttonbush, Cephalanthus occidentalis	S	OBL
3	Smartweed, Polygonum pennsylvanicum	H	FACW
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-): >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other
- X No Recorded Data Available

Field Observations
- Depth of Surface Water: (in.) —
- Depth to Free Water in Pit: (in.) >18
- Depths to Saturated Soil: (in.) >18

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- X Other (Explain in Remarks) Algal mats

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Roxana very fine sandy loam

Drainage Class: Well Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-10		10YR 4/2	10YR 4/6	common / faint	silty clay loam
10-18		10YR 3/2	—	—	"

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	____	Other (Explain in Remarks)

Remarks: meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria. Depressional area (large) within levee system of Arkansas River.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Dense wooded Area
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 8
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	American elm, Ulmus americana	T/s	FACW
2	Chinese privet, Ligustrum sinense	T/s	FAC
3			
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: Privet thicket. Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) —

Depth to Free Water in Pit: (in.) >6

Depths to Saturated Soil: (in.) >6

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

___ Drift Lines

X Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

___ Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Thick root structure inhibited further soil boring. Some water-stained leaves. Meets hydrology criteria.

SOILS

Map Unit Name
(Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained
Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structures, etc.
0-6		10YR 5/4	—	—	silty loam

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)

Remarks: Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Wooded Riparian Zone
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp 9
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	American elm, Ulmus americana	T	FACW
2	Green ash, Fraxinus pensylvanica	T	FACW
3	willow oak, Quercus phellos - associated	T	FACW
4	Chinese privet, Ligustrum sinense	S	FAC
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-): > 51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

Recorded Data (Describe in Remarks)

___ Stream, Lake, or Tide Gauge

___ Aerial Photographs

___ Other

X No Recorded Data Available

Field Observations

Depth of Surface Water: (in.) –

Depth to Free Water in Pit: (in.) >16

Depths to Saturated Soil: (in.) >16

Wetland Hydrology Indicators

Primary Indicators:

___ Inundated

___ Saturated in Upper 12 Inches

___ Water Marks

X Drift Lines

X Sediment Deposits

___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 Inches

X Water-Stained Leaves

___ Local Soil Survey Data

___ FAC-Neutral Test

___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria. Few water-stained leaves.

SOILS

Map Unit Name (Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-1		10YR 4/2	—	—	clay loam
1-16		10YR 5/4	10YR 5/6	few/faint	"

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)

Remarks: Does not meet hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	Yes	(No)
Hydric Soils Present?	Yes	(No)			

Remarks: Does not meet all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-13-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Riparian Zone
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: Dp10

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species		Stratum	Indicator
1	American Elm,	Ulmus americana	T	FACW
2	Green ash,	Fraxinus pennsylvanica	T	FACW
3	Persimmon,	Diospyros virginiana	S/T	FAC
4	Buttonbush,	Cephalanthus occidentalis	S	OBL
5	Smartweed,	Polygonum pensylvanicum	H	FACW
6	Sedge spp.,	Carex spp.	H	FAC[1]
7	Greenbrier,	Smilax spp.	V	FAC[2]
8				
9				

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) > 51%

Remarks: [1]84% of Carex species occurring in Region 2 are FAC or wetter. [2]83% of Smilax species occurring in Region 2 are FAC or wetter. Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-1
Depth to Free Water in Pit: (in.) 6
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name (Series and Phase): Amy, frequently flooded

Drainage Class: Poorly Drained

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
0-6		10YR 5/2	10YR 5/8	common / Distinct	clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria based on a chroma of 2 within the upper 10" of the soil profile.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Meets all wetland criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Donnell Ridge Gravity Collector	Date:	8-12-10
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Depression Edge
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: OBL

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Black willow, Salix nigra	T	OBL
2	Willow Oak, Quercus phellos		FACW-
3			
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) 100%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-2
Depth to Free Water in Pit: (in.) —
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
X Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Area (depression) receives runoff from adjacent rice field. This depression had flow during the site visit. Meets hydrology Criteria.

SOILS

Map Unit Name (Series and Phase): Perry Clay

Drainage Class: _____

Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Other (Explain in Remarks)

Remarks: Refer to CO-15 Data.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No			
Wetland Hydrology Present?	Yes	No	Is the Sampling Point Within a Wetland?	Yes	No
Hydric Soils Present?	Yes	No			

Remarks: Refer to CO-15 and CO-13 Data, Observation point.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	Tupelo Bayou WWTP Outfall	Date:	8-12-2010
Applicant/Owner:	Conway Corporation	County:	Faulkner
Investigator:	RCM & AAS	State:	AR

Do Normal Circumstances exist on this site?	(Yes)	No	Community ID: Dep. Wetland
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID: OB 2

(If needed, explain on reverse.)

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Sugarberry, Celtis laevigata	T	FACW
2	American Elm, Ulmus americana	T	FACW
3	Trumpet Creeper, Campsis radicans	V	FAC
4			
5			
6			
7			
8			
9			

Percent of Dominant Species that are OBL, FACW or FAC (exclude FAC-) >51%

Remarks: Meets hydrophytic vegetation criteria.

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations
Depth of Surface Water: (in.) 0-1
Depth to Free Water in Pit: (in.) —
Depths to Saturated Soil: (in.) 0

Wetland Hydrology Indicators
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
X Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Meets hydrology criteria.

SOILS

Map Unit Name
(Series and Phase): Roxana very fine sandy loam

Drainage Class: Poorly Drained
Field Observations Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup) _____

Profile Description:

Depth (inches)	Horizons	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concreteions, Structures, etc.
Surface		10YR 4/2 - 4/1			

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soils
_____	Aquic Moisture Regime	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Meets hydric soils criteria.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No			
Wetland Hydrology Present?	(Yes)	No	Is the Sampling Point Within a Wetland?	(Yes)	No
Hydric Soils Present?	(Yes)	No			

Remarks: Isolated depression adjacent to Arkansas River levee.
Meets all wetland criteria.

Approved by HQUSACE 3/92

Appendix H

Correspondence Regarding Threatened and Endangered Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
110 South Amity Road, Suite 300
Conway, Arkansas 72032
Tel.: 501/513-4470 Fax: 501/513-4480

IN REPLY REFER TO:

July 21, 2009

Reference: I0710; FA0709

Freddie Walker
Garver Engineers
1010 Battery St
PO Box 50
Little Rock, AR 72203

Dear Mr. Walker:

The Fish and Wildlife Service has reviewed the information supplied in your letter, dated April 7, 2009, regarding the proposed construction of a new wastewater treatment plant and collection system in Faulkner County, Arkansas. Our comments are submitted in accordance with the Endangered Species Act (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.) and the Migratory Bird Treaty Act (16 U.S.C. 703-712).

From the information you provided, the proposed wastewater pipeline outfall for this project occurs along a section of shoreline on the Arkansas River. Sandbars and barren islands along this river are preferred habitat for the endangered interior least tern (*Sterna antillarum athalassos*), and there is a known nesting site located within a mile downstream and directly across the river from the project area. The construction of the pipeline and outfall should not have any affects; however the effluent may have an affect depending on constituents, their concentration, and the volume of discharge. Therefore, a more thorough assessment of the outfall and coordination with ADEQ may be needed in order to assess possible impacts to the interior least tern.

Please feel free to contact us with any questions you may have, and we appreciate your interest in the conservation of endangered species. If you have any questions, please call Lindsey Lewis at (501) 513-4489 or Tommy Inebnit at (501) 513-4472.

Sincerely,

Mark Sattelberg
Field Supervisor

Scott Henderson
Director

Loren Hitchcock
Deputy Director

Keeping the Natural State natural.

Arkansas Game and Fish Commission

Mike Gibson
Assistant Director

Mike Armstrong
Assistant Director

January 13, 2010

Mr. Freddie Walker, E.I.
Garver, LLC
4701 Northshore Drive
North Little Rock AR 72118

Re: Conway Corporation Tupelo Bayou Wastewater Treatment Plant
Garver Project No. 08057000

Dear Mr. Walker:

Biologists from our agency have reviewed the above referenced subject located in Faulkner County, Arkansas. We are submitting the following comments to reduce possible impacts to fish and wildlife resources.

- All wetlands in the project area should be avoided or impacts should be minimized where possible. Unavoidable impacts should be mitigated.
- All stream crossings should use best management practices for erosion control.
- Stream crossing sites should be surveyed for freshwater mussels or evaluated by a malacologist to assess their potential for freshwater mussels.
- Large streams should be crossed by attaching a pipe to a bridge if possible or by boring under the streambed. If these two options are unachievable, then the work should be scheduled for June, July, or August to avoid peak spawning times and our agency should be contacted prior to construction.

We recommend that you contact the U.S. Fish and Wildlife Service for an endangered species review, since our agency adheres to the federal listing and you will need to get clearance from them. Their address is 110 South Amity Rd., Suite 300, Conway, Arkansas 72032.

If our agency can be of further assistance, please feel free to contact us.

Sincerely,

Robert K. Leonard

Robert K. Leonard, Biologist
River Basins Division

Cc: Mark Oliver
David Goad
USFWS, Conway Office
State Clearinghouse

The Department of
Arkansas
Heritage

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council
.
Arkansas Historic
Preservation Program
.
Delta Cultural Center
.
Historic Arkansas Museum
.
Mosaic Templars
Cultural Center
.
Old State House Museum

Arkansas Natural Heritage
Commission
1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9619
fax: (501) 324-9618
tdd: (501) 324-9811
e-mail:
arkansas@naturalheritage..org
website:
www.naturalheritage.com
An Equal Opportunity Employer

Date: January 25, 2010
Subject: Elements of Special Concern
Conway Corp. Tupelo Bayou Wastewater Treatment Plant
Garver Project No. 0805700
ANHC No.: P-CF..-10-002

Mr. Freddie Walker
Garver, LLC
4701 Northshore Drive
North Little Rock, AR 72118

Dear Mr. Walker:

Staff members of the Arkansas Natural Heritage Commission have reviewed our files for records indicating the occurrence of rare plants and animals, outstanding natural communities, natural or scenic rivers, or other elements of special concern within or near the proposed new sewer pipeline corridor that will run from the proposed central pump station in the vicinity of the Stone Dam Wastewater Treatment Plant to the Tupelo Bayou Wastewater Treatment Plant. The project will include over seven miles of pipeline. The majority of the route will be located within or adjacent to the Entergy powerline easement and along edges of cultivated farmland. We find no records at present time.

Faulkner, Conway, and Perry County Element Lists area enclosed for your reference. Represented on these lists are elements for which we have records in our database. The lists have been annotated to indicate those elements known to occur within a one and a five mile radius of the project site. A legend is enclosed to help you interpret the codes used on this list.

Please keep in mind that the project area may contain important natural features of which we are unaware. Staff members of the Arkansas Natural Heritage Commission have not conducted a field survey of the study route. Our review is based on data available to the program at the time of the request. It should not be regarded as a final statement on the elements or areas under consideration. Because our files are updated constantly, you may want to check with us again at a later time.

Thank you for consulting us. It has been a pleasure to work with you on this study.

Sincerely,

Cindy Osborne

Cindy Osborne
Data Manager/Environmental Review Coordinator

Enclosures: Legend
Faulkner, Perry, Conway County Element Lists (annotated)
Invoice

8/22/2009

Arkansas Natural Heritage Commission
Department of Arkansas Heritage
Inventory Research Program
Faulkner County

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
	Animals-Invertebrates					
✓*	*Cicindela hirticollis*	beach-dune tiger beetle	-	INV	G5	S2S3
	Lampsilis satura	sandbank pocketbook	-	INV	G2	S2
	Lirceus garmani	an isopod	-	INV	GNR	S1
	Pleurobema rubrum	pyramid pigtoe	-	INV	G2G3	S2
	Speyeria diana	Diana	-	INV	G3G4	S2S3
	Toxolasma lividus	purple lilliput	-	INV	G2	S2
	Villosa lienosa	little spectaclecase	-	INV	G5	S3
	Animals-Vertebrates					
✓	*Atractosteus spatula*	alligator gar	-	INV	G3G4	S2?
	Cemophora coccinea copei	northern scarlet snake	-	INV	G5T5	S3
	Chrysemys picta dorsalis	southern painted turtle	-	INV	G5	S3
	Deirochelys reticularia miaria	western chicken turtle	-	INV	G5T5	S3
✓	*Haliaeetus leucocephalus*	Bald Eagle	-	INV	G5	S2B,S4N
	Hyla avivoca	bird-voiced treefrog	-	INV	G5	S3
	Ophisaurus attenuatus attenuatus	western slender glass lizard	-	INV	G5T5	S3
✓	*Pandion haliaetus*	Osprey	-	INV	G5	S1B,S4N
✓	*Pseudacris streckeri*	Strecker's chorus frog	-	INV	G5	S2
	Rana areolata circulosa	northern crawfish frog	-	INV	G4T4	S2
	Regina septemvittata	queen snake	-	INV	G5	S2
	Sterna antillarum athalassos	Interior Least Tern	LE	INV	G4T2Q	S2B
	Thryomanes bewickii	Bewick's Wren	-	INV	G5	S2B,S3N
	Plants-Vascular					
	Asclepias obovata	savannah milkweed	-	INV	G5?	S2
	Carex fissa var. fissa	a caric sedge	-	INV	G4?T3T4	S1
	Carex normalis	a caric sedge	-	INV	G5	S1
	Carex opaca	a caric sedge	-	SE	G5T4	S2S3
	Castanea pumila var. ozarkensis	Ozark chinquapin	-	INV	G5T3	S3S4
	Claytonia ozarkensis	Ozark spring beauty	-	INV	G1G3Q	S2
✓	*Draba aprica*	open-ground whitlow-grass	-	ST	G3	S2
✓	*Eleocharis wolfii*	Wolf's spike rush	-	INV	G3G4	S3
	Gymnopogon brevifolius	shortleaf skeletongrass	-	INV	G5	S2
	Heuchera villosa var. arkansana	Arkansas alumroot	-	INV	G5T3Q	S3
	Minuartia drummondii	a sandwort	-	INV	G5	S2S3
	Nemastylis nuttallii	Nuttall's pleat-leaf	-	INV	G4	S2
✓	*Neviusia alabamensis*	Alabama snow wreath	-	ST	G2	S1S2
	Paronychia virginica	nailwort	-	INV	G4	S2
	Paspalum bifidum	pitchfork paspalum	-	INV	G5	SH
	Philadelphus hirsutus	mock orange	-	INV	G5	S2S3
	Platanthera peramoena	purple fringeless-orchid	-	ST	G5	S2
	Podostemum ceratophyllum	riverweed	-	INV	G5	S3
	Potamogeton pulcher	spotted pondweed	-	INV	G5	S3
	Potentilla arguta	tall cinquefoil	-	ST	G5	S1S2
	Prenanthes aspera	rough rattlesnake-root	-	INV	G4?	S1S2
✓	*Rhynchospora cephalantha*	capitate beakrush	-	INV	G5	SH

8/22/2009

Arkansas Natural Heritage Commission
Department of Arkansas Heritage
Inventory Research Program
Perry County

	Scientific Name	Common Name	Federal Status	State Status	Global Rank	State Rank
	Animals-Invertebrates					
	Alloperla caddo	Caddo sallfly	-	INV	G2	S1
	Caecidotea holti	an isopod	-	INV	GNR	S1
✓	*Cicindela hirticollis*	beach-dune tiger beetle	-	INV	G5	S2S3
	Cicindela macra	sandy stream tiger beetle	-	INV	G5	S2S3
	Lampsilis satura	sandbank pocketbook	-	INV	G2	S2
	Leptodea leptodon	scaleshell	LE	INV	G1G2	S1
	Obovaria jacksoniana	southern hickorynut	-	INV	G2	S2
	Ochrotrichia robisoni	a microcaddisfly	-	INV	G1G3	S1
	Toxolasma lividus	purple lilliput	-	INV	G2	S2
	Villosa lienosa	little spectaclecase	-	INV	G5	S3
	Animals-Vertebrates					
	Ambystoma annulatum	ringed salamander	-	INV	G4	S3
✓	*Atractosteus spatula*	alligator gar	-	INV	G3G4	S2?
	Cemophora coccinea copei	northern scarlet snake	-	INV	G5T5	S3
	Crotalus atrox	western diamondback rattlesnake	-	INV	G5	S2
	Eurycea quadridigitata	dwarf salamander	-	INV	G5	S3
✓	*Haliaeetus leucocephalus*	Bald Eagle	-	INV	G5	S2B,S4N
	Hemidactylium scutatum	four-toed salamander	-	INV	G5	S3
	Hyla avivoca	bird-voiced treefrog	-	INV	G5	S3
	Notropis ortenburgeri	Kiamichi shiner	-	INV	G3	S2
	Pantherophis emoryi	Great Plains rat snake	-	INV	G5	S3
	Percina nasuta	longnose darter	-	INV	G3	S2
	Picoides borealis	Red-cockaded Woodpecker	LE	INV	G3	S2
✓	*Pseudacris streckeri*	Strecker's chorus frog	-	INV	G5	S2
✓	*Sterna antillarum athalassos*	Interior Least Tern	LE	INV	G4T2Q	S2B
	Plants-Vascular					
	Amorpha ouachitensis	Ouachita indigo bush	-	INV	G3Q	S3
	Amsonia hubrichtii	Ouachita bluestar	-	INV	G3	S3
	Bergia texana	Texas bergia	-	INV	G5	S2
	Calamovilfa arcuata	Cumberland sandreed	-	INV	G2	S1
	Carex pensylvanica	Pennsylvania caric sedge	-	INV	G5	S3
	Castanea pumila var. ozarkensis	Ozark chinquapin	-	INV	G5T3	S3S4
	Cypripedium kentuckiense	Kentucky lady's-slipper	-	INV	G3	S3
	Dulichium arundinaceum var. arundinaceum	threeway sedge	-	INV	G5TNR	S2S3
	Eleocharis wolfii	Wolf's spike rush	-	INV	G3G4	S3
	Gratiola brevifolia	sticky hedge-hyssop	-	INV	G4	S3
	Hedyotis ouachitana	Ouachita bluets	-	INV	G3	S3
	Helianthus occidentalis ssp. plantagineus	plantain-leaf sunflower	-	INV	G5T2T3	S1
	Liatris compacta	Ouachita blazing star	-	INV	G5T3	S3
	Marshallia caespitosa var. signata	Barbara's buttons	-	INV	G4T4	S1
	Philadelphus hirsutus	mock orange	-	INV	G5	S2S3
	Podostemum ceratophyllum	riverweed	-	INV	G5	S3
	Potamogeton pulcher	spotted pondweed	-	INV	G5	S3
	Ptilimnium nodosum	harperella	LE	INV	G2	S2

LEGEND

STATUS CODES

FEDERAL STATUS CODES

C	=	Candidate species. The U.S. Fish and Wildlife Service has enough scientific information to warrant proposing this species for listing as endangered or threatened under the Endangered Species Act.
LE	=	Listed Endangered; the U.S. Fish and Wildlife Service has listed this species as endangered under the Endangered Species Act.
LT	=	Listed Threatened; the U.S. Fish and Wildlife Service has listed this species as threatened under the Endangered Species Act.
-PD	=	Proposed for Delisting; the U.S. Fish and Wildlife Service has proposed that this species be removed from the list of Endangered or Threatened Species.
PE	=	Proposed Endangered; the U.S. Fish and Wildlife Service has proposed this species for listing as endangered.
PT	=	Proposed Threatened; the U.S. Fish and Wildlife Service has proposed this species for listing as threatened.
T/SA E/SA	=	Threatened (or Endangered) because of similarity of appearance.

