APPENDIX F-4: HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

HTRW

UPDATE MEMORANDUM
HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) EVALUATION SUPPLEMENT NO. 2 TO THE 1982 YAZOO AREA PUMP PORJECT FINAL ENVIRONMENTAL IMPACT STATEMENT

Background:

In October 2007 the Yazoo Backwater Area Reformulation Main Report and the Final Supplement No. 1 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement (FEIS) were completed (https://www.mvk.usace.army.mil/missions/programs-and-project-management/project-management/yazoo-backwater-report/). No Record of Decision (ROD) was signed due to the U.S. Environmental Protection Agency (EPA) vetoing the 2007 Final Supplement No. 1 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement (2007 FSEIS) in August 2008 due to "adverse impacts on wetlands and their associated fisheries and wildlife resources are unacceptable" citing Section 404(c) of the Clean Water Act.

Currently, the Yazoo Study Area has experienced flooding in nine out of the last ten years. In 2019 the Yazoo Study Area experienced record flooding when over 550,000 acres were inundated for over six months. The combination of more frequent and significant flooding, substantial environmental, economic, and safety concerns, and improved environmental analysis and documentation concerning the Yazoo Study Area prompted the initiation of this supplement to the 2007 FSEIS. This hazardous, toxic, and radioactive waste (HTRW) evaluation will serve as an update to the 2007 FSEIS, pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended.

Methodology:

The purpose of a Phase I Environmental Site Assessment (ESA) is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e., *Recognized Environmental Conditions* [RECs]) within the scope of the EPAs Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. The 2002 Brownfields Amendments to the CERCLA require EPA to promulgate regulations establishing standards and practices for conducting "all appropriate inquiries". "All appropriate inquiries" is a process of evaluating a property's environmental conditions and assessing potential liability for any contamination. "All appropriate inquiries" must be conducted to obtain certain protections from liability under the federal Superfund Law (i.e., CERCLA). As directed by the EPA, the results of an "all appropriate inquiries" investigation must be documented in a report. The EPA requires no specific format, length, or structure of the written report. However, the EPA recommends utilizing the American Society for Testing and Materials E 1527-13 standard as it is consistent with the requirements and provisions in the "all appropriate inquiries" rule.

An abridged Phase I ESA was conducted to assess the potential for HTRW materials within the proposed project footprints for each of the proposed structural features included in the supplement to the 2007 FSEIS and the results of each are presented in an Update Memorandum. The abridged Phase I ESA includes the following tasks: 1) the review of HTRW Phase I Environmental Database Corridor Reports and state and federal databases (e.g., Resource Conservation and Recovery Act Information (RCRA), Toxic Release Inventory (TRI), Superfund Enterprise Management System, Assessment, Cleanup and Redevelopment Exchange System, National Pollutant Discharge Elimination System (NPDES) and state databases on underground storage tanks and hazardous waste programs, etc.) to identify RECs, and 2) site reconnaissance to determine if RECs are within the work item right-of-way (ROW). When the final supplement to the 2007 FSEIS is completed, Record of Decision (ROD) is signed, and funding allocated, then a final full Phase I ESA would be executed on the project feature prior to construction.

Structural Features Description:

The project area contains 35 structural features located in Yazoo Basin of Mississippi. This includes the construction of a large pump station capable of providing flood relief to the interior of the Yazoo Backwater Basin when the Mississippi River is experiencing high stages. The project also includes the construction of a 34 supplemental low flow groundwater well sites capable of supplementing flow to the headwaters of the following six watersheds (HUC 10): Granicus Bayou, Black Bayou, Rolling Fork Creek - Upper Deer Creek, Snake Creek - Bogue Phalia, Hushpuckena River and Harris Bayou – Big Sunflower River. These watersheds are found within the larger Big Sunflower and Steele Bayou Basins (HUC 8) during environmentally low flow periods.

Yazoo Backwater Pump Station

The largest structural feature of the project includes the construction of a pump station consisting of 12 pumps capable of delivering a maximum total capacity of 14,000 cubic feet per second (cfs). The pump station shall be located approximately 2.25 miles northeast of the intersection of Highway 465 and Highway 61, between the Yazoo Backwater levee and Yazoo River near Deer Creek in Mississippi. Construction of this structural feature shall include the pump station, inlet channel, outlet channel and a new levee associated with the pump station. This feature will also require the removal of part of the existing levee for construction of the inlet channel and subsequent construction of a bridge over the inlet channel to connect the existing levee. The pump station ROW will be approximately 211.76 acres. The pump station will also require the construction of enlarged access road and utility installations from Highway 61. These two features shall subsequently be referred to as pump station access road. The ROW for the access road and subsequent levee widening will be approximately 25.07 acres. Map 1 shows the location of the proposed pump station and adjacent features.

