Table D-1. Impacted Wetlands and Other Waters of the U.S.

Area	Station[1]	Type of Water	Type of Impact	Vegetation	Impacted Area							
					Temporary acre	Permanent acre	Permanent feet	Function	Credit/ foot	Mitigation feet	Credit/ acre	Mitigation acre
1	8+10 to 8+80 Crossing at 8+42	Other Waters of the U.S. - Stormwater Outfall[2]	Aerial pipe crossing	Ruderal Ditch	0.01	0.01	30	Low	0.008	0.24	---	---
2	14+50 to 16+00	Wetland	None[3]	Emergent wetland	---	---	---	Low	---	---	---	---
3	14+00 to 18+00	Perennial Pond	None[3]	Emergent wetland	---	---	---	Low	---	---	---	---
4	44+55 to 45+50 Crossing at 45+00	Other Waters of the U.S. - Stormwater Outfall[2]	Aerial pipe crossing	Ruderal Ditch	0.47	0.20	100	Low	0.008	0.8	---	---
5	---	Not Jurisdictional	---	---	---	---	---	---	---	---	---	---
6	64+00 to 68+00	Wetland	Temporary[4]	Emergent wetland	0.55	---	---	Low	---	---	---	---
7	75+00 to 78+00	Wetland	Temporary[4]	Emergent wetland	0.41	---	---	Low	---	---	---	---
8	87+50 to 103+50	Other Waters of the U.S. - Stormwater Outfall and Perennial Pond[5]	Concrete ballast cap and topsoil	Emergent wetland	4.03	0.45	---	Low	---	---	2	0.9
9	117+40 to 117+90 Crossing at 117+73	Other Waters of the U.S. - Intermittent Stream[6]	Box culvert and gabions	Emergent wetland	0.08	0.06	50	Low	0.008	0.4	---	---
10	120+70 to 121+20	Wetland	Temporary[2]	Emergent wetland	0.06	---	---	Low	---	---	---	---
11	129+75 to 130+25	Wetland	None[3]	Emergent wetland	---	---	---	Low	---	---	---	---
12	2+00 to 2+30	Other Waters of the U.S. - Intermittent Stream[6]	Temporary[2]	Ruderal Ditch	0.01	---	---	Low	---	---	---	---
12b	20 feet east of 12	Wetland	Temporary[2]	Emergent wetland	0.03	---	---	Low	---	---	---	---
13	13+40 to 13+75	Other Waters of the U.S. - Intermittent Stream[6]	Concrete box culvert	Ruderal Ditch	0.14	0.04	50	Low	0.008	0.4	---	---
14	33+50 to 33+80	Other Waters of the U.S. - Lake Outfall[7]	Temporary[2]	Open Water at spillway	0.37	---	---	Low	---	---	---	---
15	38+50 to 39+50	Other Waters of the U.S. - Lake Outfall[7]	Aerial crossing	Open Water at spillway	0.08	0.005	20	Low	0.008	0.16	---	---
				Totals	6.24[4]	0.77	250			2.00[9]		0.90[9]

[1] Station identification references to location of the jurisdictional site along the pipeline alignment. Reference the Level 3 Review Package project drawings.
[2] Other Waters of the U.S. – The Stormwater Outfall is within the floodplain and provides a direct connection to the Elm Fork. Permanent losses are associated with the concrete pad and the riprapped channel banks.
[3] The regulated area is outside of the construction easement.
[4] Temporary Impacts, due to construction activities for pipe placement, returned to preconstruction condition.
[5] Other Waters of the U.S. – The perennial ponds are abandoned borrow pits in a frequently flooded area that will be filled during construction to provide minimum pipe cover.
[6] Other Waters of the U.S. – Drainage ditch associated with drainage from surrounding area. The area is within the floodplain and drains directly to the Elm Fork. Permanent losses associated with the installation of the gabions.
[7] Other Waters of the U.S. – Spillway from Lake Sitatunga to Elm Fork.
[8] Other Waters of the U.S. – Spillway from Lake Carolyn to Elm Fork. Permanent losses associated with the installation of the pipe support piers.
[9] Mitigation for permanent impacts only, mitigation will be by mitigation banking. Credits estimated based on the low quality of the impacted area. Actual credit ratio will be set by the mitigation bank. Actual credits necessary to compensate for permanent impacts will be determined by the USACE.

