

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Kelly Hammack
Facility Operations Manager
W.E. Sears Youth Center
301 W. High Street
Jefferson City, MO 65102

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

As the Department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the Department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the Department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

February 27, 2019
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

February 26, 2021
Expiration Date


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Conversion of an existing three cell discharging lagoon to a no-discharge land application system. Existing lagoon will be replaced with a single cell earthen lagoon basin with a working storage capacity of approximately 2,665,000 gallons. All sludge from existing lagoon will be hauled off-site and disposed in accordance with a sludge disposal plan approved by the Southeast Regional Office. Addition of a lift station with two 35 HP Flyght (or equivalent) effluent pumps each with a minimum capacity of 437.3 gpm at a TDH of 132 feet, approximately 4078 lineal feet of 6-inch pvc force main; a land application site with 26 fixed sprinkler heads over approximately 11.15 acres. Together with all the necessary appurtenances to make a complete and usable wastewater system to serve a school and youth center and effectively treat, hold and land apply a wastewater flow of 17,800 gallons per day with no-discharge to waters of the state. The site is located in the SW 1/4, of the SW 1/2, of Section 34, T26N, R05E, Butler County.

Approximate locations:

Lagoon basin emergency discharge point UTM, X=721774, Y=4082035

Application field UTM, X=721600, Y=4081950

Vegetation: forest

Dry weather average annual flow: 17,800 GPD

Wettest 1 in 10 year effluent flow from precipitation: 1760 GPD

Design spray irrigation: up to 1 inch/day, up to 3 inches/week, up to 24 inches/year (wettest 1 in 10)

Application area required for 24 inches/year: 10.95 acres.

Application area available to fixed sprinklers: 11.15 acres.

Sludge will be stored in the treatment lagoon and removed when necessary.

Storage basin and application site will be fenced and fitted with warning signs.

A closure/sludge disposal plan will need to be submitted to the Southeast Regional Office for review and approval prior to closure activities.

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this

chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The Department is not required to make a “finding of affordability”. Per Section 644.145.3, a “finding of affordability” is a statement as to whether or not an individual or household would be required to make unreasonable sacrifices in order to make the projected monthly payments for sewer services. While this facility is a publically-owned treatment works, the permittee accomplishes capital improvements through an established budget for operation and maintenance and not through the issuance of utility bills to customers for sewer services. Because of this, the Department cannot determine the “affordability” of the new permit requirements.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Smith & Co., Engineers on January 4, 2019.
3. The Department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).
4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the Department’s Southeast Regional Office per 10 CSR 20-7.015(9)(G).
5. The wastewater treatment facility shall be located above the twenty-five (25)-year flood level.
6. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the one hundred- (100-) year flood elevation per 10 CSR 20-8.140(2)(B). The minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300') per 10 CSR 20-8.140(2)(C)1.

7. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the Department's ePermitting system available online at dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
8. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
9. In accordance with 10 CSR 20-6.010(12), a full closure plan shall be submitted to the Department's Southeast Regional Office for review and approval of the permitted wastewater treatment system being replaced. The closure plan must address the removal and disposal of all sludge. The closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO- 0031496. Closure shall not commence until the submitted closure plan is approved by the Department.
10. Upon completion of construction:
 - A. Submit an electronic copy of the as built's if the project was not constructed in accordance with previously submitted plans and specifications; and
 - B. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Existing lagoon does not consistently meet ammonia limitations. Owner elected to convert system to a no-discharge spray irrigation system.

2. FACILITY DESCRIPTION

The W.E. Sears Youth Center treatment facility is located at 9400 Sears Lane, Poplar Bluff, in Butler County, Missouri. The current facility is a 3 cell lagoon with chlorination and dechlorination, has a dry weather design average flow of 17,800 gpd, with a hydraulic population equivalent of 178.