In addition, the pump station will require the excavation of borrow material from the pre-load pump site and coffer dams utilized for an earlier design of the aforementioned pump station. The proposed borrow area is located north of Highway 465 and north of the Yazoo Backwater Levee, approximately 8 miles southwest of the pump station, and approximately 0.5 miles northwest of

the Steele Bayou water control structure. The borrow area ROW is approximately 35.92 acres. An access road will be constructed to access the borrow area from Highway 465. From Highway 465, approximately 0.1 miles of site work will be required in order to construct an access road to tie into an existing coffer dam. The access road will be constructed on the coffer dam and continue for approximately 0.25 miles and intersect with the existing Yazoo Backwater Levee road. The access road will then continue west along the levee road for approximately 0.2 miles. From the levee road, the access road construction will turn north for approximately 0.15 miles to the borrow area. The borrow area access road ROW is approximately 9.74 acres. Map 2 shows the location of the proposed borrow area and adjacent features.

Supplemental Low Flow Groundwater Wells

The project also includes the construction and operation of 34 independent supplemental low flow groundwater wells sites strategically spaced in close proximity to the Mississippi River levee and along headwater streams of the Big Sunflower and Steele Bayou Basins. These well locations are upstream of the backwater area in the counties of Washington, Bolivar, and Coahoma. Each well will mimic a common design capable of delivering a maximum of 5.0 cfs during low flow periods. The pump for each well will be situated on the top bank of headwater stream with a pipe discharging water onto a splash pad which will then flow down a constructed re-aeration trough to the channel. A negligible quantity of material will be moved for construction of each well site. Each well site will be complemented with riprap for stabilization and an access road will be constructed for each site. The total right of way for the 34 well sites will be approximately 30.9 acres and the right of way for the access roads to the well sites will be approximately 12.19 acres. Map 3 shows the location of the well sites within the Steele Bayou and Big Sunflower Basins.

Task 1 Results:

Yazoo Backwater Pump Station

CEMVK-EC-H personnel Mr. Brian S. Johnson conducted a review of the environmental records for the areas surrounding the pump station and the borrow area with access road on 9-13 August 2020. The coordinates of the ROW perimeter for pump station and the borrow area were uploaded into the online NEPAssist Tool administered by the EPA. A one mile buffer was generated with the tool around each item, followed by a NEPAssist Report. The report identified facilities within the buffer that may be listed on the federal TRI, NPDES, RCRA or Air Emissions databases. The coordinates of the ROW perimeter for the pump station and the borrow area were also uploaded into the Underground Storage Tank (UST) online Groundwater Remediation & Assessment Division (GARD) Tool administered by the Mississippi Department of Environmental Quality (MDEQ). A one half mile buffer was projected around the pump station, the borrow area, and applicable access roads for each. The GARD Tool identified any UST's within the buffer area.

One facility, International Paper Company – Vicksburg Mill, was identified on the NEPAssist databases for TRI, NPDES, RCRA and Air Emissions. This facility is partially located within the one mile buffer of the pump station. The paper mill reported releases of acetaldehyde,

acetone, ammonia, barium compounds, benzo (G, H, I) perylene, catechol, certain glycol ethers, chlorine, chloromethane, cresol, dioxin and dioxin-like compounds, ethylene glycol, formaldehyde, hydrochloric acid, hydrogen sulfide, lead compounds, manganese compounds, mercury, methyl ethyl ketone, phenol, phosphoric acid, polycyclic aromatic compounds, sodium hydroxide, sulfuric acid, xylene and zinc compounds for the calendar years ranging from 1987 to 2019. The reported releases came in the form of fugitive or non-point air emissions, stack or point air emissions or discharges to receiving streams or water bodies. No facilities within the one half mile buffer of the pump station and pump station access road were identified on the GARD database for UST's.

No facilities within the one mile buffer of the borrow area and borrow area access road were identified on the NEPAssist tool databases for TRI, NPDES, RCRA or Air Emissions. No facilities within the one half mile buffer of the borrow area and borrow area access road were identified on the GARD database for UST's.

Supplemental Low Flow Groundwater Wells

CEMVK-EC-H personnel Mr. Brian S. Johnson conducted a review of the environmental records for the areas surrounding the supplemental low flow groundwater well sites on 9-13 August 2020. The coordinates for each of the 34 supplemental low flow groundwater wells were uploaded into the online NEPAssist Tool administered by the EPA. A one mile buffer was generated with the tool around each supplemental low flow groundwater well location, followed by a NEPAssist Report. The report identified facilities within the buffer that may be listed on the federal TRI, NPDES, RCRA or Air Emissions databases. The coordinates for the 34 well sites were also uploaded into the UST online GARD Tool administered by the MDEQ. A one half mile buffer was projected around each well location. The GARD Tool identified any UST's within the buffer area. The facilities identified within the buffer areas of each well are listed in Table 1.

Two facilities were identified on the NEPAssist database for TRI as being located within the one mile buffer of well site, YBP-BB-HB-35 (Horseshoe Bayou). Caldwell Culvert Co reported a fugitive or non-point air emissions release of Toluene for the 1995 calendar year. Hagar Cos Greenville reported releases of chromium compounds, sulfuric acid, hydrochloric acid, toluene, cyanide compounds, methyl isobutyl ketone, chlorine, acetone, and sodium hydroxide for the calendar years ranging from 1987 to 1997. The reported releases came in the form of fugitive or non-point air emissions, stack or point air emissions, discharges to receiving streams or water bodies (via storm water runoff) or discharges to publicly owned treatment works (POTWs).