STATE STATUS CODES

INV	=	Inventory Element; The Arkansas Natural Heritage Commission is currently conducting active inventory work on these elements. Available data suggests these elements are of conservation concern. These elements may include outstanding examples of Natural Communities, colonial bird nesting sites, outstanding scenic and geologic features as well as plants and animals, which, according to current information, may be rare, peripheral, or of an undetermined status in the state. The ANHC is gathering detailed location information on these elements.
WAT	=	Watch List Species; The Arkansas Natural Heritage Commission is not conducting active inventory work on these species, however, available information suggests they may be of conservation concern. The ANHC is gathering general information on status and trends of these elements. An "*" indicates the status of the species will be changed to "INV" if the species is verified as occurring in the state (this typically means the agency has received a verified breeding record for the species).
MON	=	Monitored Species; The Arkansas Natural Heritage Commission is currently monitoring information on these species. These species do not have conservation concerns at present. They may be new species to the state, or species on which additional information is needed. The ANHC is gathering detailed location information on these elememts
SE	=	State Endangered; the Arkansas Natural Heritage Commission applies this term to native plant taxa which are in danger of being extirpated from the state.
ST	=	State Threatened; The Arkansas Natural Heritage Commission applies this term to native plant taxa which are believed likely to become endangered in Arkansas in the foreseeable future, based on current inventory information.

DEFINITION OF RANKS

Global Ranks

G1	=	Critically imperiled globally. At a very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2	=	Imperiled globally. At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3	=	Vulnerable globally. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4	=	Apparently secure globally. Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5	=	Secure globally. Common, widespread and abundant.
GH	=	Of historical occurrence, possibly extinct globally. Missing; known from only historical occurrences, but still some hope of rediscovery.
GU	=	Unrankable. Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

Appendix I

Correspondence from AHPP

The Department of
Arkansas
Heritage

Mike Beebe
Governor

Cathie Matthews
Director

Arkansas Arts Council
•
Arkansas Natural Heritage Commission
•
Delta Cultural Center
•
Historic Arkansas Museum
•
Mosaic Templars Cultural Center
•
Old State House Museum

Arkansas Historic Preservation Program

1500 Tower Building
323 Center Street
Little Rock, AR 72201
(501) 324-9880
fax: (501) 324-9184
tdd: (501) 324-9811
e-mail:
info@arkansaspreservation.org
website:
www.arkansaspreservation.com

An Equal Opportunity Employer

April 10, 2009

Mr. Freddie Walker, E.I.
Garver Engineers
Post Office Box 50
Little Rock, Arkansas 72203-0050

RE: Faulkner County - Conway
Section 106 Review - COE
Conway Corporation Tupelo Bayou Wastewater Treatment Plant
AHPP Tracking No: 69045

Dear Mr. Walker:

This letter is written in response to your inquiry regarding properties of architectural, historical, or archeological significance in the area of the referenced project. The staff of the Arkansas Historic Preservation Program has reviewed the records pertaining to the area in question, and reported that the proposed undertaking will not affect any known historic properties.

However, because our survey files are incomplete, it is possible that such resources exist in the area. If a resource is encountered that appears to possess historical or architectural significance; or if human remains or artifacts, such as Native American pottery, stone tools, old bottles or china are discovered during this project, work in the area of discovery should stop and this office should be contacted immediately. We will evaluate any such finds as expeditiously as possible

Thank you for the opportunity to comment on this undertaking. If you have any questions, please contact Steve Imhoff of my staff at (501) 324-9880.

Sincerely,

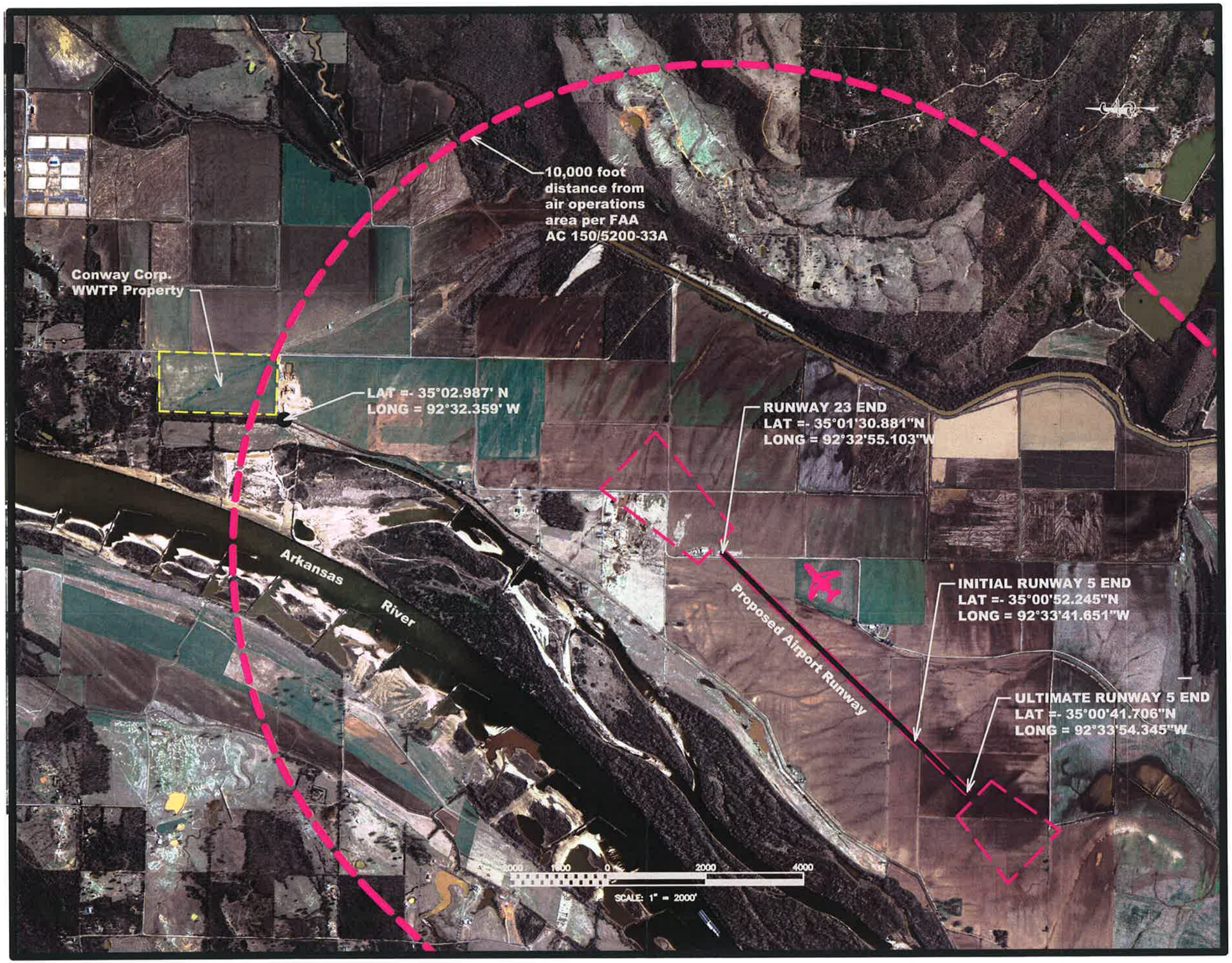
Frances McSwain

Frances McSwain
Deputy State Historic Preservation Officer

cc: Mr. Robert Cast, Caddo Nation
Dr. Ann M. Early, Arkansas Archeological Survey
Dr. Andrea A. Hunter, Osage Nation
Ms. Joyce C. Perser, Little Rock District Corps of Engineers
Ms. Carrie V. Wilson, Quapaw Tribe of Oklahoma

Appendix J

Airport Radius Map



File: L:\2008\08057000 - Conway Corp WW Improvements\Design\Reports\ANRC\ANRC DRAFT REPORTS\EID\Appendices\Appendix J-Airport Mapdwg.dwg Last Saved: 10/22/2010 9:47 AM Last saved by: Sdricks
Last plotted by: Ricks, Sebrina, D. Plot Style: ----- Plot Scale: 1:2000 Plot Date: 10/22/2010 9:56 AM Plotter used: \\gltpsd1\LJT IR C4080 PS3 Environmental Department

GARVER

GARVER LLC No. 766 CERTIFICATE OF AUTHORIZATION ARKANSAS ENGINEER

REV.	DATE	DESCRIPTION	BY

CONWAY CORPORATION
CONWAY, AR
EID

AIRPORT RADIUS MAP

JOB NO.: 08057000
DATE: OCT., 2010
DESIGNED BY: FLW
DRAWN BY: SDR

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DRAWING NUMBER
App. J

SHEET NUMBER

Appendix K

Agencies' Correspondence

DEPARTMENT OF PARKS & TOURISM
1 Capitol Mall
Little Rock, AR 72201
501-682-7777
Arkansas.com
History Commission
501-682-6900 (V/TT)
Ark-Ives.com
Keep Arkansas Beautiful Division
501-682-3507
KeepArkansasBeautiful.com
Personnel Section
501-682-7742 (V/TT)
State Parks Division
501-682-1191 (V/TT)
ArkansasStateParks.com
Tourism Division
501-682-7777 (V/TT)

Mike Beebe
GOVERNOR

Richard W. Davies
EXECUTIVE DIRECTOR

STATE PARKS, RECREATION & TRAVEL COMMISSION

Danny Ford
CHAIRMAN
Monline McNulty
VICE-CHAIRMAN
Steve Arrison
Bill Barnes
Jay Bunyard
Jim Gaston
Darin Gray
Debra Haak
Bob Knight
Billy Lindsey
Mike Mills
Thomas Schueck
Ness Sechrest
Jim Shamburger
Cindy Smith

DIVISION DIRECTORS

Cynthia Dunlap
ADMINISTRATION
Greg Butts
STATE PARKS
Joe David Rice
TOURISM
Nancy Clark
GREAT RIVER ROAD
Dr. Wendy Richter
HISTORY COMMISSION
Robert Phelps
KEEP ARKANSAS BEAUTIFUL

AN EQUAL OPPORTUNITY/ AFFIRMATIVE ACTION/ AMERICANS WITH DISABILITIES ACT EMPLOYER

Arkansas
THE NATURAL STATE

March 19, 2010

Mr. Freddie Walker, EI
Garver, LLC
4701 Northshore Drive
North Little Rock, AR 72118

RE: ANRC CWSRF for Conway Corporation's
Wastewater System Improvements
ORGP 10-26

Dear Mr. Walker:

Thank you for this opportunity to comment regarding the proposed Wastewater Master Plan for the City of Conway. Based on the information you have provided, our records do not indicate a conflict with this project.

If you have any questions or require additional assistance, please feel free to contact me at 501-682-6946.

Sincerely,

Anita Chouinard

Anita Chouinard, Environmental Planner
Outdoor Recreation Grants Program

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Telephone (501) 569-2000

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Telefax (501) 569-2400

February 23, 2010

Mr. Freddie Walker
Garver Engineering
4701 Northshore Dr.
North Little Rock, AR 72118

RE: ANRC CWSRF Conway Corporation Wastewater System Improvements

Dear Mr. Walker:

The Department has reviewed your correspondence concerning the proposed Conway Corporation Wastewater System Improvements

All facilities to be installed on highway right of way (crossing and parallel) must be with the approval of a permit from the Department, and must be in compliance with the Arkansas State Highway Commission's Utility Accommodation Policy. I am enclosing a copy of the policy as well as an application for a permit and information for obtaining a bond. Please note the back of the policy booklet provides the appropriate District office address to forward your application, and their telephone number for additional information.

We encourage all parallel lines to be installed on private property because utility facilities presently located on existing state highway right-of-way by the permit of the Highway Department shall be considered as not eligible for reimbursement if request to relocate for highway construction.

If Conway Corporation needs assistance in determining the existing right of way for this area, they may contact the Department's District Permit Officer listed in the Policy Book.

Sincerely,

Section Head
Utilities Section
Right of Way Division

cc: District 8
Environmental Division – Don Nichols

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

Arkansas Highway and Transportation Department
Programs and Contracts Division
Ed Hoppe
Post Office Box 2261
Little Rock, AR 72203

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Hoppe,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the Arkansas Highway and Transportation Department must be notified that the document is available for review at your request. A map illustrating the pipeline route, wastewater treatment plant site, and outfall locations is attached. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

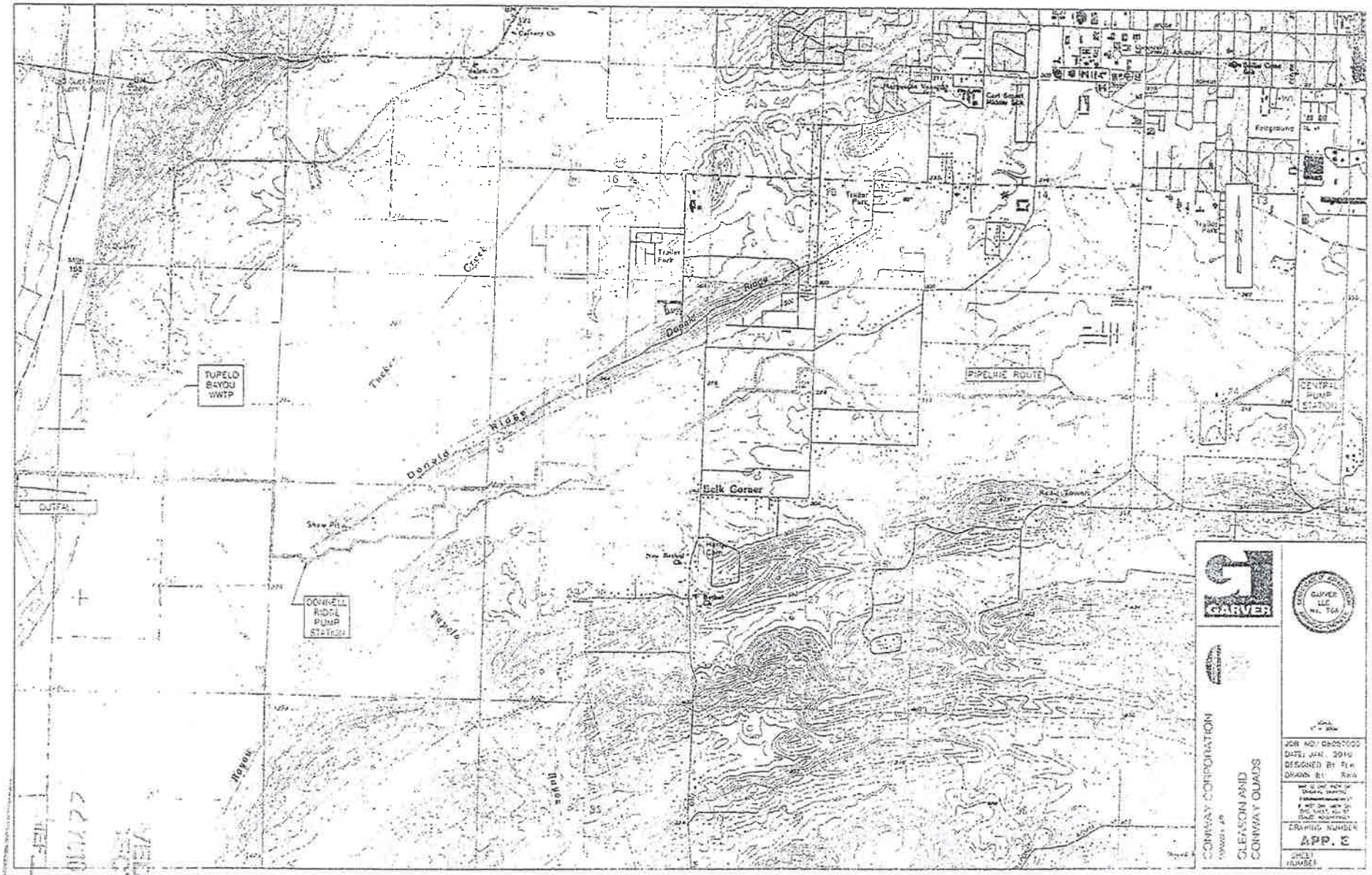
Freddie Walker

Freddie Walker, EI

IVED
SECTION
2 7010
HIEF

Attachements: Gleason & Conway Quad Map of TBWWTP Site and Collection System

L:\2008\08057000 - Conway Corp WW Improvements\Design\Reports\ANRC\ANRC DRAFT REPORTS\Appendices\Submittals & Notifications\Availability Letters\AHTD Availability.doc


TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
Belk Corner
Donnell Ridge
Creek
Bayou
Trailer Park
GARVER
CONWAY CORPORATION
CLEARSON AND CONWAY QUADS
JOB NO: 080570.00
DATE: JAN. 2010
DESIGNED BY: RLH
DRAWN BY: RMA
DRAWING NUMBER
APP. E
SHEET NUMBER

Arkansas Natural Resources Commission

J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
http://www.anrc.arkansas.gov/

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: anrc@arkansas.gov

Mike Beebe
Governor

February 18, 2010

Mr. Freddie Walker, EI
Garver
4701 Northshore Drive
North Little Rock, Arkansas 72118

Re: Conway Corporation's Wastewater System Improvements - WRD-003-694

Dear Mr. Walker

I have reviewed the draft Environmental Information Document (EID) submitted by you on behalf of the Conway Corporation in Conway, Arkansas. The Arkansas Natural Resources Commission (ANRC) appreciates your attention to the environmental review process for this proposed project.