Table D-2. Waters Upload Sheet

Waters Name	Cowardin Code	HGM Code	Area (acres)	Linear* (ft)	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Local Waterway
Area 1	PFO1	Riverine	--	30	RPWWN	32.83140556	-96.89321944	Elm Fork
Area 2	PEM1	Depress	--	150	RPWWN	32.83219722	-96.89210556	Elm Fork
Area 3	PUB3	Depress	--	200	RPWWN	32.83304167	-96.89043611	Elm Fork
Area 4	WOUS**	--	--	100	RPW	32.84054444	-96.89069444	Elm Fork
Area 5	UPL	NA	--	NA	UPLAND	--	--	Elm Fork
Area 6	PUB3	Depress	--	400	RPWWN	32.84723611	-96.89350000	Elm Fork
Area 7	PEM1	Depress	--	300	RPWWN	32.84775556	-96.89467778	Elm Fork
Area 8	PUB3	Riverine	--	1,300	RPWWN	32.85027222	-96.89980000	Elm Fork
Area 9	WOUS	--	--	50	RPW	32.85254722	-96.90645556	Elm Fork
Area 10	PUB3	Depress	--	100	RPWWN	32.85266111	-96.90754444	Elm Fork
Area 11	PUB3	Depress	--	50	RPWWN	32.85278611	-96.90709722	Elm Fork
Area 12	WOUS	--	--	5	RPW	32.85626111	-96.91730000	Elm Fork
Area 12b	PEM1	Depress	--	45	RPWWN	32.85621944	-96.91726667	Elm Fork
Area 13	WOUS	--	--	50	RPW	32.85737500	-96.92072778	Elm Fork
Area 14	WOUS	--	--	80	RPW	32.85963611	-96.92616389	Elm Fork
Area 15	WOUS	--	--	20	RPW	32.86083056	-96.92544722	Elm Fork
Elm Fork ***	WOUS	--	--	19,200	TNW	--	--	Elm Fork
				22,080				

* All distances are relative to the pipeline crossing the waterbody and were derived from Table 3-1 in *Preliminary Jurisdictional Determination of Waters of the United States* , as prepared by Black and Veatch and dated July 1999.

** WOUS = waters of the United States other than wetlands and other special aquatic sites

*** Elm Fork branch of the Trinity River. The pipeline alignment does not cross the Trinity River, but is adjacent to the River and in the floodplain along the pipeline alignment.

Table D-3. Hydrologic* Function

Area	Short-term surface water storage	Long-term surface water storage	Maintenance of high water tables	Overall Function Performance
Area 1	Area is a former stormwater ditch that discharges directly to the Elm Fork, so surface water storage is minimal	Excavated ditch contribution to flood attenuation is negligible. Storage is limited to high water periods in the Elm Fork.	Area retains shallow surface water that could contribute to the water table, but the overall contribution is relatively small	Low
Area 2	Area is a small shallow vegetated depression with a restricted storage capacity	Area contribution to flood attenuation is minimal	Area retains shallow surface water that could contribute to the water table, but overall contribution is relatively small	Low
Area 3	Area is a small pond (approximately 2 acres) with fringing wetland vegetation	Storage in the pond is constrained by permanent standing water elevations	There is no evidence of significant groundwater recharge	Low
Area 4	This location is a concrete stormwater outfall	Storage levels in the discharge channel are dependent on water levels in Elm Fork	There is no evidence of significant groundwater recharge	Low
Area 5	**			
Area 6	Area is a shallow depression located in floodplain that could store water, mainly from precipitation	Total long-term storage capacity is small; minimal flood attentuation potential	Some groundwater contribution is likely, but highly dependent on standing water level	Low
Area 7	Area is a depression in floodplain with minimal storage potential	Area is a depression in floodplain with minimal flood attenuation potential	There is no evidence of any groundwater recharge	Low
Area 8	This is a pond complex consisting of several former borrow areas. Depending on time of year, there is a small potential for water storage	Long-term surface water storage is dependent on time of year and existing water levels, but area size provides moderate attenuation potential	There is no evidence of significant groundwater recharge	Low to moderate
Area 9	Stream crossing; storage limited to bankfull width and dependent on Elm Fork water level	Negligible long-term storage capacity because of direct link to Elm Fork water level	There is no evidence of significant groundwater recharge	Low
Area 10	Available storage capacity is dependent on season and precipitation	Long-term storage is dependent on existing water level and season; flood attenuation potential is negligible	There is no evidence of significant groundwater recharge	Low
Area 11	Available storage capacity is dependent on season and precipitation	Long-term storage is dependent on existing water level and season; flood attenuation potential is low to moderate	There is no evidence of significant groundwater recharge	Low
Area 12	Stream crossing; storage limited to bankfull width and dependent on Elm Fork water level	Negligible long-term storage capacity because of direct link to Elm Fork water level	There is no evidence of significant groundwater recharge	Low
Area 13	Stream crossing; storage limited to bankfull width and dependent on Elm Fork water level	Negligible long-term storage capacity because of direct link to Elm Fork water level	There is no evidence of significant groundwater recharge	Low
Area 14	Constructed lake outfall; storage capacity dependent on Elm Fork water level	Negligible long-term storage capacity because of direct link to Elm Fork water level	There is no evidence of significant groundwater recharge	Low
Area 15	Constructed lake outfall; storage capacity dependent on Elm Fork water level	Negligible long-term storage capacity because of direct link to Elm Fork water level	There is no evidence of significant groundwater recharge	Low