Eight facilities within the one mile buffer of seven well sites were identified for maintaining NPDES permits on the NEPAssist database. The well sites and permitted facilities were: YBP-BP-BP-16 (Bogue Phalia) - Gunnison POTW, YBP-BP-LB-24 (Laban Bayou) - Beulah POTW, YBP-DC-BB-28 (Browns Bayou) - Benoit POTW, YBP-MC-MC-33b (Main Canal) (2) - Marine Gears Inc, and United Parcel Service, YBP-BB-HB-34 (Horseshoe Bayou) - Metcalfe POTW, YBP-BB-HB-35 (Horseshoe Bayou) - Contech Engineered Solutions, and YBP-MC-No9-43 (Ditch No9) - Wayside Community Development.

Four facilities were identified on the NEPAssist database for RCRA within the one mile buffer of four well sites. The well sites were: YBP-DC-WB-32 (Williams Bayou) - Novartis Crop Protection, YBP-BB-HB-34 (Horseshoe Bayou) - CVS Pharmacy #5808, YBP-BB-HB-35 (Horseshoe Bayou) - Hagar Hinge Co and, YBP-MC-No6-44 (Ditch No6) - Union Carbide Agricultural Products.

Two facilities were identified on the NEPAssist database for Air Emissions within the one mile buffer of three well sites. The well sites were: YBP-DC-DC-29 (Deer Creek) - Monsanto AG Products LLC, YBP-DC-DC-30 (Deer Creek) - Monsanto AG Products LLC, and YBP-BB-HB-35 (Horseshoe Bayou) - Hagar Hinge Co.

Eight facilities were identified on the GARD database for UST's within the one half mile buffer of five well sites. The well sites were: YBP-HB-HB-4 (Harris Bayou) - Hoff Grocery, YBP-HP-HP-7 (Hushpuckena River) (2) – Rico's Grocery, Sportsman Grocery, YBP-DC-DC-29 (Deer Creek) - Scott Airport, YBP-DC-WB-32 (Williams Bayou) - Winterville Cash Store, and YBP-MC-MC-33b (Main Canal) (3) - Lee F Antrim, M & M Grocery, Oakes Warehouse & Storage.

None of the facilities identified in the federal and state environmental databases are believed to pose a significant risk to the construction of the structural features of the Yazoo Area Pump Project which include the pump station and access road, the borrow area and access road and the well sites.

A thorough review of the Corridor Reports indicates there are no RECs within the ROW of the structural project features. When the final supplement to the 2007 FSEIS I is completed, ROD is signed, and funding allocated, then a final full Phase I ESA would be executed on the project feature prior to construction.

Task 2 Results:

CEMVK-EC-H personnel Mr. Brian S. Johnson made a site visit to the ROWs of the various structural features on 14, 17, and 28-30 July 2020. The ROWs for the borrow area and access road, the pump station and access road and the well sites were inspected for the presence of pipes, containers, tanks or drums, ponds or lagoons, car bodies, tires, refrigerators, trash dumps, electrical equipment, oil drilling equipment, gas or oil wells, discoloration of vegetation or water sheens, discoloration of soils, out-of-place dirt mounds or depressions in the landscape, evidence of fire, stressed soils with lack of vegetation, discoloration of vegetation, animal remains, unusual animal behavior, biota indicative of a disturbed environment, and odors indicative of poor water quality or chemical presence.

<u>Yazoo Backwater Pump Station</u>

The proposed footprint of the pump station which includes the inlet and outlet channels, the surrounding ROW, the access road to the pump station from Highway 61 and the utility ROW limits were visited on 17 July 2020. The land use for the described areas varied from cattle farming to row crop agriculture to forested woodlands. Tractors, agricultural implements, catch

pens, fencing, feed and watering troughs for cattle were observed within the footprint of the pump station ROW. Several used tires were observed along the left descending bank of the auxiliary channel at the proposed location of the pump station inlet channel (Figures 1-2). Remnants of an old barn were observed in the wooded area of the southeast corner of the pump station ROW (Figures 3-5). Old farm implements were observed scattered in the wooded area around the partially dilapidated site (Figure 6). A large cylindrical tank and a rusted truck frame were also observed at the old barn site (Figures 7-8). The tank appeared to be out of use. Random debris was observed along the southern bank of the old Deer Creek channel which leads to the Yazoo River (Figures 9-10). Pictures were taken of areas within the Pump Station ROW which represent the typical landscape of the proposed work area (Figures 11-14).