Please include in the final EID, upon receipt, responses from the cross-cutting agencies that have not yet commented and address the recommendations made by the agencies that have commented. Also, include the public meeting and hearing information as required in the EID guidance.

If you have any questions please contact me at (501) 682-0554 or via email at keith.sanders@arkansas.gov.

Sincerely,

Keith Sanders
Environmental Program Manager

cc: Ms. Pris Houchens, ANRC

U.S. Department of Homeland Security
FEMA Region 6
800 North loop 288
Denton, TX 76209-3698

FEMA

March 30, 2010

Garver Engineering Co.
Freddy Walker, E.I.
4701 Northshore Drive
North Little Rock, AR 72118

Re: Wastewater System Improvements
Conway Corporation, WRD-003-694

Dear Mr. Walker:

We have received your letter dated February 15, 2010. Thank you for the opportunity to comment on the above-proposed project.

The concerns of the Federal Emergency Management Agency (FEMA) are directed toward the National Flood Insurance Program (NFIP) and the possible negative impact upon identified special flood hazard areas within the outlined project boundaries.

The City of Conway participates in the National Flood Insurance Program (NFIP). Therefore, any development that takes place within the city must be reviewed and appropriate permits issued to ensure compliance with its adopted Flood Damage Prevention Ordinance. Our records show that Ronnie Hall is the current Floodplain Administrator. He can be reached at 501-450-6165.

Coordination with the Floodplain Administrator for the City of Conway can ensure that this project is in compliance with the City's Flood Damage Prevention Ordinance and any City regulations/requirements.

Sincerely,

Roy B. McClure

Roy B. McClure, CFM
Natural Hazards
Program Specialist

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

Meeting Minutes (Phone Call)

Date: July 19, 2010 **Time:** 2:03 pm

Parties: Fred Walker & Ronnie Hall

Project: Garver Project No. 08057000

RE: Conway Corp TBWWTP

Call was made to Ronnie Hall, City of Conway Floodplain Administrator, regarding any local ordinances or regulations that would apply to the project. Mr. Hall was asked if there were any regulations or ordinances and he replied with "we're (Garver/Conway Corp) good". He was then asked to confirm that nothing had to be filed or no special permits were needed on his behalf and he replied with "nope nothing needed".

C:\Documents and Settings\flwalker\Desktop\Meeting Minutes.doc

Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Mike Beebe
Paul K. Halverson, DrPH, FACHE, Director and State Health Officer

Engineering Section, Slot 37
www.HealthyArkansas.com/eng/
Ph 501-661-2623
After Hours Emergency 501-661-2136
Fax 501-661-2032

March 12, 2010

Mr. Aaron Stallmann, P.E.
Garver Engineers
4701 Northshore Drive
North Little Rock, Arkansas 72118

RE: ANRC CWSRF Conway Corporation Wastewater Improvements
ADH # 73911 ,ARNC Project WRD-003-694, ARNC Project Number 00747-CGO-L

Dear Mr. Stallmann:

In support of your effort to advance the captioned project, the following project documents were received by this office on February 16, 2010:

- **Environmental Information Document-DRAFT**
- **Facility Guidance Plan-DRAFT**
- **Inflow and Infiltration Analysis-DRAFT**
- **2007 Conway Corporation Wastewater Master Plan**
- **2008 Conway Corporation Design Memorandum**

This office concurs with the proposed improvements detailed in these documents.

When submitting correspondence pertaining to this project, please include our reference number ADH# 73911

Sincerely,

Jeff Stone, P.E.
Chief Engineer
ADH Engineering Section

JS: RT: DLP: dlp

cc: Mr. Brett McDaniel c/o Conway Corporation
Mr. Dave Fenter, c/o ANRC, 101 East Capitol, Suite 350, Little Rock, AR 72201

STATE OF ARKANSAS
Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 330
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.arkansas.gov/dfa/igs

April 29, 2010

Mr. Freddie Walker, EI
Garver Engineers
4701 Northshore Drive
North Little Rock, Arkansas 72118

RE: WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
Tupelo Bayou Wastewater Treatment Plant and Linework

Dear Mr. Walker:

The State Clearinghouse has received the above document pursuant to the Arkansas Project Notification and Review System.

To carry out the review and comment process, this document was forwarded to members of the Arkansas Technical Review Committee. Resulting comments received from the Technical Review Committee which represents the position of the State of Arkansas are attached.

The State Clearinghouse wishes to thank you for your cooperation with the Arkansas Project Notification and Review System.

Sincerely,

Tracy L. Copeland, Manager
State Clearinghouse

TLC/nd
Enclosure
CC: J. Randy Young

Arkansas Natural Resources Commission

J. Randy Young, PE
Executive Director

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
http://www.anrc.arkansas.gov/

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: anrc@arkansas.gov

Mike Beebe
Governor

MEMORANDUM

TO: Mr. Tracy Copeland, Manager
State Clearinghouse

FROM: Mr. J. Randy Young, P.E., and Chairman
Technical Review Committee

RECEIVED
APR 28 2010
INTERGOVERNMENTAL SERVICES
STATE CLEARINGHOUSE

SUBJECT: WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
Tupelo Bayou Wastewater Treatment Plant
And Linework

DATE: April 26, 2010

Members of the Technical Review Committee have reviewed the above referenced project; the applicant is proposing improvements to the Tupelo Bayou Wastewater Treatment Plant (TBWWTP). The location of the plant is on an 80-acre site on the west outskirts of the City of Conway, near the Arkansas River. This location minimizes outfall pipe length for discharging treated flow to the Arkansas River. The flow will be transferred to the new wastewater plant through a series of gravity main, pump stations, and forcemains. The main facilities of the proposed wastewater plant are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. The total estimated cost for the engineering and construction of the proposed Tupelo Bayou Wastewater Treatment Plant and collection system upgrades is $102,400,000.00.

The Committee supports this project.

Agency comments are included for your review.
The opportunity to comment is appreciated.
JRY/ddavis

STATE OF ARKANSAS

Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.arkansas.gov/dfa/igs

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager - State Clearinghouse

DATE: ~~February 16, 2010~~ March 1, 2010

#2364

SUBJECT: **Wastewater Treatment System Improvements: Tupelo Bayou WWTP and Linework**

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by **March 3, 2010** to - Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock, AR 72203.

If you have no reply within that time we will assume you have no comments and will proceed with the sign-off.

NOTE: It is Imperative that your response be in to the Arkansas Natural Resources Commission (ANRC) office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ANRC at (501) 682-3830 or the State Clearinghouse Office.

✓ Support

✓ Comments Attached

_____ No Comments

_____ Do Not Support (Comments Attached)

_____ Support with Following Conditions

_____ Non-Degradation Certification Issues (Applies to ADEQ Only)

Name(print) John Turner Agency ANRC Date 4-19-10

Telephone Number 501 682 1608

MEMORANDUM

TO: Earl T. Smith, P.E., Chief, Water Management Division

CC:

FROM: John Turner, Project Coordinator

DATE: April 19, 2010

RE: WASTEWATER TREATMENT SYSTEM IMPROVEMENTS
Tupelo Bayou Wastewater Treatment Plant and Linework

ANRC has reviewed the above application. The applicant is proposing improvements to the Tupelo Bayou Wastewater Treatment Plant (TBWWTP).

At this time there are no objections to the proposed project as long as the mitigation process (avoid, minimize, compensate) is adhered to in regard to wetlands and streams. Appropriate methodologies should be implemented when determining the extent of unavoidable impacts and compensation ratios for wetlands (Charleston Method) and streams (Little Rock Method). The appropriate amount of compensatory mitigation required to offset the impacts should be implemented to insure that the mitigation is appropriate to "obtain no overall net loss to wetlands" as agreed to within the 1990 EPA/Corps MOA concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines.

Additionally, I recommend that the most current best management practices (BMPs) be made a part of the planning process, and scheduled to be implemented in the pre-construction phase and maintained post-construction until the site stabilizes. Any place, especially if on a slope where soil disturbance will occur due to excavation for construction appropriate methods such as hydro seeding, or providing cover to prevent or minimize sedimentation should be implemented, along with BMPs pertaining to erosion and sediment control practices, construction in sensitive areas, stormwater management controls, waste disposal practices, petroleum and chemical spill prevention and control procedures, stream crossing procedures, measures to minimize offsite tracking of sediments by construction vehicles, and maintenance and inspection procedures. These efforts will help minimize erosion and maintain water quality in the area.

I have attached the application for your review, decision, and signature.

Attachment

Lance

STATE OF ARKANSAS

Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.arkansas.gov/dfa/igs

RECEIVED
2010 MAR -3 P 12:12
AR DEPT OF HEALTH
ENGINEERING SECTION

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager - State Clearinghouse

DATE: ~~February 16, 2010~~ March 1, 2010

SUBJECT: **Wastewater Treatment System Improvements: Tupelo Bayou WWTP and Linework**

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by **March 3, 2010** to - Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock, AR 72203.

If you have no reply within that time we will assume you have no comments and will proceed with the sign-off.

NOTE: It is Imperative that your response be in to the Arkansas Natural Resources Commission (ANRC) office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ANRC at (501) 682-3830 or the State Clearinghouse Office.

X Support	_____ Do Not Support (Comments Attached)
_____ Comments Attached	_____ Support with Following Conditions
_____ No Comments	_____ Non-Degradation Certification Issues (Applies to ADEQ Only)

Name(print) Lance Jones Agency ADH Date 3-12-10

Telephone Number 501-661-2623

Division of Engineering - Slot 37
Arkansas Department of Health
4815 West Markham
Little Rock, AR 72205-3867

STATE OF ARKANSAS

Department of Finance and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.arkansas.gov/dfa/igs

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager - State Clearinghouse

DATE: ~~February 16, 2010~~ March 1, 2010

SUBJECT: **Wastewater Treatment System Improvements: Tupelo Bayou WWTP and Linework**

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by **March 3, 2010** to - Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock, AR 72203.

If you have no reply within that time we will assume you have no comments and will proceed with the sign-off.

NOTE: It is Imperative that your response be in to the Arkansas Natural Resources Commission (ANRC) office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ANRC at (501) 682-3830 or the State Clearinghouse Office.

✓ Support

_____ Comments Attached

_____ No Comments

_____ Do Not Support (Comments Attached)

_____ Support with Following Conditions

_____ Non-Degradation Certification Issues (Applies to ADEQ Only)

Name(print) William Prior Agency AGS Date 3-4-2010

Telephone Number 682-3017

ARKANSAS GEOLOGICAL SURVEY

VARDELLE PARHAM GEOLOGY CENTER
3815 WEST ROOSEVELT ROAD
LITTLE ROCK, AR 72204-6369

Bekki White
Director
State Geologist

Mike Beebe
Governor

March 4, 2010

Mr. Randy Young
Chairman, Technical review Committee
101 E. Capitol, Suite 350
Little Rock, Arkansas 72203

Dear Mr. Young:

This letter is a response to your request for comments on the proposed construction of a new sewage treatment plant for the City of Conway, Faulkner County, Arkansas. The Tupelo Bayou WWTP is located in section 18 , T. 5 N., R. 14 W. Faulkner County, Arkansas. The following comment pertains to the Geology of the plant site3.

The only comment I wish to add is that Quaternary age Arkansas River alluvium is composed of an upper 30 feet of silt and clay overlying medium sand 30-50 feet in depth and 50-70 feet coarse sand and gravel that overlies bedrock.

If you have any questions about these comments please feel free to contact me..

Sincerely,

William Lee Prior
Geologist Supervisor

PHONE: (501) 296-1877: FAX: (501) 663-7360
EMAIL: ags@arkansas.gov
WEBSITE: www.geology.arkansas.gov
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Scott Henderson
Director

Keeping the Natural State natural.

Arkansas Game and Fish Commission

Loren Hitchcock
Deputy Director
Mike Armstrong
Assistant Director

MEMORANDUM

TO: Randy Young, Chairman
Technical Review Committee

DATE: March 10, 2010

FROM: Craig K. Uyeda, Member CRAIG
Ecological & Engineering Services

CC: USFWS, Conway, AR
State Clearinghouse
USACE – LRD
Mark Oliver, AGFC
David Goad, AGFC

SUBJECT: Public Notice

Responsive to the memorandums from the State Clearinghouse of February 22, March 1, and March 4, 2010 this is to advise that we anticipate insignificant adverse impacts to fish and wildlife resources associated with these proposed activities. We have no objections to issuance of the following Public Notices; however, we have included comments on certain projects:

ENVIRONMENTAL ASSESSMENT, JENNY LIND ROAD – INGERSOLL AVENUE IMPROVEMENT PROJECT – FORT SMITH, SEBASTIAN COUNTY, ARKANSAS – FTN NO. 5830-080 – AR – LRD - USACE - Biologists from our agency have reviewed the proposed project which is located in the City of Fort Smith, Sebastian County, Arkansas. The applicant should provide appropriate mitigation for wetland and stream impacts.

APPLICATION NO. 00147-14 MR. TOMMY OSBORN, GALLOWAY SAND AND GRAVEL COMPANY, INC. INDEPENDENCE COUNTY – AR – LRD – USACE – The applicant has requested authorization for the placement of dredged and fill material in waters of the United States associated with the continuation of their commercial sand and gravel dredging operations. The proposed project is located between Lock and Dam Numbers 1 and 2 on the White River, from mile 300.2 to 307.9, just upstream of the Highway 167 bridge to immediately downstream of Lock and Dam No. 2, near Batesville, Independence County, Arkansas. Biologists from our agency have reviewed the proposed project and would like more information on the exact locations, quantity and gravel sizes that are being dredged.

WASTEWATER TREATMENT SYSTEM IMPROVEMENTS: TUPELO BAYOU WWTP AND LINEWORK – AR – LRD – USACE – The applicant is proposing improvements to the Tupelo Bayou Wastewater Treatment System.

Biologists from our agency have reviewed the proposed project and have the following recommendations. Large streams should be crossed by attaching a pipe to a bridge if possible or by boring under the streambed. If these two options are unachievable, then the work should be scheduled for June, July, or August to avoid peak spawning times and our agency should be contacted prior to construction. Also, stream crossing sites should be surveyed for freshwater mussels or evaluated by a malacologist to assess their potential for freshwater mussels. The applicant should provide appropriate mitigation for wetland and stream impacts.

APPLICATION NO. 2009-00286 MR. JOE RICHARDSON, SOUTH OF HOXIE, LAWRENCE COUNTY – AR – LRD – USACE – The applicant has requested an after-the-fact authorization for the placement of dredged and fill material in waters of the United States associated with the conversion of two acres of wooded wetland to an agricultural field. The project is located in a wetland abutting an unnamed tributary to Little White Oak Ditch, in the SW ¼ of the SE ¼ of section 20, T. 16 N., R. 1 E., south of Hoxie, Lawrence County, Arkansas. The applicant has proposed mitigation for wetland impacts.

Thank you for the opportunity to comment on these proposed projects.

Appendix L

Public Participation

NOTICE OF PUBLIC HEARING CONWAY CORPORATION AND CITY OF CONWAY PUBLIC HEARING WASTEWATER SYSTEM IMPROVEMENTS

Conway Corporation, Operator of the city of Conway's water and wastewater systems, will hold a Public Hearing beginning at 3 p.m. on Friday, August 27, 2010 at Conway Corporation located at 1307 Prairie Street, Conway, Arkansas.

The subject of the Hearing will be the proposed construction of the Tupelo Bayou Wastewater Treatment Plant and the "Project" described below. It has been determined that the construction of this "Project" is necessary to continue operations in compliance with State and Federal requirements and provide reserve capacity for future needs.

One of the purposes of this hearing is to discuss the potential environmental impacts of the "Project" and alternatives to it.

The "Project" includes decommissioning the existing Stone Dam Wastewater Treatment Plant, aeration improvements to the existing Tucker Creek Wastewater Treatment Plant, construction of a new Wastewater Treatment Plant near the Arkansas River entitled Tupelo Bayou Wastewater Treatment Plant, and various improvements in the collection system including pipelines and pump stations. The estimated construction cost of these improvements is $79,400,000.00.

The "Project" will require adjustment to the user charges to account for debt service and operations, maintenance and replacement costs resulting from the proposed project. The current monthly sewer charge for a typical household using 5,000 gallons of water per month is $17.55 increasing to $19.31 in 2011. The estimated sewer service charge for the typical household will be $31.85 after the new wastewater plant is constructed.

Detailed information on the proposed improvements is contained in the Preliminary Facility Plan prepared for the "Project" by Garver Engineers. This document can be viewed at the Conway Corporation Engineering Department during normal business hours. The address for the Engineering Department is 800 South Harkrider Street in Conway.