* Wetland functions follow "Wetland Functions and Values" on the U.S. Army Corps of Engineers website at http://www.usace.army.mil/CECW/Documents/cecwo/reg/wet_f_v.pdf

** Area 5 was found non-jurisdictional by a U.S. Army Corps of Engineers jurisdictional determination in 1999 (USACE File Number 199800058)

Table D-4. Biogeochemical* Function

Area	Transformation and cycling of elements	Retention, removal of dissolved substances	Peat Accumulation	Accumulation/retention of inorganic sediment	Overall Function Performance
Area 1	Emergent vegetation limited to banks of ditch, so cycling functions poorly performed	Some short-term storage depending on lack of precipitation or high water levels in Elm Fork	Minimal decomposition, most accumulation in the form of inorganic sediments, small amounts of vegetation material in situ and anoxia seldom present	Sediment depostion from Elm Fork high water levels in ditch as water levels recede, but storage is dependent on frequency of Elm Fork flooding	Low
Area 2	Emergent vegetation density sufficient to provide moderate cycling function; plant species composition not diverse	Some vegetation adsorption likely, but overall retention small relative to area served	Dense vegetation present, but anaerobic and acidic conditions that slows decomposition seldom present	Sediment deposition unlikely because of high landscape position. Retention of suspended sediments likely following flood events.	Low
Area 3	No submerged aquatic vegetation, emergent vegetation or algae observed, cycling not well-performed	With no submerged aquatic vegetation present, retention and removal is limited to storage as sediments	No submerged aquatic vegetation present and little to no input from external sources; anaerobic and acidic conditions unlikely	Retention of sediments is limited to flood events since precipitation is only other water source	Low to Moderate
Area 4	System is flow-through with limited storage capacity or retention time dependent on frequency of stormwater runoff	Retention time limited to periods between stormwater discharge events	No submerged aquatic vegetation present and little to no input from external sources; anaerobic and acidic conditions unlikely	Retention of sediments is limited to flood events and is unlikely to be significant because of intent to discharge runoff	Low
Area 5	**				
Area 6	Vegetation, mostly grasses, are present. Cycling limited to a few plant species with minimal surface area.	Vegetation, mostly grasses, are present. Adsorption limited to a few plant species with minimal surface area.	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention of sediments is limited to flood events and is unlikely to be significant because of the limited wetland size	Low
Area 7	Poorly vegetated, this wetland cannot provide significant nutrient cycling	Poorly vegetated, this wetland cannot provide significant removal or transformation of dissolved substances	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention of sediments is limited to flood events and storage capacity is small	Low
Area 8	Poorly vegetated, this wetland cannot provide significant nutrient cycling	Poorly vegetated, this wetland cannot provide significant removal or transformation of dissolved substances	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention of sediments is limited to flood events as flood water recedes	Low
Area 9	Storage time is limited to periods between outfall events and unlikely to provide significant levels of nutrient cycling	Area is poorly vegetated and unlikely to provide significant levels of nutrient transformation or conversion	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention time is limited by frequency of outfall events	Low
Area 10	Poorly vegetated, this area cannot provide significant nutrient cycling	Poorly vegetated, this area cannot provide significant removal or transformation of dissolved substances	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention of sediments is limited to flood events as flood water recedes	Low
Area 11	Poorly vegetated, this area cannot provide significant nutrient cycling	Poorly vegetated, this area cannot provide significant removal or transformation of dissolved substances	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention of sediments is limited to flood events as flood water recedes	Low
Area 12	Storage time is limited to periods between outfall events and unlikely to provide significant levels of nutrient cycling	Area is poorly vegetated and unlikely to provide significant levels of nutrient transformation or conversion	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention time is limited by frequency of outfall events	Low
Area 13	Storage time is limited to periods between outfall events and unlikely to provide significant levels of nutrient cycling	Area is poorly vegetated and unlikely to provide significant levels of nutrient transformation or conversion	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention time is limited by frequency of outfall events	Low
Area 14	Storage time is limited to periods between outfall events and unlikely to provide significant levels of nutrient cycling	Area is poorly vegetated and unlikely to provide significant levels of nutrient transformation or conversion	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention time is limited by frequency of outfall events	Low
Area 15	Storage time is limited to periods between outfall events and unlikely to provide significant levels of nutrient cycling	Area is poorly vegetated and unlikely to provide significant levels of nutrient transformation or conversion	Anaerobic and acidic conditions suitable for peat formation unlikely	Retention time is limited by frequency of outfall events	Low