The borrow area along with the previously constructed coffer dams and the proposed access roads located along the Yazoo Backwater Levee south of the Steele Bayou water control structure were visited on 14 July 2020. The area appeared to be utilized for cattle farming and recreational deer hunting. Tractors, agricultural implements, catch pens, and fencing were observed throughout the site. One irregularly shaped object which contained five partially filled hydraulic oil buckets (5-gallon) was observed on the northeast quadrant of the borrow area (Figures 15-19). Figure 20 shows the typical landscape of the proposed borrow area.

Supplemental Low Flow Groundwater Wells

The land use around the 34 supplemental low flow groundwater well sites was predominantly row crop agriculture. The proposed well site labeled, YBP-BB-HB-34 (Horseshoe Bayou), is in close proximity to an existing underground gas pipeline crossing (Figure 21).

None of the aforementioned indicators of HTRW were found during the ROW site visits to any of the other structural features. Figures 22-54 show the typical landscape for each of the remaining 33 well sites.

Recommendations:

It is recommended that the following actions be initiated at the start of the Yazoo Area Pump Project.

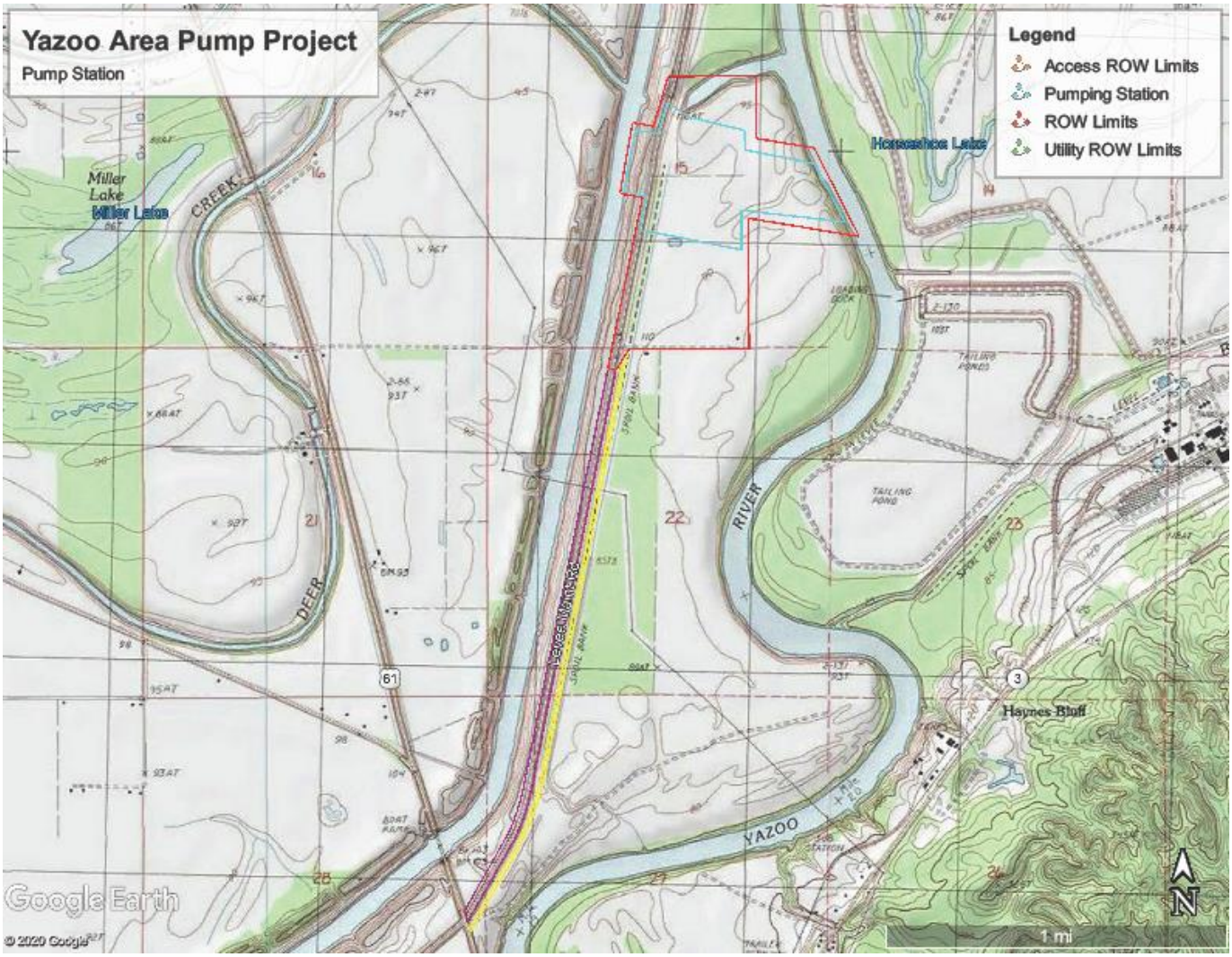
The irregularly shaped object containing used 5-gallon buckets of oil in the northeast quadrant of the borrow area appeared to have floated in to the observed location from the Steele Bayou channel during a high water event. No signs of petroleum products were observed in the surrounding vegetation or on the ground. It should be noted that no undergrowth was present in the area due to recent flooding. It is recommended that the irregularly shaped object and 5-gallon buckets be removed from the borrow area and disposed of at an approved disposal facility before construction of the borrow area would commence.