Both written and oral comments will be accepted at the Hearing, but for the accuracy of the Record, written comments are preferred. The Record will remain open for ten (10) days after the Hearing for written comments. Address all comments to the Conway Corporation Engineering Department at PO Box 99, Conway, AR 72033 1307 Prairie Street.

Richard Arnold
CEO
Conway Corporation

PROOF OF PUBLICATION

STATE OF ARKANSAS }
County of Faulkner } ss

I, Rick Fahr do hereby certify that I am the publisher of the **Log Cabin Democrat**, a daily newspaper published in the City of Conway, Arkansas, and having a bonafide circulation in Faulkner County, Arkansas, that said newspaper has been published at regular intervals continuously during a period of at least twelve (12) months

prior to the date of publication of the annexed .....

Notice

.....

and is in all respects eligible and qualified to publish legal notices under the provisions of Act 152 of the 1937 Acts of the General Assembly of the State of Arkansas as amended by Act 263 of the 1937 Acts of the General Assembly of the State of Arkansas.

I further certify that said legal advertisement, a copy of which is hereby attached, was published in said newspaper for one insertions on the following days, to-wit:

July 23, 2010 ..... , 20 .....

..... , 20 .... , 20 .....

..... , 20 .... , 20 .....

Affiant

Subscribed and sworn to before me this 28th day of July, 2010

Jackie L. Clark
Notary Public - Arkansas
Faulkner County
#12375902
My Commission Exp. 04-01-2020

Jackie L. Clark
Notary Public

My commission expires 4-1-20

Log Cabin Democrat

P.O. Box 969, Conway, AR, 72033-0969

INVOICE DATE		ADVERTISER/CLIENT NAME
07/23/10 - 07/23/10		CONWAY CORP/LEGAL
TOTAL AMOUNT DUE	INVOICE NUMBER	TERMS OF PAYMENT
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INVOICE

PAGE #	BILLING DATE	BILLED ACCOUNT NAME AND ADDRESS	REMITTANCE ADDRESS
1	07/23/10	CONWAY CORP/LEGAL PO BOX 99 CONWAY AR 72033	Log Cabin Democrat P.O. Box 969 Conway, AR, 72033-0969
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100678			
ADVERTISER/CLIENT NUMBER			

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PUBLIC HEARING:

Environmental Impact of

TUPELO BAYOU WASTEWATER TREATMENT PLANT

PROPOSED CONSTRUCTION

AUGUST 27, 2010

3:00 P.M.

Conway Corporation Conference Room

1307 Prairie Street

Conway, Arkansas

Mr. Richard "Richie" Arnold, CEO
Conway Corporation

Mr. Bill Bethea
Assistant to CEO
Conway Corporation
1307 Prairie Street
Conway, AR 72032

Mr. Greg Dell, Manager
Engineering and Planning
Conway Corporation
800 South Harkrider
Conway, AR 72033

Mr. Kirby B. Rowland, PE
Vice President
Garver USA

Mr. Aaron A. Stallman, PE
Project Manager
Garver USA
4701 Northshore Drive
North Little Rock, AR 72118

COPY

I N D E X

Transcript Caption Page 1

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Exhibit No. 1 [Aerial Photograph] 16

Exhibit No. 2 [Site Grading and Paver Plan Diagram] 18

Exhibit No. 3 [Public Hearing Sign-In Sheet] 19-20

Exhibit No. 4 [Public Hearing Notice] 21-22

Court Reporter's Certificate 23

[Reporter's Note: Exhibits Nos. 1-2 are size-reduced documents reflecting the large poster diagrams that were displayed at the public hearing.]

PROCEEDINGS - AUGUST 27, 2010

RICHIE ARNOLD: My name is Richie Arnold. I'm CEO here at Conway Corporation. The purpose of our Public Hearing today, we are receiving funding through the revolving loan fund at the Arkansas Natural Resources Commission, and we're here today to talk about our Tupelo - proposed Tupelo Bayou Wastewater Treatment facility and the environmental impacts of that.

I'd like, before we get started, to recognize some members of my staff that are here. Bret Carroll is our Chief Financial Officer. David Bradley in the back corner over there is Manager of our Water Systems. We also have Greg Dell who is Manager of Engineering and Planning. Brett McDaniel who's an Engineer, works for Greg. And Lee Tedford who's along the wall there, also an Engineer with us. And then Bill Bethea right here with the tie on, he's my assistant.

I'd like to start by recognizing Kirby Rowland from Garver USA. Kirby - Garver is doing the engineering on this project, and Kirby is going to speak, I guess, to some of the technical aspects of this project. And, with that, I'm going to turn it over to you.

I will tell you this is a public hearing. We'll be able to answer a few questions, I'm sure, but if you want to speak we are going to ask you to come up here and speak. We will be recording for the record, and so we want to make sure she's able to hear clearly whatever is said so that she can get it on the record.

I believe there is, too, Kirby a ten-day period after this -

KIRBY ROWLAND: Yes.

RICHIE ARNOLD: - where we could receive written comments if you'd prefer to do that.

But, anyway, Kirby.

KIRBY ROWLAND: Thank you, Richie.

I'm going to do a short presentation on the technical aspects of the project, and Aaron is going to discuss the environmental aspects. That's one of the things you have to do when you're dealing with a revolving loan project which is funded by EPA. It's actually a loan that's administered by the Arkansas Natural Resources Commission. I would like to, if you don't mind, let us complete our presentations and then feel free to have any comments or questions so our recorder can - can get your comments down accurately.

This is a culmination of many years of work so far. In 2005, Conway Corporation hired us to do a Wastewater Master Plan. It was published in 2007, and this is a copy of it. And one of the driving factors in this Master Plan was the fact that your existing wastewater plants are nearing capacity and the newer regulations and permit - discharge permits that the Arkansas Department of Environmental Quality issues, they're getting stricter. An NPDS permit, which is a National Pollutant Discharge Elimination System, those permits are issued typically every five years for a treatment plant. Conway has two wastewater plants.

I'm going to refer to these exhibits. Please feel free to come up and look at them after the meeting if you want to see a little bit closer detail, they are small exhibits.

But Conway has two wastewater plants right now: over on Stone Dam, Stone Dam Creek just somewhat near I-40, and they have Tucker Creek Wastewater Plant over here in the, um - kind of the western side of the city. Stone Dam Plant is quite old. It's forty-plus years old. It is what I call a standard activated sludge treatment plant. It discharges to Stone Dam Creek which goes into Lake Conway. Now, this permit was up for renewal about a year, year and a half ago. ADEQ issued a draft permit and it's now final, but that plant will have a much tighter discharge requirement. Essentially, it is going to require nutrient removal. Nutrients are like phosphorus and nitrates, nitrogen, that kind of thing. That plant was not designed for nutrient removal, and it has limited capacity for expansion. When we examine that plant, it's rated - it has a rating of six million gallons per day; however, the - about the maximum they could run through it because of the equipment problems is around four and a half.

The Tucker Creek Plant is an aerated lagoon-type plant. That plant is rated 6.4 million gallons per day. It's running 75 to 80% capacity during - during maximum day usages. This particular plant has a more relaxed permit because it actually pumps its effluent to the Arkansas River. Here's the Arkansas River right here. [Pointing to Exhibit No. 1]

I've looked at many, many scenarios on what it would actually cost to try to do something at Stone Dam and pump it to the river. We looked at whether this plant could be expanded. As far as an area

lagoon, there's not enough property to expand it.

In the Arkansas Natural Resource Commission loan you are required to look at a 20-year time span in terms of what your needs are, so we did that. The most cost effective solution was to try and - eventually, abandon both of these plants and build a new plant that can meet the Arkansas River discharge permit limits which are somewhat relaxed compared to what Stone Dam has now, and it's location is right here. [Pointing to Exhibit No. 1] It's just off the Arkansas River. This is the sand and gravel pit area right here and the new airport is somewhere - it's probably not quite on this map. It's just - the plant will be approximately two miles north of the proposed planned airport.

As part of the Natural Resources Commission requirements, we entered - or Conway entered into a memorandum of agreement and that agreement has specific dates that we have to meet. As example, this public hearing is part of that requirement. We have to turn in some preliminary plans and the environmental information document, the facility plan, by first of November. We've got a lot of regulatory approvals to go through if - if and when, if that happens like we are projecting it would happen, this project could potentially be bid in either April or May of next year.

Now, the new plant - this exhibit is actually out of one of the set of drawings that we're working on. [Pointing to Exhibit No. 2] The Arkansas River is right here at the bottom. This is the levy that you have that follows most of the river. So this plant is being

designed such that not only can it handle today's flows, it is expandable in the future when you need to expand it. It is expandable to 8, 16, 24, or 32 millions gallons a day, so this plant should last beyond the 20 years of the Master Plan. I guess it depends on how - how Conway grows and how the economy does. It is a - what we call a standard activated sludge plant. It will use anaerobic digestion for the sludge removal. Sludge will be treated in anaerobic digesters . The gas that's produced by those digesters will be reused to heat boilers to heat the digesters, and any excess gas will be flared off. Maybe someday in the future, again it depends on how things go, that some coal-powered generation could be - could be looked at in the future. There's a lot of different things available out there; it just depends on the cost and how things - how the economy and how Conway grows.

That is basically the technical aspects of it. The only other thing I would discuss is when you build a treatment plant, of course you've got to get the wastewater to it. The plans are to abandon Stone Dam as far as its treatment capability. There are some lagoons here that are used for equalization storage when you have big rainfalls or heavy rains. We can store wastewater in these ponds and then they're pumped back into the system after your flows go back down.

We have a force main. [Pointing to Exhibit No. 1] This central pump station right now collects most of your flow from this side of the city and pumps it through Stone Dam. This pump station will now

pump to the west through a 36-inch force main to about this point where it becomes a gravity sewer. And I project it will be a 48-inch gravity sewer that will follow Donnell Ridge down to a new pump station that we're calling Donnell Ridge Pump Station, and it will pump to the wastewater treatment plant.

So that's your conveyance system that's being planned to collect wastewater in your city. It makes more sense to discharge to the Arkansas River which has a much, much higher flow and somewhat relaxed permit limits compared to Stone Dam Creek.

I'm going to ask Aaron now to discuss some of the environmental aspects of it. Again, this is something that you have to do. I'm going to let him describe that.

I do have a statement that I have to make for this hearing. One of the purposes of this hearing is to discuss the potential environmental impacts of the project and alternatives to it.

So, with that, I'll turn it over to Aaron.

AARON STALLMANN: Thanks, Kirby.

Again, my name is Aaron Stallman with Garver. I've been working quite a bit on preparing the documentation required by the NRC for the process. There are two primary documents that they require for this funding; it is the Environmental Information Document, which is - we refer to as the EID, and Facility Guidance Plan, which there's - there's a lot of information that goes into both of those documents and a lot of coordination with other regulatory agencies that we have to provide notification and get their input on - on how we approach

certain aspects of the project.

We have sent draft copies of those documents to - I don't remember all of them, but there's about 13 regulatory agencies that we've sent draft copies to. Game & Fish was one of them. State Historic Preservation Office. We've contacted U.S. Fish and Wildlife regarding threatened and endangered species that may be impacted by this project, be it the treatment plant construction or the conveyance system. The only comment that they had was out on the Arkansas River over there at the - at the discharge, from the opposite bank a little bit downstream there's a breeding ground for the least interior turn [Pointing to Exhibit No. 1] which they just mentioned that in the letter. We're on the opposite side of the river. We should have no impact on that, whatsoever, but that was the only - only statement that they had regarding the project.

We've also completed a wetlands delineation along the entire route that's shown here in red [Pointing to Exhibit No. 1] and of the facility itself. That was completed - the initial survey was completed early this year. We've actually adjusted some of the alignment for the conveyance system to miss some of the wetlands to minimize the impact on the wetlands along the route. So we've gone out since we've done the realignment, just in recent weeks, and conducted an additional follow-up delineation for those - those sections. We're currently working on the report for that section.

There has been coordination with ADEQ on the discharge limits. As Kirby was mentioning earlier that the stricter discharge

limitations for Stone Dam Plant was part of the reasoning behind moving towards this plant. And we've also been in contact with ADEQ regarding what the potential or the expected limitations are to be from that plant at the Arkansas River, as well as any requirements that they have for putting the line out there. Because on this side of the river is actually the navigation channel. [Pointing to Exhibit No. 1] On the eastern side of the river there's a revetment that runs down the river that we will actually construct our discharge line through that revetment. So we've been in contact with the Corps of Engineers as well as ADEQ to see what any kind of requirements for that construction would be, and we're in the process of working through that at this time.

Kirby mentioned a little bit about alternatives, and that all is outlined in the Environmental Information Document and the Facility Guidance Plan as far as what - what alternatives were investigated and how the alternative of selecting the Tupelo Bayou Wastewater Treatment Plant was - was arrived at. So the documents, again, are very inclusive of all the efforts between regulatory agencies and the efforts that Garver and Conway Corporation have gone through to get to this point. And, again, those are requirements of the revolving loan fund and - as well as this public hearing we're at today. So, I believe, from an environmental standpoint, that's - that's the long and the short of it.

Is there anything that, Kirby, you can think of that I'm - that I'm leaving out?

KIRBY ROWLAND: You might mention odor control.

AARON STALLMAN: The odor control is one of the things that's - that's described in the Facility Guidance Plan. The headworks of the treatment plant will be equipped with odor control devices to minimize any noxious odors that - and that's a - that can be a touchy subject, obviously, when it comes to wastewater treatment plant. And there's been a lot of work done to develop what we feel is the best alternative to control that.

So, trying to think if there's anything else that would be - that would be pertinent to discuss at this time, and I think I've covered all of it. I appreciate it and I'll give it back over to Kirby.

KIRBY ROWLAND: Okay. At this point we welcome any comments or questions. The main thing is - if you want to stand where you're at or maybe come a little closer - that we get your name for the record and get your comment as you - as you've stated it. If it's a question, we'll try and answer if we can. If not, we'll add it to the record, certainly, and find the answer to that question.

So, at this point, we -

Yes, sir.

MARK SPITZER: I'll come up.

My name is Mark Spitzer. I'm a professor at UCA, and I wrote the book on gar, gar fish, and alligator gar in Arkansas, in particular. I work with Game & Fish, Arkansas Game & Fish, and U.S. Fish and Wildlife, and UCA biologists on alligator gar management in the state.

Alligator gar, you know, are these huge, incredible fish who are

- they're endangered and threatened throughout their range. And, in Arkansas, they are listed by various agencies as - their status is unknown, imperiled, vulnerable, and declining substantially.

You know, right up here in Pool 7 on the Arkansas River next to the proposed wastewater treatment plant is the largest population of alligar - known alligator gar in the state and these alligator gar are spawning in Tupelo Bayou. They go up there and they spawn in the flood plains. It's a very delicate reproductive thing that depends upon water level, water temperature, um, and time of year. And I don't know if this is - this treatment plant as proposed spews estrogen into clean water, wastewater, but estrogen, of course, is - we've been finding lately has been changing the sexes of fish into males and this has been documented all over the place.

I don't know why U.S. Fish and Wildlife noted the turns and did not note - note the alligator gar because there's a concentrated effort right now among federal and state agencies, private labs, private hatcheries all across the south to do something about the, um - the dwindling populations of alligator gar which have been hit even harder now from the oil spill in the Gulf where most of - a lot of populations spawn in those marshes.

And I talked to Lindsey Lewis of U.S. Fish and Wildlife yesterday, who is in charge of the alligator gar project in the state, and he says he's been having a hard time dealing with the demands in this state because him and his people are being shuttled down to the Gulf to deal with the oil spill a lot right now and they're really

preoccupied with that, and that might be why he - he didn't note that the largest population of alligator gar in the state spawns in Tupelo Bayou.

Now, there are some other spawning grounds around, too, and they spawn in those other spawning grounds. And these - these fish are very important. They've been around for three hundred million years. They've been here since before the dinosaurs and they provide ecological balance despite their reputation as being trash fish, which is totally untrue. They provide ecological balance for the other species and they do not attack humans, and they are a very important natural species resource, too.

We don't know what the recruitment is in this area at Lollie Bottoms. We don't know how many are spawning. We do know that when they do spawn and the spawn takes - it only happens once a decade on average. It's very delicate. But the alligator gar are in there. They're above the construction, the dam on Tupelo Bayou. They're below it. They're above it. Bow hunters are getting 'em every year. We've got a whole new package of laws in the state protect - to protect the alligator gar because agencies realize that they are a dwindling and endangered resource, and so this is definitely something that needs to be addressed. We need to know the exact environmental impact such a wastewater treatment would have on these fish, and UCA is willing to help.

Reid Adams is the head of Biology over there. He's an alligator gar specialist. He works with Game & Fish and U.S. Fish and Wildlife

and they - they are ready to help assess how many gar are spawning in there, how many alligator gar are spawning in there, and what the impact would be. And they're willing to work with Conway Corporation and Game & Fish and U.S. Fish and Wildlife to see what they can come up with. But, I think, you know, before anybody goes ahead on such a project - there's going to be hell to pay if we don't find out what - how many gar are spawning in there.

Thanks.

KIRBY ROWLAND: Thank you for your comments.

Any other comments or questions at this time?

MITCH HART: I have one.

KIRBY ROWLAND: Yes, sir?

MITCH HART: Um, I guess this is - this -

KIRBY ROWLAND: Would you state - state your name, please?

MITCH HART: My name is Mitch Hart, H-a-r-t.

KIRBY ROWLAND: Thank you.

MITCH HART: I guess this doesn't affect the Tucker Creek Treatment Plant, at all, no part of this plan?