* Wetland functions follow "Wetland Functions and Values" on the U.S. Army Corps of Engineers website at http://www.usace.army.mil/CECW/Documents/cecwo/reg/wet_f_v.pdf

** Area 5 was found non-jurisdictional by a U.S. Army Corps of Engineers jurisdictional determination in 1999 (USACE File Number 199800058)

Table D-5. Habitat and Food Web Support*

Area	Maintenance of characteristic plant communities	Maintenance of characteristic energy flow	Habitat for Threatened or Endangered Species	Overall Function Performance
Area 1	Area is disturbed by past use as a drainage ditch and plant community poorly developed and dominated by non-conservative species	Water balance and plant community subject to frequent disturbance from high water events in Elm Fork resulting in fluctuating conditions	None present	Low
Area 2	Plant community is stable, but lacks diversity	Conditions in wetland appear to be stable	None present	Low to Moderate
Area 3	Limited to banks of pond	Conditions in pond are dependent on external inputs	None present	Low
Area 4	None present	Flushing prevents significant forage sources from developing; limited to external inputs	None present	Low
Area 5	**			
Area 6	This wetland has the same plant community as observed in 1998	Forage (quantity and quality) available to herbivores and carnivores is limited by small wetland size and depauperate plant community	None present	Moderate
Area 7	Plant community unstable, dependent on long-term conditions seldom present	Forage limited to microorganisms tolerant of highly disturbed conditions	None present	Low
Area 8	Plant community unstable, dependent on long-term conditions seldom present	Energy exchange limited to microorganisms tolerant of highly disturbed conditions	None present	Low
Area 9	Plant community limited to ditch banks	Area subject to frequent and sudden changes in flow affecting availablity of energy resources	None present	Low
Area 10	Plant community limited to edge of wetland and subject to frequent disturbances	Energy exchange limited to microorganisms tolerant of highly disturbed conditions	None present	Low
Area 11	Plant community limited to edge of wetland and subject to frequent disturbances	Energy exchange limited to microorganisms tolerant of highly disturbed conditions	None present	Low
Area 12	Plant community limited to ditch banks	Area subject to frequent and sudden changes in flow affecting availablity of energy resources	None present	Low
Area 13	Plant community limited to ditch banks	Area subject to frequent and sudden changes in flow affecting availablity of energy resources	None present	Low
Area 14	Plant community limited to streambanks, lacks shading to cool waters, does not provide significant material inputs because of maintenance	Frequent inputs of fertilizers and pesticides from heavily maintained lawn on banks. Available resources limit support of large oganisms, mostly limited to detritis gleaners and filter feeders	None present	Low
Area 15	Plant community limited to streambanks	Frequent inputs of fertilizers and pesticides from heavily maintained lawn on banks. Available resources limit support of large oganisms, mostly limited to detritis gleaners and filter feeders	None present	Low

* Wetland functions follow "Wetland Functions and Values" on the U.S. Army Corps of Engineers website at http://www.usace.army.mil/CECW/Documents/cecwo/reg/wet_f_v.pdf

** Area 5 was found non-jurisdictional by a U.S. Army Corps of Engineers jurisdictional determination in 1999 (USACE File Number 199800058)