The proposed treatment facility will have a reconstructed single lagoon cell with a surface area of approximately 51,500 square feet with an effective storage volume of approximately 2,665,000 gallons. Land application to occur over approximately 11.15 acres at a maximum rate of 24 inches/year. Facility will have no discharge.

3. COMPLIANCE PARAMETERS

The proposed wastewater treatment plant will be a complete no-discharge treatment facility. All liquid waste will be treated and disposed on-site. A Missouri State Operating Permit is required to be maintained. Monitoring of the facility will be required along with keeping records of land application and maintenance activities. There are currently no sampling requirements of the land applied water.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The area that will take on precipitation to the new storage basin is considered to be 51,516 sq. ft. The wettest 1-in-10 year rainfall is estimated to be 60 inches and average evaporation is estimated as 40 inches for a net precipitation of 20 inches. This additional water (642,318 gallons per year or 1760 gpd) needs to be accounted for land application purposes. The dry weather design flow is 17,800 gpd; the wet-weather design flow is considered to be 19,560 gpd.

The existing three cell lagoon will have all the sludge removed and disposed off-site. Details of the sludge disposal have not been provided and need to be approved by the Southeast Regional Office. The new earthen lagoon basin will be sealed with bentonite at a rate of 8 pounds per sq. ft. (4 lbs./sq. ft. per 6-inch lift). The basin will have a bottom rectangular dimension of approx. 106 ft. X 272 ft. and will have 2:1 sloping walls; the depth from the top of the berms to the lagoon floor will be 13 feet. There will be an emergency spillway one foot below the berm top. The storage volume is between the two foot depth and the 11 foot depth. The one foot between the maximum storage level and the spillway is reserved for the 25 year, 24 hour storm event. The storage volume is estimated to be approx. 2,665,000 gallons. The storage volume must hold a minimum of 75 days of flow and the estimated precipitation during the same period during the wettest 1 in 10 year. Precipitation for the wettest 90 days is estimated at 18 inches. Allowing 2 feet for precipitation and using only the lower 7 feet results in a storage volume of approximately 1,982,000 gallons which is sufficient for over 111 days of storage of the design flow.

The water from the holding basin will be land applied to forest area with an approximate available area of 15 acres. 26 spray irrigation sprinkler heads with varying spray patterns will be installed to cover approximately 11.15 acres. At the wet weather design flow the minimum

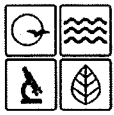
area required for a maximum of 24 inches of applied wastewater per year is 10.95 acres. Water will be irrigated by a lift station with two 35 HP Flyght (or equivalent) effluent pumps, 3 phase, 460 volt, each with a minimum capacity of 437.3 gpm at a TDH of 132 feet; pumped through approximately 4078 feet of 6 inch pvc force main, 26 fixed sprinkler heads with varying spray patterns, Rainbird Model 80E, with 3/8-inch nozzle.

The pump and application rate is intended to be approximately 437 gpm. Maximum application rates are 1 inch per day; and 3 inches per week. At full design flow, yearly application would take approximately 272 hours (34 – 8 hr. days).

5. OPERATING PERMIT

Operating permit MO-0031496 will require a modification to reflect the construction activities. The modified W.E. Sears Youth Center WWTF, MO-0031496, was successfully public noticed from January 25, 2019 to February 25, 2019 with no comments received. At completion of construction, submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(N) and request the operating permit modification be issued.

Andrew Appelbaum, P.E.
Engineering Section
andy.appelbaum@dnr.mo.gov



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT
WASTEWATER FACILITY**

RECEIVED

JUL 03 2018

Water Protection Program

FOR DEPARTMENT USE ONLY

APP NO.

CP NO.

FEE RECEIVED

\$1000.00

CHECK NO.