It is recommended that the large quantity of used tires found along the left descending bank of the auxiliary channel be removed and disposed of at an approved disposal facility before construction of the inlet channel would commence. It is also recommended that the wooded area delineated in the southeast corner of the pump station ROW (approximately 2 acres) be excised

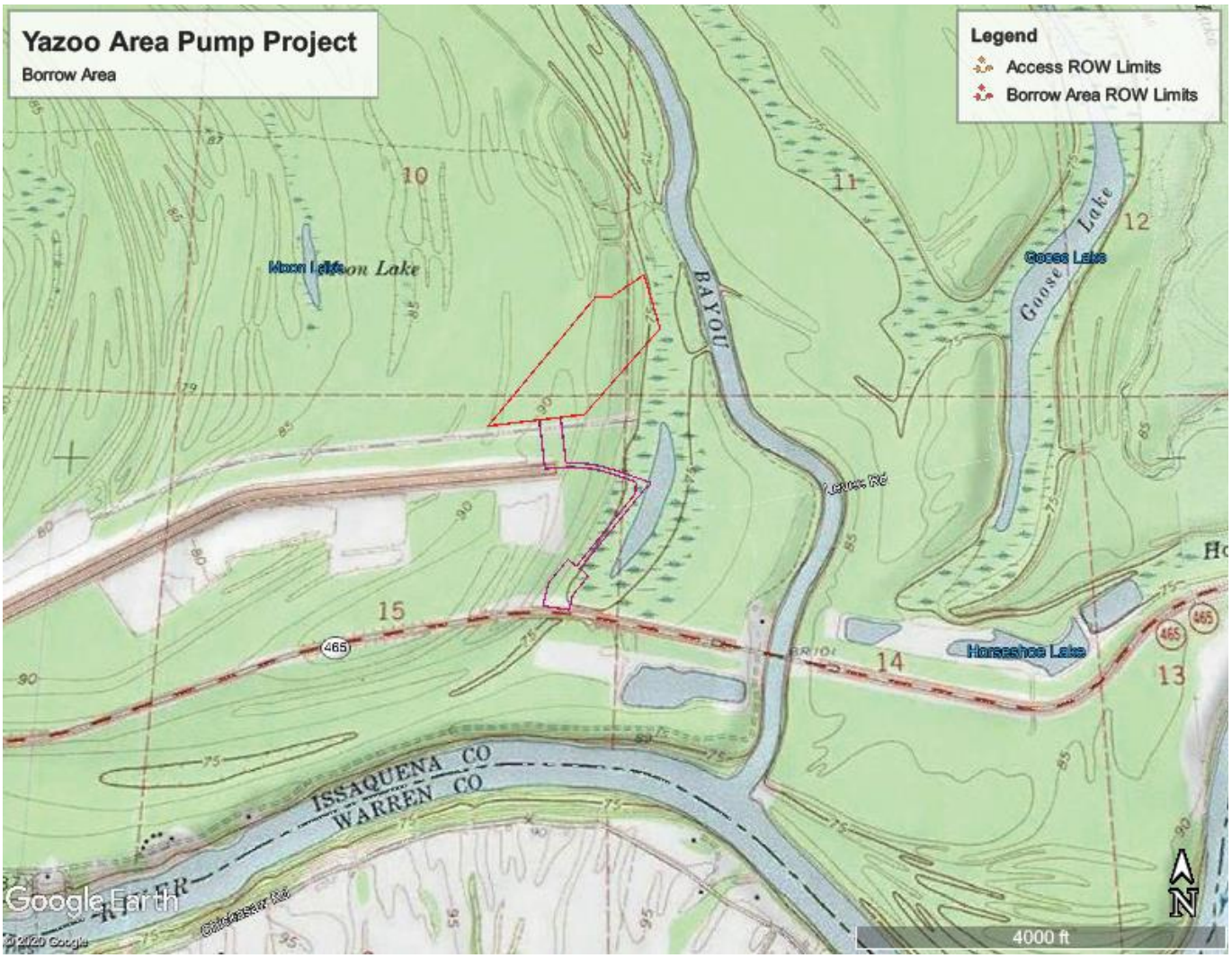
from the ROW limits of construction in an effort to avoid the dilapidated barn site where the large cylindrical tank, rusted truck frame, and rusted farm implements were observed.

Due to the presence of a gas pipeline crossing at the well site labeled YBP-BB-HB-34 (Horseshoe Bayou), it is recommended that the site footprint be moved toward the east a few hundred feet along top bank in the agricultural field to avoid impacts to the existing utility.