KIRBY ROWLAND: The, um - right now, the Tucker Creek Plant is planned to stay in commission. Now, down the road, as that plant - you know, it's about 75 - 80% capacity, so at some point in time it's going to get to the point where it's at capacity. And - and I guess the future plan is to - eventually, it would be discontinued and all flow would come down to the Tupelo Plant. But, under - under

the current plan we're working on, a lot of it is financial. This is not a low-cost project, but Tucker Creek will be continued to be used in the interim.

Anybody else? We'll be - yes.

MICHAEL SPEARS: Michael Spears. I'd just like to know what the prevailing wind patterns are. And, as far as odor control, are you using the same methods at Tucker Creek? Because I live in the western part of the subdivision and on occasion - not on a regular basis - but I do get the odor from Tucker Creek.

KIRBY ROWLAND: I may have to ask Aaron about the prevailing winds. It's, of course, the same as the airport.

But, I - I will tell you this before he answers that, this being a mechanical plant unlike Tucker, which is aerated ponds, we are actually putting covers and a fan system that will actually capture those - any of those odors that come off, especially at the effluent end, and will be put through a sprinkler or a via solvent system to take care of the odors.

AARON STALLMANN: The prevailing wind that we've noted, and I don't remember if it came from the dam right there, but somewhere in the vicinity of the plant - it was not far away - it was essentially 240 degrees from north, so essentially west, southwest, and it was about - the average speed was about seven miles an hour.

MICHAEL SPEARS: Thank you.

AARON STALLMAN: Thank you.

KIRBY ROWLAND: Again, we will be glad to take any

written comments you have. If you'll deliver them here to Conway Corp. that will be put into the record. We'll do that for the next 10 days.

And we certainly appreciate your attendance and interest in this project. I think it will be one that will serve Conway well into the future and will help you meet your - your environmental requirements to clean up the wastewater and give your city a really good project to be environmentally friendly. And we certainly will do everything we can to answer your question, and we'll go from there.

So, with that, Richie, anything else you want to say before we close?

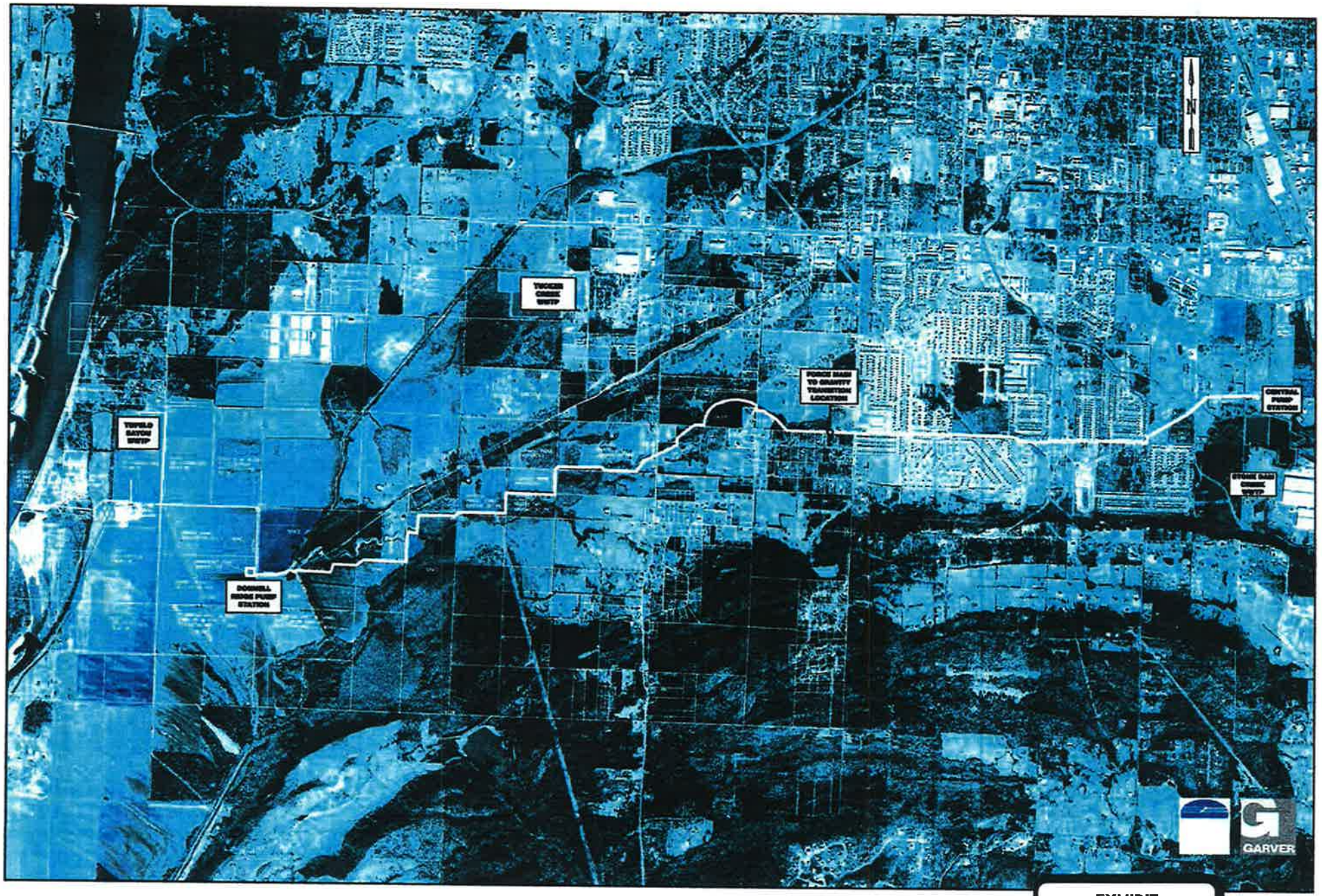
RICHIE ARNOLD: No. As far as the - if you do file written comments, Kirby said they could be delivered here. I assume - would you prefer they be mailed, or is that - I'm just thinking logistically. I guess during office hours if you wanted - if you wanted to drop something off right here, our reception desk would be probably good enough.

KIRBY ROWLAND: There's a reception desk right down the hallway here.

RICHIE ARNOLD: Or our mailing address is P.O. Box 99. I think that's on our website if you don't want to write it down. Either way, and we'll - we'll make sure those get included. Okay.

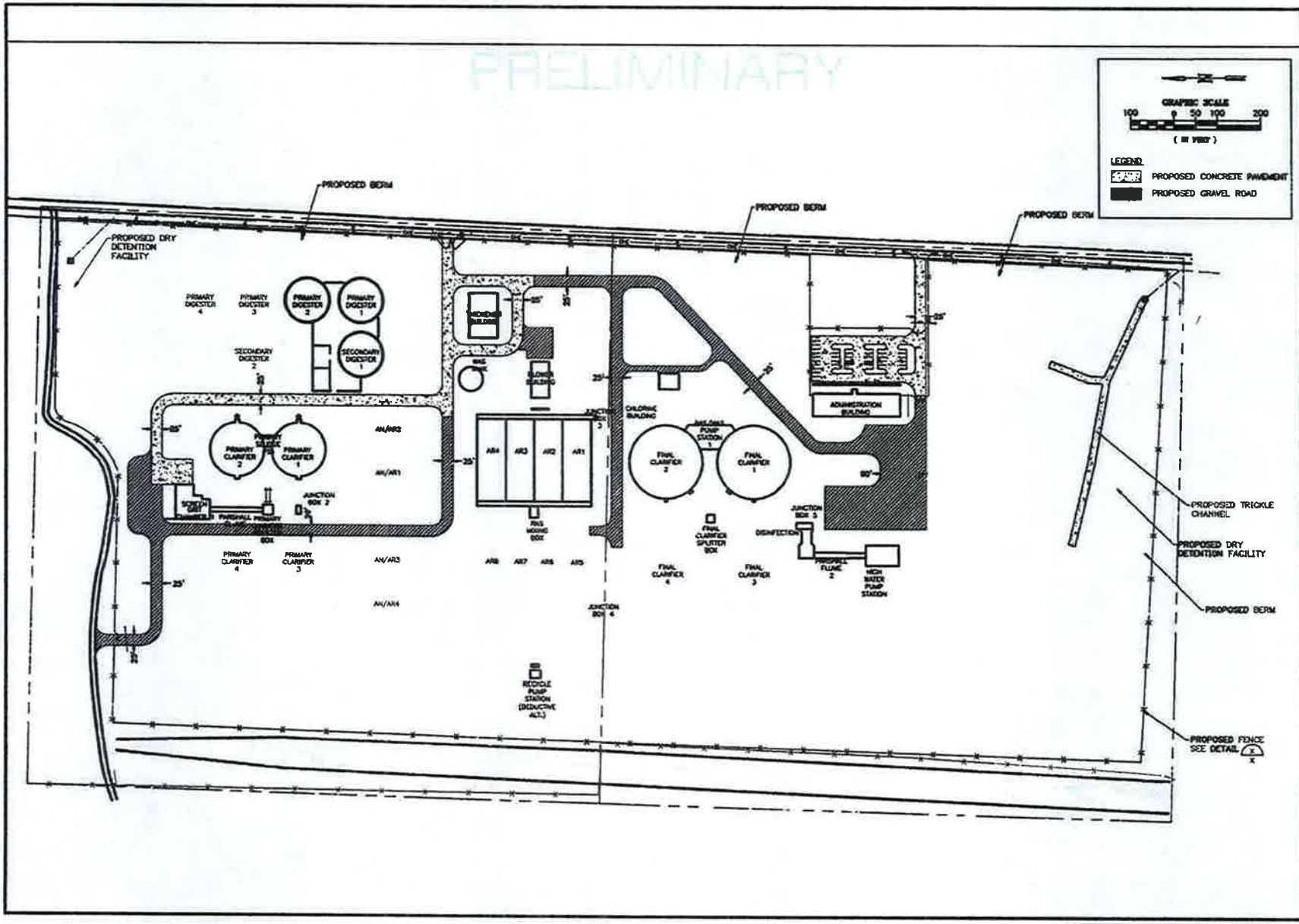
KIRBY ROWLAND: With that, then, we will officially close the public hearing. Thank you.

(Off record at 3:25 p.m.)


TRIFELD BAYOU WWTP
DONNELL RIDGE PUMP STATION
TUCKER CREEK WWTP
FORCE MAIN TO GRAVITY TRANSITION LOCATION
CENTRAL PUMP STATION
STONE OAK CREEK WWTP
GARVER

EXHIBIT

1



GARVER

CONWAY CORPORATION
CONWAY, AR

TUPELO BAYOU WWTP IMPROVEMENTS

SITE GRADING AND PAVING PLAN

JOB NO.: 08057000
DATE: JUNE, 2009
DESIGNED BY: SDO
DRAWN BY: TW

DRAWING NUMBER
05-C0-101

EXHIBIT
2

File: L:\2008\08057000 - Conway Corp WW Improvements\Drawings\Collection System\Exhibits\CAD\M - 05-C0-101-TBWWTP.dwg Last Saved: 6/29/2010 11:47 AM Last Saved By: Whatley
Last Plotted: Jun 29, 2010, Whatley, Veley, H Plot Scale: Screw Standard Half.ctb Plot Scale: 1:2 Plot Date: 6/27/2010 3:30 PM Device_Used: \\phys\ds23\Canon IR C4080 PS

Conway Corporation

Tupelo Bayou Wastewater Treatment Plant

Public Hearing
Friday, August 27, 2010, 3:00 p.m.
Sign-In Sheet
(Please Print)

#	Name	Company	Email or Phone Number
1	Bill Bethea	Conway Corporation	bill.bethea@conwaycorp.com
2	Kirby Rowland	Garver, LLC	501-376-3633
3	Aaron Stallmann	GARVER, LLC	501-376-3633 aastallmann@garverusa.com
4	Greg Dell	Conway Corporation	501-450 6063
5	Matt Schroeder	AGFC	mdschroeder@agfc.state.ar.us
6	Matt Horton	AGFC	mlhorton@agfc.state.ar.us
7	Don Barnett	Koontz Electric Company, Inc.	d.barnett@koontzelectric.com

EXHIBIT
3

#	Name	Company	Email or Phone Number
8	Bill Beall	LCCAC	hoondocker bill@sbcglobal.net
9	Bret Carroll	Conway Corp	
10	RICHIE ARNOLD	" "	450-6022
11	Mark Spitzer	UCA	mspitzer@uca.edu
12	Jane Bradley	Conway Corp	
13	Lee Tedford	Conway Corp	
14	Mike Spoors	NA	MichaelSpoors@conwaycorp.com
15	BRETA MICHAEL	C. Corp	
16	Mitch Hart	Hartland Dev	mhart@c21dh.com
17	Robert Wickser	RW Products	rwproducts@att.net
18			
19			

NOTICE OF PUBLIC HEARING
CONWAY CORPORATION AND CITY OF CONWAY PUBLIC HEARING
WASTEWATER SYSTEM IMPROVEMENTS

Conway Corporation, Operator of the city of Conway's water and wastewater systems, will hold a Public Hearing beginning at 3:00 p.m. on Friday, August 27, 2010 at Conway Corporation located at 1307 Prairie Street, Conway, Arkansas.

The subject of the Hearing will be the proposed construction of the Tupelo Bayou Wastewater Treatment Plant and the "Project" described below. It has been determined that the construction of this "Project" is necessary to continue operations in compliance with State and Federal requirements and provide reserve capacity for future needs.

One of the purposes of this hearing is to discuss the potential environmental impacts of the "Project" and alternatives to it.

The "Project" includes decommissioning the existing Stone Dam Wastewater Treatment Plant, aeration improvements to the existing Tucker Creek Wastewater Treatment Plant, construction of a new Wastewater Treatment Plant near the Arkansas River entitled Tupelo Wastewater Treatment Plant, and various improvements in the collection system including pipelines and pump stations. The estimated construction cost of these improvements is $79,400,000.00.

The Project will require adjustment to the user charges to account for debt service and operations, maintenance and replacement costs resulting from the proposed project. The current monthly sewer charge for a typical household using 5,000 gallons of water per month is $17.55 increasing to $19.31 in 2011. The estimated sewer service charge for the typical household will be $31.85 after the new wastewater plant is constructed.

Detailed information on the proposed improvements is contained in the Preliminary Facility Plan prepared for the Project by Garver Engineers. This document can be viewed at the Conway Corporation Engineering Department during normal business hours. The address for the Engineering Department is 800 South Harkrider in Conway.

Both written and oral comments will be accepted at the Hearing, but for the accuracy of the Record, written comments are preferred. The Record will remain open for then (10) days after the Hearing for written comments. Address all comments to the Conway Corporation Engineering Department at PO Box 99, Conway, AR 72033 1307 Prairie Street.

Richard Arnold
CEO
Conway Corporation

EXHIBIT
4

Noon lions	Amanda Bledsoe	PO Box 367 Conway 72033
Noon Rotary	John Gierke	PO Box 211 Conway 72033
Kiwanis	Tommy Shackelford	Conway Corporation PO box 99
Morning Rotary	Bill Devore	4516 Clearwell Road
Optimist	Randy Durbin	PO Box 532 Conway 72033
Ecofest	Debbie Plopper	50 New Oxford Road
Mayor	Tab Townsell	1201 Oak Street Conway 72032
Chamber of Commerce	Brad Lacy	900 Oak Street Conway 72032
Faulkner sustainability	Sandra Leyva	2035 prince Street 72034
UCA	Allen Meadors	201 Donaghey 72035
Hendrix	Tim Cloyd	1601 Harkrider 72032
Central Baptist	Terry Kimbrow	1501 College Avenue 72034
Optimist Morning	Ronnie Barton	15 Fox Hill Road Greenbrier, AR 72058
Optimist Twilight	James Pack	1225 E. German Lane 72032
Conway Public Schools	Greg Murry	2220 Prince Street 72034
Conway Christian Schools	Gloria Massey	400 SE German Lane 72032
St. Joseph Schools	Msgr. Richard Oswald	1115 College 72032
County Judge	Preston Scroggin	801 Locust 72034
City Attorney	Mike Murphy	1234 Main Street 72034
Lake Conway Watershed Advocacy Group	Marsha Guffey, PhD, PCED METROPLAN	501 W. Markham, Suite B LR 72201

REPORTER'S CERTIFICATE

STATE OF ARKANSAS)

COUNTY OF FAULKNER)

I, Julie Beckman, hereby certify that I am a Certified Court Reporter for the State of Arkansas, 20th Judicial District, that on the 27th day of August, 2010, I was present for the proceedings had in the within-named cause. I further certify that the foregoing pages contain and are a true and correct transcription of the proceedings conducted at the proposed Tupelo Bayou Wastewater Treatment Plant Public Hearing as reported verbatim stenomask by me at the time of the hearing and transcribed and reduced to typewriting by myself.

Witness my hand and seal this 28th day of August, 2010.

Julie Beckman
Certified Court Reporter, No. 309
P.O. Box 2637
Conway, AR 72033
501-328-5905/ 501-581-3732

OFFICIAL SEAL
JULIE A. BECKMAN
CERTIFIED COURT REPORTER
NO. 309
ARKANSAS SUPREME COURT

JULIA BECKMAN
MY COMMISSION # 12374544
EXPIRES: February 11, 2019
Faulkner County

COPY

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

MEETING MINUTES

To: Kirby Rowland, PE

Date: June 18, 2010

From: Aaron Stallmann, PE AS

RE: Conway Tupelo Bayou Public Meeting

Copies To:

One of the requirements of the process for procuring funding through the Arkansas Natural Resources Commission (ANRC) is to hold a Public Meeting to present the proposed project and the associated alternatives. Since Conway Corporation has chosen to seek funding through ANRC for the Tupelo Bayou WWTP project, a public meeting was required and held on June 18, 2010 at 3:00 PM at the Conway Corporation office in downtown Conway, AR. Below is a list of attendees:

Name	Company	Email or Phone
Bill Bethea	Conway Corporation	bill.bethea@conwaycorp.com
Kirby Rowland	Garver, LLC	KBRowland@GarverUSA.com
Aaron Stallmann	Garver, LLC	AAStallmann@GarverUSA.com
Greg Dell	Conway Corporation	greg.dell@conwaycorp.com
Tommy Shackelford	Conway Corporation	tommy.shackelford@conwaycorp.com
Brett McDaniel	Conway Corporation	brett.mcdaniel@conwaycorp.com

Greg Dell Called the meeting to order at 3:00 PM CDT. Mr. Dell began by introducing himself and Garver, LLC as the design engineers working on the Tupelo Bayou WWTP (TBWWTP) project. Mr. Dell gave a short description of the Master Planning efforts that were completed which led to the genesis of this project. Multiple alternatives were identified in the Master Plan; however, the TBWWTP was the preferred option to address the future wastewater treatment needs of Conway, AR. Mr. Dell then introduced Kirby Rowland of Garver, LLC.