27247

DATE RECEIVED

7-3-18

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

- 1.1 Is this a Federal/State funded project? ☒ YES ☐ N/A Funding Agency: Office of Admin. Project #: H1610-01
- 1.2 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☐ NO ☒ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☐ YES ☒ NO
- 1.6 Is a copy of the appropriate plans* and specifications* included with this application?
☒ YES Denote which form is submitted: ☒ Hard copy ☐ Electronic copy (See instructions.) ☐ NO
- 1.7 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.8 Is a general operating permit applicable?
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☐ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☐ B ☐ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

W.E Sears Youth Center Wastewater System and Water System Upgrades

2.2 PROJECT DESCRIPTION

The proposed project consists of a retrofit of the existing facultative lagoon facility to meet new limits for ammonia.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge is retained within the lagoon

2.4 DESIGN INFORMATION

- A. Current population: 170; Design population: 178
- B. Actual Flow: 7,450 gpd; Design Average Flow: 17,800 gpd;
Actual Peak Daily Flow: 14,000 gpd; Design Maximum Daily Flow: 30,000 gpd;
Design Wet Weather Event: 14,000


2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? ☒ YES ☐ NO
- B. Is a process flow diagram attached? ☒ YES ☐ NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$ 1,269,000.00

3.0 WASTEWATER TREATMENT FACILITY				
NAME W.E. Sears Youth Center		TELEPHONE NUMBER WITH AREA CODE (573) 840-9280		EMAIL ADDRESS
ADDRESS (PHYSICAL) 9400 Sears Lane	CITY Poplar Bluff	STATE MO	ZIP CODE 63901	COUNTY USA
Wastewater Treatment Facility: Mo- 0031496 (Outfall 1 Of 1)				
3.1 Legal Description: ¼, SE ¼, SW ¼, Sec. 34 , T 26N , R 05E (Use additional pages if construction of more than one outfall is proposed.)				
3.2 UTM Coordinates Easting (X): 721759 Northing (Y): 4081972 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)				
3.3 Name of receiving streams: Tributary to Goose Creek				
4.0 PROJECT OWNER				
NAME State of Missouri Office of Administration FMDC		TELEPHONE NUMBER WITH AREA CODE (573) 526-0711		EMAIL ADDRESS Kelly.Hammack@oa.mo.gov
ADDRESS 301 W. High Street, Rm 730	CITY Jefferson City	STATE MO	ZIP CODE 65102	
5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.				
NAME State of Missouri Office of Administration FMDC		TELEPHONE NUMBER WITH AREA CODE (573) 840-9540		EMAIL ADDRESS
ADDRESS 301 W. High Street, Rm 730	CITY Jefferson City	STATE MO	ZIP CODE 65102	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A				
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.				
A. Is a copy of the certificate of convenience and necessity included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.				
A. Is a copy of the as-filed restrictions and covenants included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO				
6.0 ENGINEER				
ENGINEER NAME / COMPANY NAME Dominic Thompson / Smith & Co. Engineers		TELEPHONE NUMBER WITH AREA CODE (573) 785-9621		EMAIL ADDRESS domt@shsmithco.com
ADDRESS 901 Vine Street	CITY Poplar Bluff	STATE MO	ZIP CODE 63901	
7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.				
PROJECT OWNER SIGNATURE				
PRINTED NAME Kelly Hammack			DATE	
TITLE OR CORPORATE POSITION Facilities Operations Manager		TELEPHONE NUMBER WITH AREA CODE (573) 526-0711		EMAIL ADDRESS Kelly.Hammack@oa.mo.gov
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176				
END OF PART A. REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.				