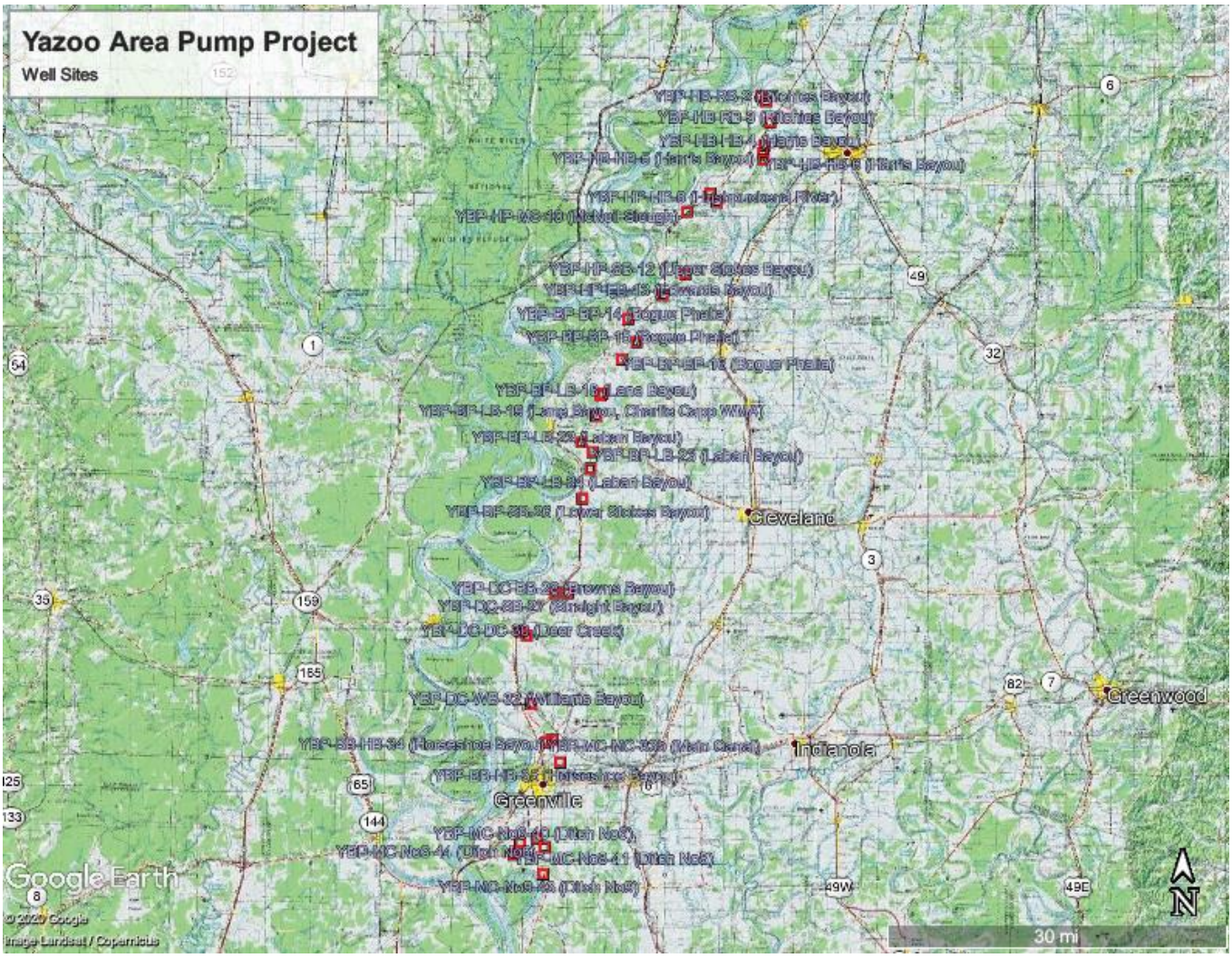
Based on the results of Task 1 and Task 2 as well as the recommendations described above, the probability of encountering HTRW during construction of the two major structural features for the Yazoo Area Backwater Project is low. As previously stated, when the final supplement to the 2007 FSEIS I is completed, ROD is signed, and funding allocated, then a final full Phase I ESA would be executed on the project feature prior to construction. Given a Phase I ESA is only valid for a 6 month period and that there are currently no detailed designs for these structural features, the most appropriate timing for a full Phase I ESA would be after funding has been allocated and detailed designs have been completed.



Map 1. Location of the Pump Station which includes the Pump Station footprint, the Pump Station ROW limits, the Access Road ROW limits and the Utility ROW limits.



Map 2. Location of the Borrow Area which includes the Borrow Area ROW and the Access Road ROW limits.



Map 3. Location of the Well Sites within the Steele Bayou and Big Sunflower Basins.

Table 1. Facilities listed on EPA's NEPAssist Tool database and MDEQ's GARB database located within the prescribed buffer area around the 34 supplemental low flow well sites.