Mr. Rowland explained the two aerial photo exhibits that were displayed at the front of the room. One exhibit showed the proposed collection system to convey wastewater to the proposed TBWWTP and the other exhibit showed the proposed layout of the TBWWTP. Mr. Rowland described the proposed processes to be implemented at the treatment plant as well as the design capacity. The base design for the TBWWTP will be for a 16MGD plant with a deductive alternate for an 8MGD plant. Mr. Rowland then introduced Aaron Stallmann of Garver, LLC.

Mr. Stallmann has been working on the regulatory issues associated with the proposed TBWWTP. This includes coordination with ADEQ, USACOE, and ANRC. A requirement for receiving funding through ANRC is to prepare an Environmental Information Document and a Facility Guidance Plan. Drafts for these documents have been prepared and submitted to the appropriate agencies for review. Comments have been received from several agencies which will be addressed and included in the final documents. US

Army Corps. of Engineers Section 404 permitting will be required for the project. The application for the 404 permitting is nearly complete and is only lacking a small amount of wetlands information. A wetlands delineation has been completed for the entire collection system, pump stations, and treatment plant site; however due to some re-alignment of the collection system, additional field work and report modification is required to finalize the wetlands report.

No questions were asked during the meeting

The meeting was closed by Mr. Greg Dell.

From: Brandon Willis [mailto:bcwillis@gmail.com]
Sent: Sunday, September 05, 2010 5:03 AM
To: comments@conwaycorp.net
Subject: Waste water treatment plant smell.
Importance: High

Hello Conway Corp,

I live on Arden Ln and work at Acxiom. I have lived in Conway since 1998. First let me say that I really love Conway and enjoy the services Conway Corp provides - now for the "but" - but it seems like in the past 2-3 years there has been a growing problem with the smell coming from the water treatment plant near my house. Before the birth of my daughter I regularly got-up at 5:00am to run and lift weights at the Acxiom gym. More often than not my path to the Acxiom gym would take me down Bill Bell Ln and Stanley Russ Rd, some mornings the smell was over-powering, nearly to the point of gagging but it seemed like the smell was very localized, only in the very early morning and I never smelled it at my house. My daughter is now 18 months old. And I have to say I think the smell is getting worse. It seems like the odor occurs more often, is stronger and travels further. For example, up until a few months ago I don't believe I had ever smelled it at my house. I have lived on Arden Ln for more than 4 years. Until a few months ago I could drive down South German Ln in the early morning or evening and not be forced to switch my car's vent system to "recycle" in an effort to keep the outside-air well... outside. Now it seems as though that is case more often than not. In fact when I'm driving home, maybe from dinner at a restaurant in east or north Conway, and I cross over the bridge over Harkrider heading west toward South German Ln I reach for the "recycle air" button more and more often (at times it is the smell at the bridge that reminds me).

So I have a few questions:
1. Given that if you can smell something it means you're breathing it - should I be concerned that my 18 month old is breathing something that smells so terrible?
2. What can be done to remove or at least lessen this odor (or more importantly the source or process causing the odor)?
3. What is that smell?
4. Why does it come and go?
5. Why it is worse in the mornings or evenings rather than being constant?
6. How can I help?

Thank you for your time and attention.

Concerned,
--Brandon Willis

This e-mail and any attachments are confidential, may contain legal, professional or other privileged information, and are intended solely for the addressee. If you are not the intended recipient, do not use the information in this e-mail in any way, delete this e-mail and notify the sender.

Department of Writing THE UNIVERSITY OF CENTRAL ARKANSAS

Thompson Hall
201 Donaghey Avenue
Conway, Arkansas 72035-0001
(501) 450-3144

Received
AUG 31 2010
Co.,
on

August 27, 2010

Richard Arnold, CEO
Conway Corporation
P.O. Box 99
Conway, AR 72033

Re: Tupelo Bayou Wastewater Treatment Plant

Dear Mr. Arnold:

To recap what I said today at the public hearing, and to add my voice to the written concerns about the proposed sewage treatment plant in Lollie Bottoms, I introduced myself today as a UCA professor who wrote the book on gar (*Season of the Gar*, University of Arkansas Press, 2010) and Arkansas alligator gar in particular. I noted that I work with US Fish and Wildlife, the Arkansas Game and Fish Commission, and UCA biologists on alligator gar management in the state. Because of this, I represent the concerns in this community about the proposed treatment plant. Alligator gar are threatened throughout their range and in Arkansas their status is listed as *unknown, imperiled, vulnerable*, and *declining substantially*. Currently, state and federal agencies are coordinating with private labs, hatcheries and universities across the South to protect and propagate this fascinating native species (they go back 300 million years, have alligator-shaped heads, can grow up to ten feet long, etc), which are beneficial to ecosystem stability. Despite incorrect accusations of being trashfish and attacking humans, this fish's reputation is beginning to change. State laws have recently been revised to protect this fish and there is a concerted effort to sustain their populations. The largest known population in the state is located in Pool 7, right next to the proposed sewage plant. UCA biologists and US Fish and Wildlife agents concur that alligator gar are in Tupelo Bayou, both above and below the concrete structure or dam. Bowhunters have been harvesting gator gar in these flooded fields for years. It is not known how important a spawning spot this area is, but what is known is that alligator gar have a very delicate reproductive process that depends on water temperature, water level and time of year. On average, a spawn only takes once per decade, and this matter is complicated further by the fact that estrogen used to purify wastewater is responsible for male fish turning into female fish across the continent. Hence, there is a concern that the intended treatment plant could be detrimental to our local alligator gar demographics. UCA, however, is willing to work with the Conway Corporation, US Fish and Wildlife, and Arkansas Game and Fish in order to assess this area's potential for recruitment and its significance as a spawning ground. Dr. Reid Adams, Chair of the Biology Dept. at UCA is a gar expert and is open to discussing the possibility of a study. Given the priority status of alligator gar in Arkansas with Arkansas Game and Fish, there may be hell to pay if we don't study the specific environmental impacts of this project very carefully.

Sincerely,



Prof. Mark Spitzer
Dept. of Writing
University of Central Arkansas
Conway, AR 72035

From: Annie Stricklin [mailto:stricklina@gmail.com]
Sent: Monday, September 06, 2010 2:58 PM
To: comments@conwaycorp.net
Subject: Alligator gars in peril
Importance: High

To whom it may concern:

We've been reading about your proposed sewage-treatment plant and how its construction could affect the alligator gars in Tupelo Bayou. My whole family lives in this area, and we're all concerned by the idea that such a fragile population could be further threatened. While we understand that a new facility might be more environmentally sound than the existing one, it seems worth it to allow a study on the effects of the new plant and its construction. Our community would be much the poorer without gars; don't take the chance.

Thank you,
Annie Stricklin

This e-mail and any attachments are confidential, may contain legal, professional or other privileged information, and are intended solely for the addressee. If you are not the intended recipient, do not use the information in this e-mail in any way, delete this e-mail and notify the sender.

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

Arkansas Highway and Transportation Department
Programs and Contracts Division
Ed Hoppe
Post Office Box 2261
Little Rock, AR 72203

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Hoppe,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the Arkansas Highway and Transportation Department must be notified that the document is available for review at your request. A map illustrating the pipeline route, wastewater treatment plant site, and outfall locations is attached. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

Attachements: Gleason & Conway Quad Map of TBWWTP Site and Collection System

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GARVER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

Bureau of Land Management
Environmental Coordinator
Jackson District Office
411 Briarwood Drive, Suite 404
Jackson, Mississippi 39206

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

To Whom It May Concern,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the Bureau of Land Management must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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GARVER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

Central Arkansas Planning and Development District
Rodney Larsen, Director
115 Jefferson Street
Lonoke, AR 72086

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Larsen,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the Central Arkansas Planning and Development District must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

FEMA
Natural and Technological Hazardous Division
800 N. Loop 288
Denton, Texas 76201

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

FEMA Staff,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that FEMA must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

National Park Service
Midwest Regional Office
Nick Chevance
601 Riverfront Drive
Omaha, Nebraska 68102

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Chevance,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the National Park Service must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

U.S. Geological Survey, WRD
John E. Terry, Director
401 Hardin
Little Rock, AR 72211

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Terry,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the U.S. Geological Survey must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

U.S. Forest Service
Regional Forester, Randy Warbington
1720 Peachtree Road, NW
Atlanta, Georgia 30309

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Warbington,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the U.S. Forest Service must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

February 15, 2010

Natural Resources Conservation District
Mr. Edgar P. Mersiovsky
Room 3416, Federal Building
700 West Capitol
Little Rock, AR 72201

Re: ANRC CWSRF Conway Corporation Wastewater System Improvements

Mr. Mersiovsky,

Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. Another requirement of the EID states that the Natural Resources Conservation District must be notified that the document is available for review at your request. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

Date: 2/15/2010

Attn: Permitting Branch

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Facility Guidance Plan

To Whom It May Concern,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Facility Guidance Plan to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: State of Arkansas
Arkansas Natural Resources Commission
101 East Capitol, Suite 350
Little Rock, AR 72201

Date: 2/15/2010

Attn: Pris Houchens

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
3	2/15/2010	DRAFT Environmental Information Document
3	2/15/2010	DRAFT Facility Guidance Plan
3	2/15/2010	Inflow and Infiltration Analysis
3	2/15/2010	2007 Conway Corporation Wastewater Master Plan
3	2/15/2010	2008 Conway Corporation Design Memorandum

Ms. Houchens,

For your review, Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, Facility Guidance Plan, Inflow and Infiltration Analysis, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118

Date: 2/15/2010

Attn: Permitting Branch

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Facility Guidance Plan

To Whom It May Concern,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Facility Guidance Plan to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Historic Preservation Program
323 Center Street, Suite 1500
Little Rock, AR 72201

Date: 2/15/2010

Attn: George McCluskey

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Mr. McCluskey,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of 2007 Wastewater Master Plan and the 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Game and Fish Commission
#2 Natural Resources Drive
Little Rock, AR 72205

Date: 2/15/2010

Attn: Scott Henderson, Director

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Mr. Henderson,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Department of Finance and Administration,
State Clearinghouse
1515 W. Seventh Street, Suite 330
Little Rock, AR 72201

Date: 2/15/2010

Attn: Tracy Copeland, Manager

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Mr. Copeland,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Natural Heritage Commission
323 Center Street, Suite 1500
Little Rock, AR 72201

Date: 2/15/2010

Attn: Cindy Osborne, Data Manager

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Ms. Osborne,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document, and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: U.S. Fish and Wildlife Service
110 S. Amity, Suite 300
Conway, AR 72032

Date: 2/15/2010

Attn: Field Supervisor

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

USFWS Staff Member,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: Arkansas Department of Parks and Tourism
#1 Capitol Mall, 4A-900
Little Rock, AR 72201

Date: 2/15/2010

Attn: Bryan Keller

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	DRAFT Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Mr. Keller,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

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4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: U.S. Army Corps of Engineers, Regulatory Branch
700 West Capitol
Little Rock, AR 72201

Date: 2/15/2010

Attn: Elaine Edwards, Chief

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
1	2/15/2010	Environmental Information Document
1	2/15/2010	2007 Conway Corporation Wastewater Master Plan
1	2/15/2010	2008 Conway Corporation Design Memorandum

Ms. Edwards,

For your review, Garver is submitting on behalf of Conway Corporation a draft copy of their Environmental Information Document and final copies of their 2007 Wastewater Master Plan and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker

Freddie Walker, EI

L:\2008\08057000 - Conway Corp WW Improvements\Design\Reports\ANRC\ANRC FINAL REPORTS\Appendices\Submittals & Notifications\USACOE Transmittal.doc

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

TRANSMITTAL

To: State of Arkansas
Arkansas Natural Resources Commission
101 East Capitol, Suite 350
Little Rock, AR 72201

Date: 2/15/2010

Attn: Pris Houchens

From: Aaron Stallmann, PE

RE: ANRC CWSRF for Conway Corporation's Wastewater System Improvements

Copies To:

QTY	DATE	DESCRIPTION
3	2/15/2010	DRAFT Environmental Information Document
3	2/15/2010	DRAFT Facility Guidance Plan
3	2/15/2010	Inflow and Infiltration Analysis
3	2/15/2010	2007 Conway Corporation Wastewater Master Plan
3	2/15/2010	2008 Conway Corporation Design Memorandum

Ms. Houchens,

For your review, Garver is submitting on behalf of Conway Corporation draft copies of their Environmental Information Document, Facility Guidance Plan, Inflow and Infiltration Analysis, 2007 Wastewater Master Plan, and 2008 Design Memorandum to meet the requirements of Arkansas Natural Resources Commission's Clean Water State Revolving Fund program for funding of proposed Conway Corporation's Wastewater System Improvements. The ANRC assigned project number is WRD-003-694, and the assigned agreement number is 00747-CGO-L. If you have any questions please feel free to contact Aaron Stallmann or Kirby Rowland at (501)-376-3633.

Sincerely,
Garver, LLC

Freddie Walker, EI

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

Mr. Mark Sattelberg
Field Supervisor
U.S. Fish and Wildlife Service
110 S. Amity
Suite 300
Conway, Arkansas 72032

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Mr. Sattelberg:

This letter contains information pertaining to the Floodplain Management Notice for the Conway Corporation Tupelo Bayou Wastewater Treatment Plant (WWTP) as required by the Arkansas Natural Resources Commission (ANRC) Environmental Information Document (EID).

The main facilities of the proposed Tupelo Bayou WWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The project will include the construction of a force main and gravity line to transport flow from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP.

The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. An alternative alignment that would completely avoid the 100-year floodplain is not obtainable in this case. In order to transport wastewater from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP, the alignment would inevitably have to cross a segment of the 100-year floodplain.

An alternative alignment that would minimize the construction within the 100-year floodplain was not considered a feasible alternative due to the topography of the land between the treatment plants. The alternative alignment would require pumping over Donnell Ridge. This would necessitate additional pumping and force main which would in turn increase capital and operating costs. Another advantage of the preferred alignment is that it provides immediate gravity sewer service to an area of Conway that is under heavy development pressure. The area can be served by this gravity line without requiring a proliferation of pump stations to serve individual developments in the area.

Adherence with the applicable federal, state, and local regulations shall be followed to minimize potential harm to the floodplain during construction. All areas of the project where dredging, tunneling, and trenching will take place within the floodplain shall be restored to existing conditions such that existing water courses are not impeded and natural and beneficial values served by the floodplain are preserved.

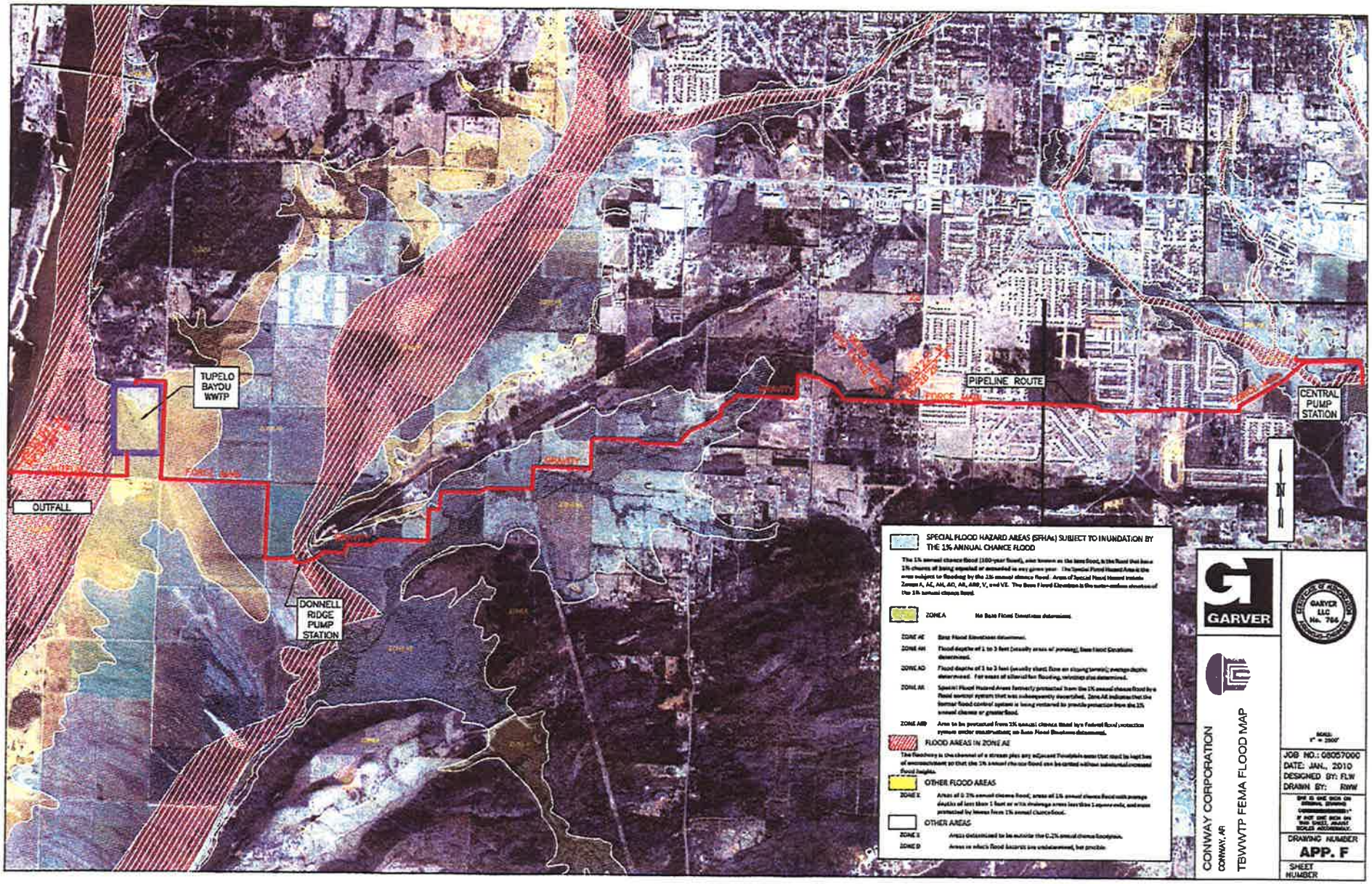
A map showing the relationship of the proposed sewer line alignment in relation to the floodway and floodplain has been attached to this letter. Please contact A.J. Kaufman at (501) 376-3633 with any questions.

Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map


TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
N
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
FLOOD AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
GARVER
GARVER LLC No. 764
CONWAY CORPORATION
CONWAY, AR
TBWWTP FEMA FLOOD MAP
SCALE: 1" = 2000'
JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

GARVER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

Mr. Tracy Copeland, Manager
State Clearinghouse
Department of Finance and Administration
1515 W. Seventh Street
Suite 330
P.O. Box 8031
Little Rock, Arkansas 72201

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Mr. Copeland:

This letter contains information pertaining to the Floodplain Management Notice for the Conway Corporation Tupelo Bayou Wastewater Treatment Plant (WWTP) as required by the Arkansas Natural Resources Commission (ANRC) Environmental Information Document (EID).

The main facilities of the proposed Tupelo Bayou WWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The project will include the construction of a force main and gravity line to transport flow from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP.

The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. An alternative alignment that would completely avoid the 100-year floodplain is not obtainable in this case. In order to transport wastewater from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP, the alignment would inevitably have to cross a segment of the 100-year floodplain.

An alternative alignment that would minimize the construction within the 100-year floodplain was not considered a feasible alternative due to the topography of the land between the treatment plants. The alternative alignment would require pumping over Donnell Ridge. This would necessitate additional pumping and force main which would in turn increase capital and operating costs. Another advantage of the preferred alignment is that it provides immediate gravity sewer service to an area of Conway that is under heavy development pressure. The area can be served by this gravity line without requiring a proliferation of pump stations to serve individual developments in the area.

Adherence with the applicable federal, state, and local regulations shall be followed to minimize potential harm to the floodplain during construction. All areas of the project where dredging, tunneling, and trenching will take place within the floodplain shall be restored to existing conditions such that existing water courses are not impeded and natural and beneficial values served by the floodplain are preserved.

A map showing the relationship of the proposed sewer line alignment in relation to the floodway and floodplain has been attached to this letter. Please contact A.J. Kaufman at (501) 376-3633 with any questions.

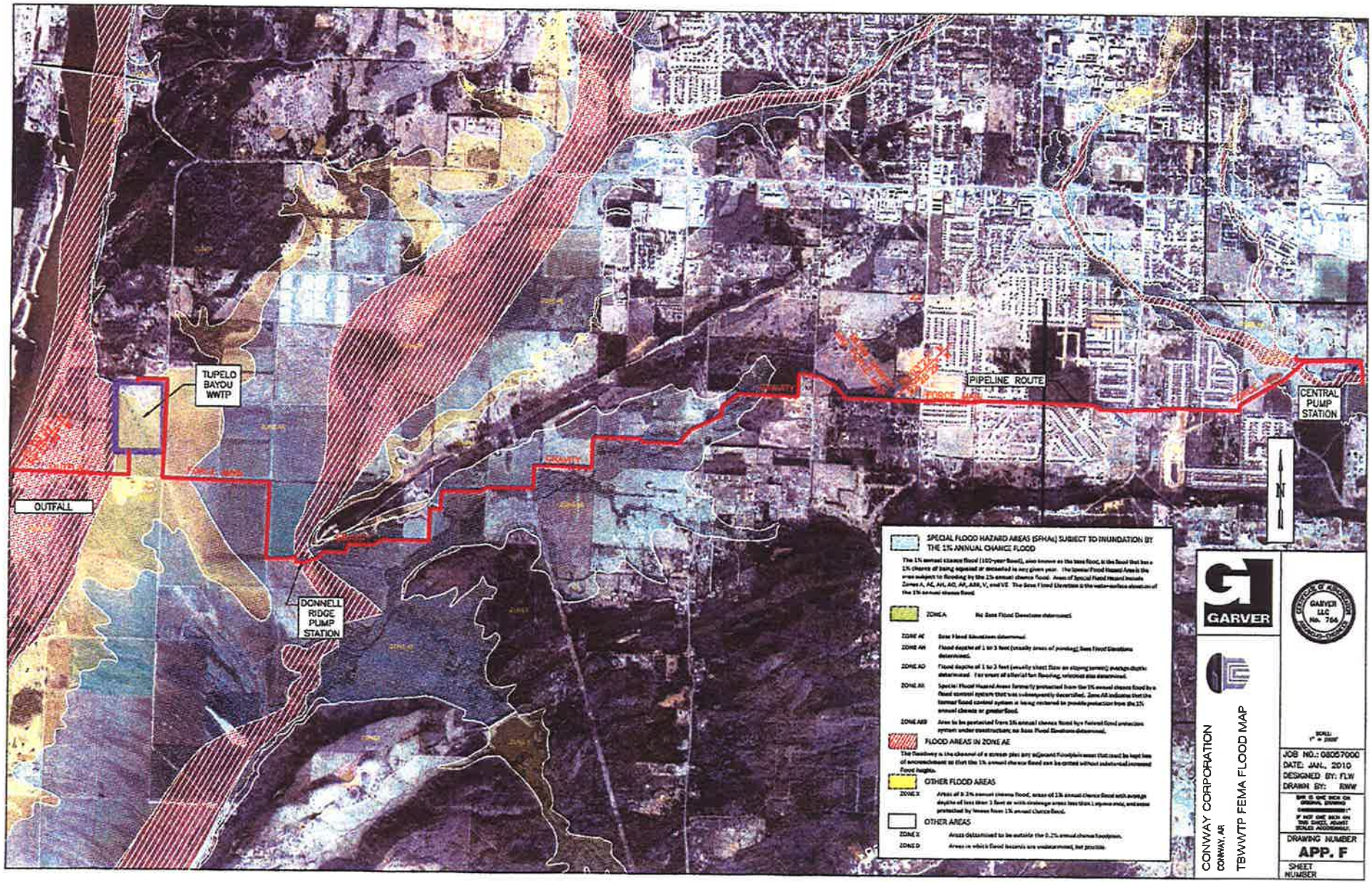
Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map

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TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
N
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
FLOOD AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
GARVER
GARVER LLC No. 704
CONWAY CORPORATION
CONWAY, AR
TBWWTP FEMA FLOOD MAP
JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

GARVER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

Mr. Ronnie Hall, Floodplain Administrator
100 East Robins Street
Conway, Arkansas 72032

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Mr. Hall:

This letter contains information pertaining to the Floodplain Management Notice for the Conway Corporation Tupelo Bayou Wastewater Treatment Plant (WWTP) as required by the Arkansas Natural Resources Commission (ANRC) Environmental Information Document (EID).

The main facilities of the proposed Tupelo Bayou WWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The project will include the construction of a force main and gravity line to transport flow from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP.

The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. An alternative alignment that would completely avoid the 100-year floodplain is not obtainable in this case. In order to transport wastewater from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP, the alignment would inevitably have to cross a segment of the 100-year floodplain.

An alternative alignment that would minimize the construction within the 100-year floodplain was not considered a feasible alternative due to the topography of the land between the treatment plants. The alternative alignment would require pumping over Donnell Ridge. This would necessitate additional pumping and force main which would in turn increase capital and operating costs. Another advantage of the preferred alignment is that it provides immediate gravity sewer service to an area of Conway that is under heavy development pressure. The area can be served by this gravity line without requiring a proliferation of pump stations to serve individual developments in the area.

Adherence with the applicable federal, state, and local regulations shall be followed to minimize potential harm to the floodplain during construction. All areas of the project where dredging, tunneling, and trenching will take place within the floodplain shall be restored to existing conditions such that existing water courses are not impeded and natural and beneficial values served by the floodplain are preserved.

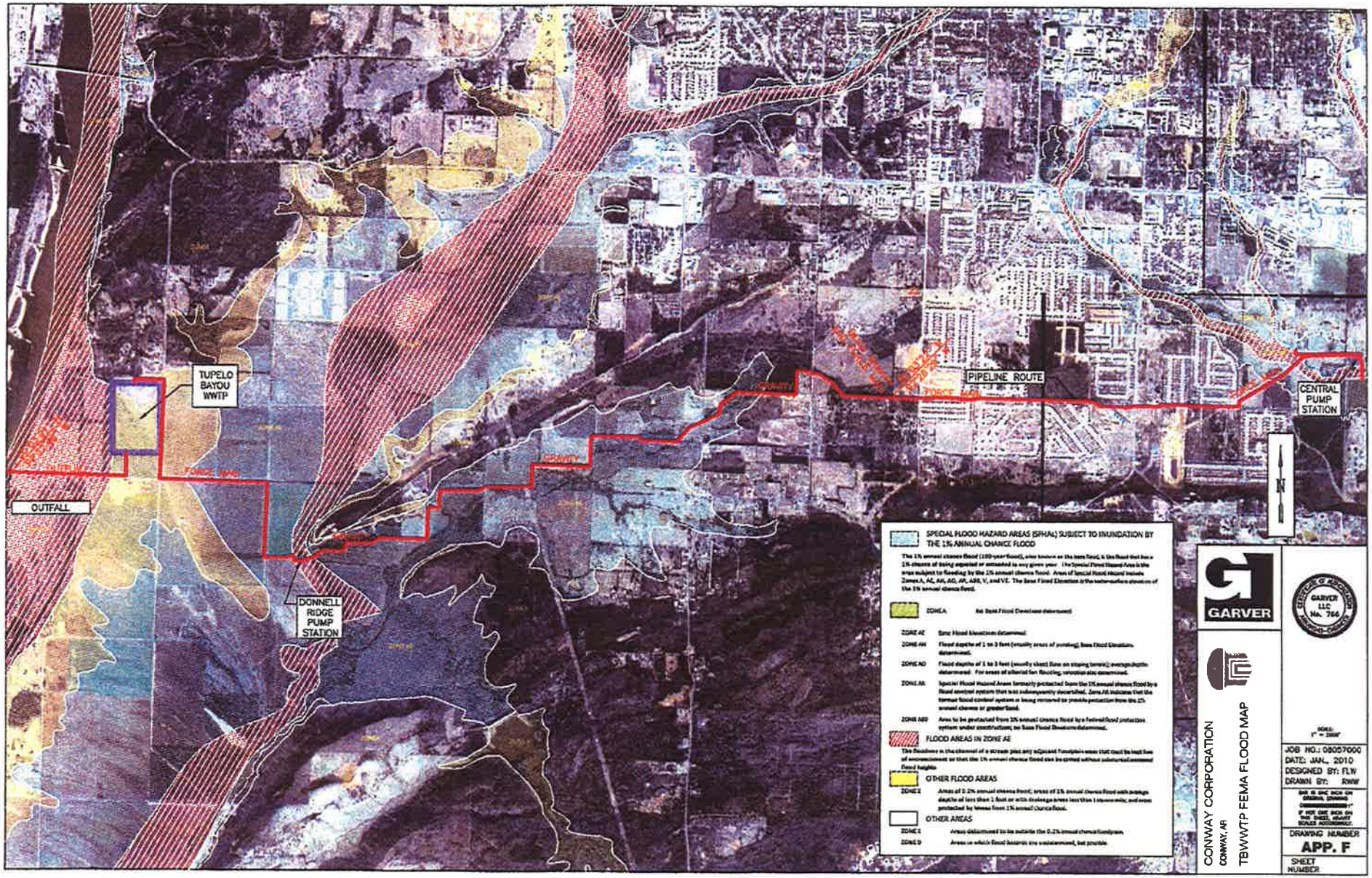
A map showing the relationship of the proposed sewer line alignment in relation to the floodway and floodplain has been attached to this letter. Please contact A.J. Kaufman at (501) 376-3633 with any questions.

Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map


TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
GRAVITY
FORCE MAIN
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
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ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
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ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
FLOOD AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
GARVER
GARVER LLC No. 766
CONWAY CORPORATION
CONWAY, AR
TBWWTP FEMA FLOOD MAP
JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

GARVER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

FEMA
Natural and Technological Hazardous Division
800 N. Loop 288
Denton, Texas 76201

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Dear Sir or Madam:

This letter contains information pertaining to the Floodplain Management Notice for the Conway Corporation Tupelo Bayou Wastewater Treatment Plant (WWTP) as required by the Arkansas Natural Resources Commission (ANRC) Environmental Information Document (EID).

The main facilities of the proposed Tupelo Bayou WWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The project will include the construction of a force main and gravity line to transport flow from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP.

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A map showing the relationship of the proposed sewer line alignment in relation to the floodway and floodplain has been attached to this letter. Please contact A.J. Kaufman at (501) 376-3633 with any questions.

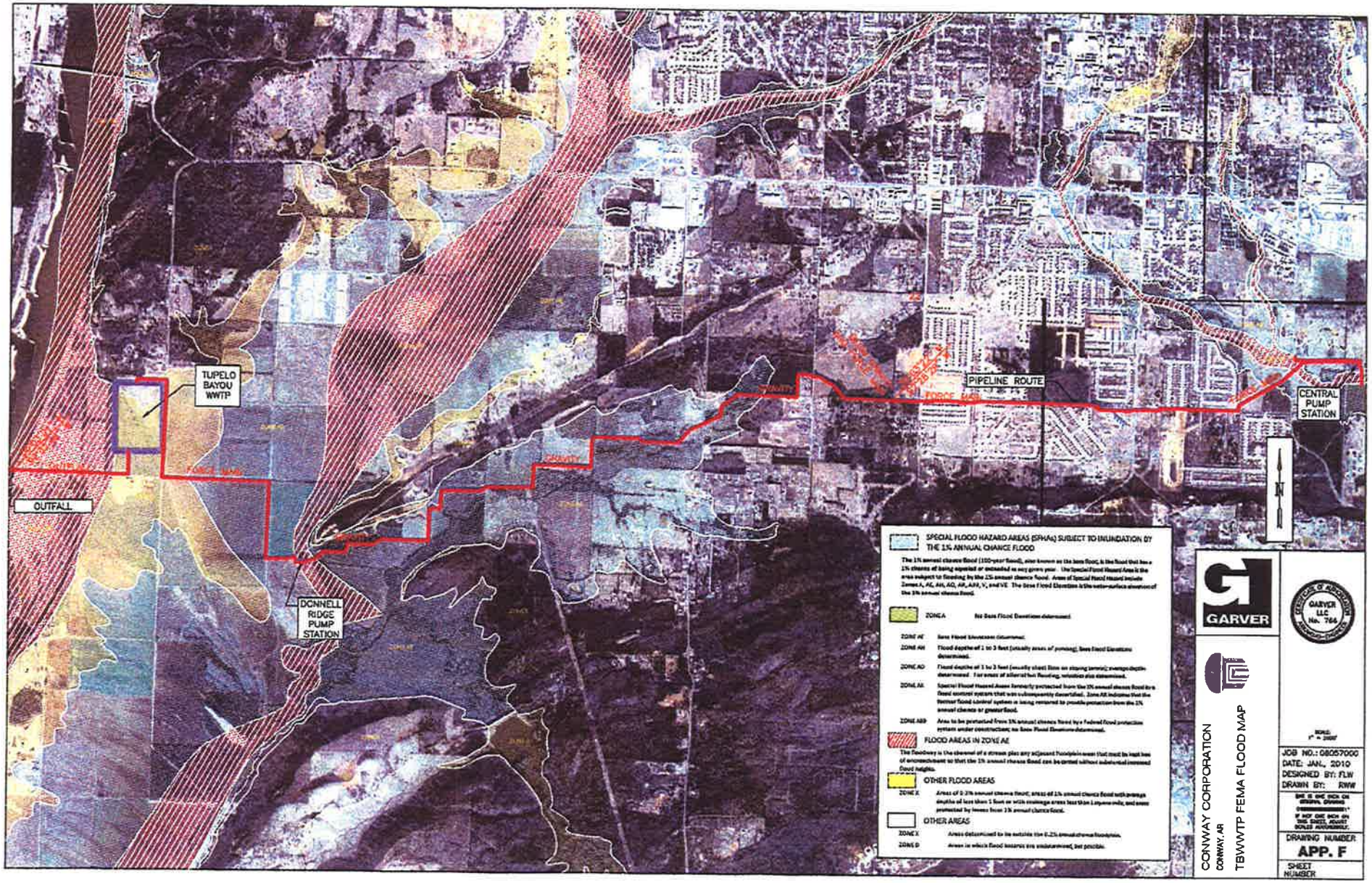
Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map

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TUPELO BAYOU WWTP
OUTFALL
FORCE MAIN
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
N
SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
ZONE A No Base Flood Elevations determined.
ZONE AE Base Flood Elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
FLOOD AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
OTHER FLOOD AREAS
ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE X Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.
GARVER
GARVER LLC No. 764
CONWAY CORPORATION
CONWAY, AR
TBWWTP FEMA FLOOD MAP
JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

Ms. Elaine Edwards, Chief
Regulatory Branch
Army Corps of Engineers
700 West Capitol
Little Rock, Arkansas 72201

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Ms. Edwards:

This letter contains information pertaining to the Floodplain Management Notice for the Conway Corporation Tupelo Bayou Wastewater Treatment Plant (WWTP) as required by the Arkansas Natural Resources Commission (ANRC) Environmental Information Document (EID).