3.0 WASTEWATER TREATMENT FACILITY					
NAME W.E. Sears Youth Center		TELEPHONE NUMBER WITH AREA CODE (573) 840-9280		EMAIL ADDRESS	
ADDRESS (PHYSICAL) 9400 Sears Lane		CITY Poplar Bluff	STATE MO	ZIP CODE 63901	COUNTY USA
Wastewater Treatment Facility: Mo-0031496 (Outfall 1 Of 1)					
3.1 Legal Description: $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34 , T 26N , R 05E (Use additional pages if construction of more than one outfall is proposed.)					
3.2 UTM Coordinates Easting (X): 721759 Northing (Y): 4081972 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)					
3.3 Name of receiving streams: Tributary to Goose Creek					
4.0 PROJECT OWNER					
NAME State of Missouri Office of Administration FMDC		TELEPHONE NUMBER WITH AREA CODE (573) 526-0711		EMAIL ADDRESS Kelly.Hammack@oa.mo.gov	
ADDRESS 301 W. High Street, Rm 730		CITY Jefferson City	STATE MO	ZIP CODE 65102	
5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.					
NAME State of Missouri Office of Administration FMDC		TELEPHONE NUMBER WITH AREA CODE (573) 840-9540		EMAIL ADDRESS	
ADDRESS 301 W. High Street, Rm 730		CITY Jefferson City	STATE MO	ZIP CODE 65102	
5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A					
5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.					
A. Is a copy of the certificate of convenience and necessity included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.					
A. Is a copy of the as-filed restrictions and covenants included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input type="checkbox"/> NO					
6.0 ENGINEER					
ENGINEER NAME / COMPANY NAME Dominic Thompson / Smith & Co. Engineers		TELEPHONE NUMBER WITH AREA CODE (573) 785-9621		EMAIL ADDRESS domt@shsmithco.com	
ADDRESS 901 Vine Street		CITY Poplar Bluff	STATE MO	ZIP CODE 63901	
7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility.					
PROJECT OWNER SIGNATURE 					
PRINTED NAME Kelly Hammack				DATE 6/27/2018	
TITLE OR CORPORATE POSITION Facilities Operations Manager		TELEPHONE NUMBER WITH AREA CODE (573) 526-0711		EMAIL ADDRESS Kelly.Hammack@oa.mo.gov	
Mail completed copy to: MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176					
END OF PART A					
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.					

PART B – LAND APPLICATION ONLY

(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☐ Domestic ☐ State/National Park ☐ Seasonal business
☒ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain)

8.2 Months when the business or enterprise will operate or generate wastewater:
☒ 12 months per year ☐ Part of the year (list months):

8.3 This system is designed for:
☒ No-discharge ☐ Subsurface
☐ Partial irrigation when feasible and discharge rest of time
☐ Irrigation during recreational season, April – October, and discharge during November – March
☐ Other (explain)

9.0 STORAGE BASINS

9.1 Number of storage basins: 1 (Use additional pages if greater than two basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen ☒ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

Basin #1: Length 324' Width 158.6' Depth 13' Freeboard 2' Depth 11' Safety _____ % Slope 50
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level 564 ft Minimum operating water level 555 ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: 2 ft Basin #2: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: 1.3' ft Basin #2: 1.3' ft

9.7 Total design sludge storage: 2.7 dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☒ Fixed Head Sprinklers ☐ Center Pivot ☐ Traveling Gun ☐ Drip Dispersal
☐ Subsurface Low Pressure Pipe ☐ Other (describe) _____

10.2 Number of irrigation sites 1 Total Acres 16 Maximum % field slopes 10
Location: _____ $\frac{1}{4}$, SE _____ $\frac{1}{4}$, SW _____ $\frac{1}{4}$, 34 _____ Sec. 26N T 05E R Butler County 16 Acres
Location: _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ $\frac{1}{4}$, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.3 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☒ Other (describe) Timber/Native Grasses

10.4 Wastewater flow (dry weather) gallons per day: Average annual 7450
Seasonal _____ Off-season _____

10.5 Land application rate (design flow including 1-in-10 year storm water flows):
Design: 24 inches/year .06 inches/hour .36 inches/day 1.82 inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.6 Total irrigation per year (gallons): Design: 6,497,000 gal Actual: 2,719,250 gal

10.7 Actual months used for irrigation (check all that apply):
☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☒ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec

10.8 Land application rate is based on:
☒ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N and P) If N and P is selected, is the plan included? ☐ YES ☐ NO