Well Site	TRI	NPDES	RCRA	Air Emissions	UST	Facility Name
YBP-HB-RB-1 (Ritchies Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HB-RB-2 (Ritchies Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HB-RB-3 (Ritchies Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HB-HB-4 (Harris Bayou)	N/A	N/A	N/A	N/A	X	UST – Hoff Grocery
YBP-HB-HB-5 (Harris Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HB-HB-6 (Harris Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HP-HP-7 (Hushpuckena River)	N/A	N/A	N/A	N/A	X	UST (2) – Rico's Grocery, Sportsman Grocery
YBP-HP-HP-8 (Hushpuckena River)	N/A	N/A	N/A	N/A	N/A	
YBP-HP-MS-10 (McNeil Slough)	N/A	N/A	N/A	N/A	N/A	
YBP-HP-SB-12 (Upper Stokes Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-HP-EB-13 (Edwards Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-BP-14 (Bogue Phalia)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-BP-15 (Bogue Phalia)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-BP-16 (Bogue Phalia)	N/A	X	N/A	N/A	N/A	NPDES - Gunnison POTW
YBP-BP-LB-18 (Lane Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-LB-19 (Lane Bayou, Charlie Capp WMA)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-LB-20 (Lane Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-LB-22 (Laban Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-BP-LB-23 (Laban Bayou)	N/A	N/A	N/A	N/A	N/A	

Table 1 (continued) Facilities listed on EPA's NEPAssist Tool database and MDEQ's GARB database located within the prescribed buffer area around the 34 supplemental low flow groundwater well sites.

Well Site	TRI	NPDES	RCRA	Air Emissions	UST	Facility Name
YBP-BP-LB-24 (Laban Bayou)	N/A	X	N/A	N/A	N/A	NPDES - Beulah POTW
YBP-BP-SB-26 (Lower Stokes Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-DC-SB-27 (Straight Bayou)	N/A	N/A	N/A	N/A	N/A	
YBP-DC-BB-28 (Browns Bayou)	N/A	X	N/A	N/A	N/A	NPDES - Benoit POTW
YBP-DC-DC-29 (Deer Creek)	N/A	N/A	N/A	X	X	Air Emissions - Monsanto AG Products LLC; UST – Scott Airport
YBP-DC-DC-30 (Deer Creek)	N/A	N/A	N/A	X	N/A	Air Emissions - Monsanto AG Products LLC
YBP-DC-WB-32 (Williams Bayou)	N/A	N/A	X	N/A	X	RCRA - Novartis Crop Protection; UST – Winterville Cash Store
YBP-MC-MC-33b (Main Canal)	N/A	X	N/A	N/A	X	NPDES (2) – Marine Gears Inc, United Parcel Service; UST (3) – Lee F Antrim, M & M Grocery, Oakes Warehouse & Storage
YBP-BB-HB-34 (Horseshoe Bayou)	N/A	X	X	N/A	N/A	NPDES – Metcalfe POTW; RCRA – CVS Pharmacy #5808
YBP-BB-HB-35 (Horseshoe Bayou)	X	X	X	X	N/A	TRI (2) – Caldwell Culvert Co, Hager Cos Greenville; NPDES – Contech Engineered Solutions; RCRA – Hagar Hinge Co; Air Emissions – Hagar Hinge Co
YBP-MC-No8-39 (Ditch No8)	N/A	N/A	N/A	N/A	N/A	
YBP-MC-No6-40 (Ditch No6)	N/A	N/A	N/A	N/A	N/A	
YBP-MC-No8-41 (Ditch No8)	N/A	N/A	N/A	N/A	N/A	
YBP-MC-No9-43 (Ditch No9)	N/A	X	N/A	N/A	N/A	NPDES - Wayside Community Development
YBP-MC-No6-44 (Ditch No6)	N/A	N/A	X	N/A	N/A	RCRA - Union Carbide Agricultural Products

Figure 1. Used tires observed along the bank of the auxiliary channel at the proposed location of the pump station inlet channel.

Figure 2. Used tires observed along the bank of the auxiliary channel at the proposed location of the pump station inlet channel.

Figure 3. Old structure (collapsed) observed in the southeast corner of the pump station ROW.

Figure 4. Old structure (collapsed) observed in the southeast corner of the pump station ROW.

Figure 5. Existing shed observed in the southeast corner of the pump station ROW.

Figure 6. Tractor implement observed in wooded area in the southeast corner of the pump station ROW.

Figure 7. Large cylindrical tank observed adjacent to existing shed in the southeast corner of the pump station ROW.

Figure 8. Old truck observed in wooded area in the southeast corner of the pump station ROW.

Figure 9. Rusted debris observed along the southern bank of the old Deer Creek channel which leads to the Yazoo River.

Figure 10. Debris observed along the southern bank of the old Deer Creek channel which leads to the Yazoo River.

Figure 11. Water trough for cattle farming observed at the proposed location of the pump station inlet channel.

Figure 12. Typical picture of the right descending bank of the Yazoo River located within the footprint of the pump station ROW.

Figure 13. Typical picture of agricultural field located within the footprint of the pump station ROW.

Figure 14. Typical picture of agricultural field along the eastern toe of the Yazoo Backwater Levee facing northeast from Highway 61 located within the footprint of the pump station utility access.

Figure 15. Irregularly shaped object containing 5-gallon oil buckets observed in the northeast quadrant of the borrow area.