The main facilities of the proposed Tupelo Bayou WWTP are not located within the 100-year floodplain, although, a portion of the line work associated with this project will be constructed within the 100-year floodplain. The project will include the construction of a force main and gravity line to transport flow from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP.

The majority of the gravity line associated with this project will be constructed within the 100-year floodplain. An alternative alignment that would completely avoid the 100-year floodplain is not obtainable in this case. In order to transport wastewater from the existing Stone Dam WWTP to the proposed Tupelo Bayou WWTP, the alignment would inevitably have to cross a segment of the 100-year floodplain.

An alternative alignment that would minimize the construction within the 100-year floodplain was not considered a feasible alternative due to the topography of the land between the treatment plants. The alternative alignment would require pumping over Donnell Ridge. This would necessitate additional pumping and force main which would in turn increase capital and operating costs. Another advantage of the preferred alignment is that it provides immediate gravity sewer service to an area of Conway that is under heavy development pressure. The area can be served by this gravity line without requiring a proliferation of pump stations to serve individual developments in the area.

Adherence with the applicable federal, state, and local regulations shall be followed to minimize potential harm to the floodplain during construction. All areas of the project where dredging, tunneling, and trenching will take place within the floodplain shall be restored to existing conditions such that existing water courses are not impeded and natural and beneficial values served by the floodplain are preserved.

A map showing the relationship of the proposed sewer line alignment in relation to the floodway and floodplain has been attached to this letter. Please contact A.J. Kaufman at (501) 376-3633 with any questions.

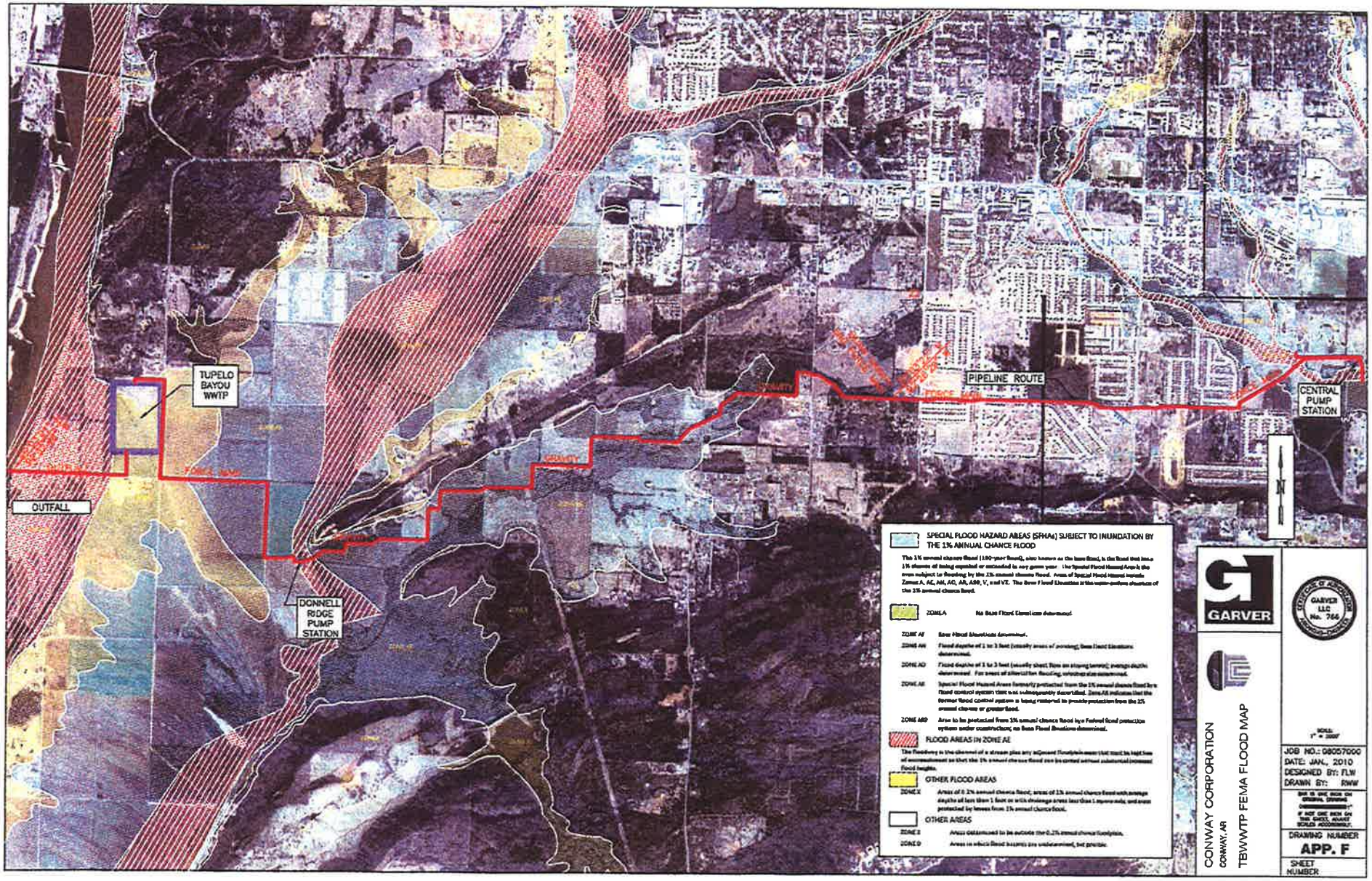
Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map

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TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
CENTRAL PUMP STATION
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ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
FLOOD AREAS IN ZONE AE
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GARVER
CONWAY CORPORATION
CONWAY, AR
TBW/WTP FEMA FLOOD MAP
GARVER LLC No. 766
JOB NO.: 08057000
DATE: JAN., 2010
DESIGNED BY: FLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

4701 Northshore Drive
North Little Rock, AR 72118

TEL 501.376.3633
FAX 501.372.8042

www.GarverUSA.com

January 14, 2010

Mr. Keith Sanders, Program Coordinator
Arkansas Natural Resources Commission
101 East Capitol
Suite 350
Little Rock, Arkansas 72201

Re: Conway Corporation Tupelo Bayou WWTP Floodplain Management Notice

Mr. Sanders:

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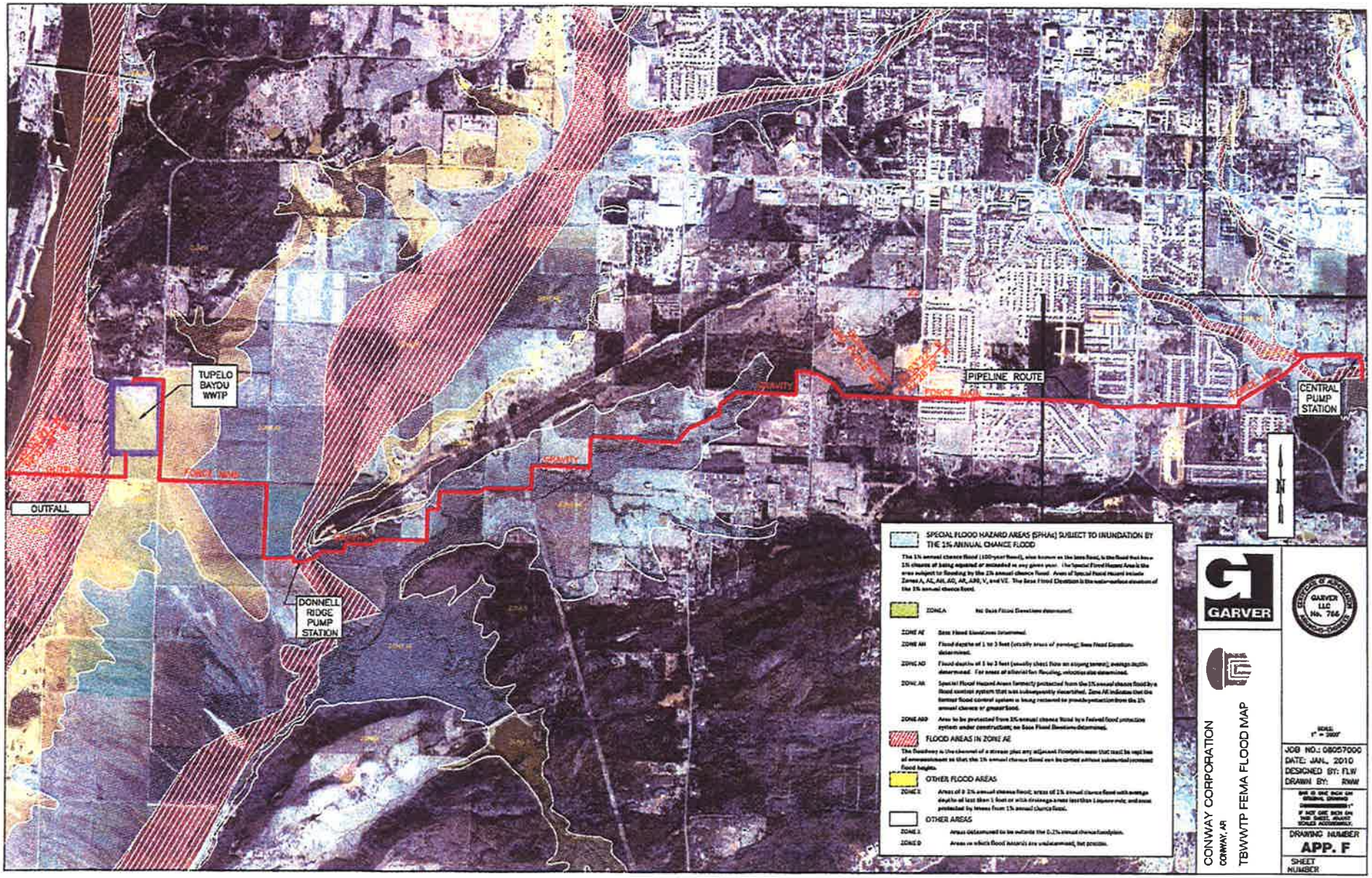
Sincerely,

GARVER, LLC

Adrian J. Kaufman, EI
Project Engineer

Attachments: TBWWTP FEMA Flood Map

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TUPELO BAYOU WWTP
OUTFALL
DONNELL RIDGE PUMP STATION
PIPELINE ROUTE
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SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
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ZONE X
OTHER AREAS
ZONE X
ZONE D
GARVER
CONWAY CORPORATION
CONWAY, AR
TBWWTP FEMA FLOOD MAP
GARVER LLC No. 766
JOB NO.: 08057000
DATE: JAN. 2010
DESIGNED BY: TLW
DRAWN BY: RWW
DRAWING NUMBER
APP. F
SHEET NUMBER

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

February 2, 2010

Regulatory Division

Mr. Fred Walker
Garver Engineers
4701 Northshore Drive
North Little Rock, Arkansas 722118

SUBJECT: Permit Application No. 2009-00058

Dear Mr. Walker:

Please refer to your requests received on February 11, 2009, and January 26, 2010, on behalf of Conway Corporation, concerning Corps of Engineers permit requirements pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The proposed project involves the construction of a new utility pipeline and associated outfall structure located along the left decending bank of the Arkansas River, Navigation Mile 154, near Conway, Faulkner County, Arkansas. Your request has been assigned File No. 2009-00058.

Based on information provided in your January 26, 2010, submittal, it appears there may be areas that meet the definition of waters of the US within the project area. In addition, the Arkansas River is considered navigable at this location. Therefore, a Department of the Army permit pursuant to Section 404 and Section 10 may be required.

If you plan any activity that involves placement of dredged or fill material in a possible wetland or other water of the US, or work in or affecting a navigable water, you should submit plans to this office for a permit determination well in advance of any planned work.

Your cooperation in the Regulatory Program is appreciated. If you have any questions, please contact me at (501) 324-5295 and refer to Permit No. **2009-00058**.

Sincerely,

Elliott Carman
Project Manager

Copy Furnished:
Russellville Project Office
Ch, Regulatory Enf Br
PM, Mr. Elliott Carman

Appendix M

Comments and Responses

Correspondence Received from ADPT

Dated: March 19, 2010

Comments from ADPT

ADPT does not have any conflicts with this project.

Correspondence Received from AHPP

Dated: February 19, 2010

Comments from AHPP

In addition, if a resource is encountered that appears to possess historical or architectural significance; or if human remains or artifacts, such as Native American pottery, stone tools, old bottles or china are discovered during this project, work in the area of discovery should stop and this office should be contacted immediately. We will evaluate any such finds as expeditiously as possible.

Response to Comments

See Section 2, Part F.

Correspondence Received from AHTD

Dated: February 23, 2010

Comments from AHTD

All facilities to be installed on highway right of way (crossing and parallel) must be with the approval of a permit from the Department, and must be in compliance with the Arkansas State Highway Commission's Utility Accommodation Policy. I am enclosing a copy of the policy as well as an application for a permit and information for obtaining a bond.

We encourage all parallel lines to be installed on private property because utility facilities presently located on existing state highway right-of-way by the permit of the Highway Department shall be considered as not eligible for reimbursement if request to relocate for highway construction.

Response to Comments

See Section 5, Part A.g.).

Correspondence Received from ANRC

Dated: February 18, 2010

Comments from ANRC

Please include in the final EID, upon receipt, responses from the cross-cutting agencies that have not yet commented and address the recommendations made by the agencies that have commented. Also, include the public meeting and hearing information as required in the EID guidance.

Response to Comments

See Appendix K.

FEMA

Correspondence Received from FEMA

Dated: March 30, 2010

Comments from FEMA

The City of Conway participates in the National Flood Insurance Program (NFIP). Therefore, any development that takes place within the city must be reviewed and appropriate permits issued to ensure compliance with its adopted Flood Damage Prevention Ordinance. Our records show that Ronnie Hall is the current Floodplain Administrator. He can be reached at 501-450-6165.

Coordination with the Floodplain Administrator for the City of Conway can ensure that this project is in compliance with the City's Flood Damage Prevention Ordinance and any City regulations/requirements.

Response to Comments

See Appendix K.

Correspondence Received from AGS

Dated: March 4, 2010

Comments from AGS

The only comment I wish to add is that Quarternary age Arkansas River alluvium is composed of an upper 30 feet of silt and clay overlying medium sand 30-50 feet in depth and 50-70 feet coarse sand and gravel that overlies bedrock.

Response to Comments

See Section 2, Part A.

Correspondence Received from AGFC

Dated: March 10, 2010; January 13, 2010

Comments from AGFC

All wetlands in the project area should be avoided or impacts should be minimized where possible. Unavoidable impacts should be mitigated.

All stream crossings should use best management practices for erosion control.

Stream crossing sites should be surveyed for freshwater mussels or evaluated by a malacologist to assess their potential for freshwater mussels.

Large streams should be crossed by attaching a pipe to a bridge if possible or by boring under the streambed. If these two options are unachievable, then the work should be scheduled for June, July, or August to avoid peak spawning times and our agency should be contacted prior to construction.

Response to Comments

See Section 2, Part D and Section 5, Part A.

Correspondence Received from ANHC

Dated: January 25, 2010

Comments from ANHC

We find no records at this time.

Response to Comments

See Appendix H for a copy of the correspondence sent by ANHC.

Correspondence Received from USFWS

Dated: July 21, 2009

Comments from USFWS

The proposed wastewater pipeline outfall for this project occurs along a section of shoreline on the Arkansas River. Sandbars and barren islands along this river are preferred habitat for the endangered interior least tern, and there is a known nesting site located within a mile downstream and directly across the river from the project area. The construction of the pipeline and outfall should not have any affects; however the effluent may have an affect depending on constituents, their concentration, and the volume of discharge. Therefore, a more thorough assessment of the outfall and coordination with ADEQ may be needed in order to assess possible impacts to the interior least tern.

In addition, Stanley Bar islands are also downstream and any effluent has potential to harm waterfowl or spawning fish such as alligator gar. Care should be taken during the construction period and regarding the effluent releases since this is a sensitive area.

Response to Comments

See Section 2, Part D.

Correspondence Received from ADH

Dated: March 12, 2010

Comments from ADH

This office concurs with the proposed improvements detailed in these documents.

State Clearinghouse

Correspondence Received from State Clearinghouse

Dated: March 12, 2010

Comments from State Clearinghouse

At this time there are no objections to the proposed project as long as the mitigation process (avoid, minimize, compensate) is adhered to in regard to wetlands and streams. Appropriate methodologies should be implemented when determining the extent of unavoidable impacts and compensation ratios for wetlands (Charleston Method) and streams (Little Rock Method). The appropriate amount of compensatory mitigation required to offset the impacts should be

implemented to insure that the mitigation is appropriate to "obtain no overall net loss to wetlands" as agreed to within the 1990 EPA/Corps MOA concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines.

Additionally, I recommend that the most current best management practice (BMP's) be made a part of the planning process, and scheduled to be implemented in the pre-construction phase and maintained post-construction until the site stabilizes. Any place, especially if on a slope where soil disturbance will occur due to excavation for construction appropriate methods such as hydro seeding, or providing cover to prevent or minimize sedimentation should be implemented, along with BMP's pertaining to erosion and sediment control practices, construction in sensitive areas, stormwater management controls, waste disposal practices, petroleum and chemical spill prevention and control procedures, stream crossing procedures, measures to minimize offsite tracking of sediments by construction vehicles, and maintenance and inspection procedures. These efforts will help minimize erosion and maintain water quality in the area.

Response to Comments

See Section 2, Part B.