Figure 16. Irregularly shaped object containing 5-gallon oil buckets observed in the northeast quadrant of the borrow area.

Figure 17. Irregularly shaped object containing 5-gallon oil buckets observed in the northeast quadrant of the borrow area.

Figure 18. Irregularly shaped object containing 5-gallon oil buckets observed in the northeast quadrant of the borrow area.

Figure 19. Irregularly shaped object containing 5-gallon oil buckets observed in the northeast quadrant of the borrow area.

Figure 20. Typical picture of borrow area facing southwest.

Figure 21. South facing picture from agricultural field of typical area showing well site, YBP-BB-HB-34 (Horseshoe Bayou) as well as signage for gas pipeline crossing.

Figure 22. East facing picture from Tate Road of typical area showing well site, YBP-MC-No6-44 (Ditch No6).

Figure 23. East facing picture from Highway 1 of typical area showing well site, YBP-MC-No9-43 (Ditch No9).

Figure 24. South facing picture from Highway 454 of typical area showing well site, YBP-MC-No8-41 (Ditch No8).

Figure 25. North facing picture from access road of typical area showing well site, YBP-MC-No6-40 (Ditch No6).

Figure 26. Northeast facing picture from southwest corner of agricultural field of typical area showing well site, YBP-MC-No8-39 (Ditch No8).

Figure 27. Southwest facing picture from Horseshoe Bayou Road of typical area showing well site, YBP-BB-HB-35 (Horseshoe Bayou).

Figure 28. South facing picture from Metcalf Road of typical area showing well site, YBP-MC-MC-33b (Main Canal).

Figure 29. South facing picture from Hwy 384 of typical area showing well site, YBP-DC-WB-32 (Williams Bayou).

Figure 30. East facing picture from Pine Road of typical area showing well site, YBP-DC-DC-30 (Deer Creek).

Figure 31. South facing picture from western corner of agricultural field of typical area showing well site, YBP-DC-DC-29 (Deer Creek).

Figure 32. Southeast facing picture from Burrus Road of typical area showing well site, YBP-DC-BB-28 (Browns Bayou).

Figure 33. Southeast facing picture from northern corner of agricultural field of typical area showing well site, YBP-DC-SB-27 (Straight Bayou).

Figure 34. North facing picture from western edge of cemetery of typical area showing well site, YBP-BP-SB-26 (Lower Stokes Bayou).

Figure 35. North facing picture from Beulah Road of typical area showing well site, YBP-BP-LB-24 (Laban Bayou).

Figure 36. South facing picture from northwest corner of agricultural field of typical area showing well site, YBP-BP-LB-23 (Laban Bayou).

Figure 37. North facing picture toward Laban Bayou of typical area showing well site, YBP-BP-LB-22 (Laban Bayou).

Figure 38. Northwest facing picture from Gibson Swamp Road of typical area showing well site, YBP-BP-LB-20 (Lane Bayou).

Figure 39. Southeast facing picture from gravel road of typical area showing well site, YBP-BP-LB-19 (Lane Bayou, Charlie Capp WMA).

Figure 40. Northwest facing picture from Gibson Swamp Road of typical area showing well site, YBP-BP-LB-18 (Lane Bayou).

Figure 41. Northeast facing picture towards Bogue Phalia River of typical area showing well site, YBP-BP-BP-16 (Bogue Phalia).

Figure 42. West facing picture from Stafford Road of typical area showing well site, YBP-BP-BP-15 (Bogue Phalia).

Figure 43. Northwest facing picture of typical area showing well site, YBP-BP-BP-14 (Bogue Phalia).

Figure 44. South facing picture from Sugar Hill Road of typical area showing well site, YBP-HP-EB-13 (Edwards Bayou).

Figure 45. East facing picture towards Stokes Bayou of typical area showing well site, YBP-HP-SB-12 (Upper Stokes Bayou).

Figure 46. Northeast facing picture from Alligator Hillhouse Road of typical area showing well site, YBP-HP-MS-10 (McNeil Slough).

Figure 47. Southeast facing picture from Long Road of typical area showing well site, YBP-HP-HP-8 (Hushpuckena River).

Figure 48. Southeast facing picture from Hwy 1 of typical area showing well site, YBP-HP-HP-7 (Hushpuckena River).

Figure 49. West facing picture from Bobo Sherard Road of typical area showing well site, YBP-HB-HB-6 (Harris Bayou).

Figure 50. South facing picture from Sherard Road of typical area showing well site, YBP-HB-HB-5 (Harris Bayou).

Figure 51. North facing picture from Highway 322 of typical area showing well site, YBP-HB-HB-4 (Harris Bayou).

Figure 52. Northwest facing picture from Highway 1 of typical area showing well site, YBP-HB-RB-3 (Ritchies Bayou).

Figure 53. Northwest facing picture from Farrell Road of typical area showing well site, YBP-HB-RB-2 (Ritchies Bayou).

Figure 54. West facing picture from McWilliams Road of typical area showing well site, YBP-HB-RB-1 (Ritchies Bayou).