Permit No. CP0001803

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

City of Lebanon
P.O. Box 111
Lebanon, MO 65536

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.

April 13, 2016
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

April 12, 2018
Expiration Date

John Madras
John Madras, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The Lebanon Wastewater Treatment Facility is currently permitted with a design flow of 2.6 million gallons per day (MGD) and proposes an increase to 3.5 MGD. The facility proposes to improve the existing treatment facility. Improvements will include the addition of influent and effluent flow measurement, installing a second mechanical screening device, installation of dissolved oxygen (DO) control system and mixers in the existing oxidation ditches, replacing tertiary filtration with disk filters, converting the existing backwash water basin to a sludge holding basin, converting the existing sludge holding basin to an aerobic digester, constructing a new aerobic digester, constructing new sludge and waste activated sludge (WAS) pump stations, modifications to the sludge dewatering building, and a new electrical service building.

The 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 required to determine "findings of affordability" because the permit applies to a **combined or separate sanitary sewer system for a publically-owned treatment works.**

In accordance with RSMo Section 644.145, a city may certify the applicable requirements are deemed affordable. The city of Lebanon has provided written certification that the changes to their operating permit are affordable due to their proposed construction project. See **Appendix 1 – City of Lebanon Certification**

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 Larkin Lamp Rynearson on October 1, 2015 and December 28, 2015.

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(8).

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 Southwest Regional Office per 10 CSR 20-7.015(9)(E)2.

5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"

6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."

7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.

   A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.

   B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.

   C. Manholes shall be located with the top access at or above grade level.

   D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:

      a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or

b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.

8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one 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 www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.

9. 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 www.dnr.mo.gov/env/wpp/401/ for more information.

10. Upon completion of construction:

    A. The city of Lebanon will become the continuing authority for operation, maintenance, and modernization of these facilities;

    B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued; and

    C. Submit an electronic copy of the as builts if the project was not constructed in accordance with previously submitted plans and specifications.

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at http://dnr.mo.gov/pubs/pub2481.pdf.

The potential for more stringent ammonia effluent limits was conveyed to the city through a review letter dated November 23, 2015 and by means of the modified draft operating permit, MO-0089010, public notice.

2. CONSTRUCTION PURPOSE

The 1998 303(d) list for Dry Auglaize Creek noted biochemical oxygen demand and total suspended solids as the pollutants. City of Lebanon was identified as the source of these pollutants. The wastewater treatment system was not the direct cause of the impairment; but rather the documented history of sanitary sewer overflows were getting released into Dry Auglaize Creek. The department opted to correct the impairments in Dry Auglaize Creek through permit limits and a schedule of completion of system upgrades and improvements. The city of Lebanon is party to a consent decree with the Environmental Protection Agency and the State of Missouri Civil Action No. 04-3125-CV-S-RED. The EPA approved the permit in lieu of the Total Maximum Daily Load (TMDL) on March 12, 2008.

The proposed facility improvements will fulfill the requirements of the permit in lieu of TMDL.

3. FACILITY DESCRIPTION

The following facility description reflects the proposed facility improvements. The discharge location remains the same to the receiving waterbody of the Dry Auglaize Creek.

Fine screening / influent pump station / grit removal / oxidation ditch with three aeration basins / four clarifiers / tertiary disk filtration / ultraviolet disinfection / three aerobic sludge digesters / sludge dewatering / two sludge holding basins / sludge is land applied.

The treatment facility is located at 1727 Main Street, Lebanon, in Laclede County, Missouri. The facility will increase the design average flow to 3.5 MGD and serve a population equivalent of approximately 35,000 people.

4. COMPLIANCE PARAMETERS

The proposed improvements to the Lebanon WWTF will meet the following effluent limits, which were public noticed and described within APPENDIX 2 – ANTIDEGRADATION ANALYSIS:

- BOD_5 limits of 10 mg/L monthly average and 15 mg/L weekly average;
- TSS limits of 10 mg/L monthly average and 15 mg/L weekly average;
- pH range of 6.5 to 9.0;
- Ammonia limits (April 1 – Sept 30) of 1.4 mg/L monthly average and 3.1 mg/L daily maximum;
- Ammonia limits (Oct 1 – March 31) of 2.9 mg/L monthly average and 7.5 mg/L daily maximum;
- E. coli limits of 126 colonies/100 mL daily maximum;
- Oil & Grease limits of 10 mg/L monthly average and 15 mg/L daily maximum;
- Bis(2-ethylhexl) Phthalate limits of 5.9 µg/L monthly average and 7.7 µg/L daily maximum;
- Copper limits of 15.7 µg/L monthly average and 31.6 µg/L daily maximum;
- Zinc limits of 106.8 µg/L monthly average and 214.3 µg/L daily maximum;

- Monitoring for Total Phosphorus and Total Nitrogen;
- Annual monitoring for acute whole effluent toxicity; and
- Instream monitoring for pH, Temperature, Total Phosphorus, Total Nitrogen, Ammonia, Dissolved Oxygen, and Total Hardness.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Construction will cover the following items:

- Flow Measurement. The addition of an influent and effluent 24-inch throat parshall flume with ultrasonic flow sensor to measure flow. Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis. The influent parshall flume shall be located between screening and the influent pump station. The effluent parshall flume shall be located between ultraviolet disinfection and the outfall.

- Screening. Modify the existing outdoor bar screen structure by relocating the existing mechanically cleaned screen, which allows for the installation of a second screening device. Installation of a new mechanically cleaned screen with clear openings of 0.25 inches and screen enclosure for outdoor protection. The new screening device shall be capable of treating a design average flow of 3.5 MGD and a peak flow of 10.5 MGD. The addition of a second mechanically cleaned screen provides redundancy and improved screening of inorganic materials. The bar screen structure is followed by proposed influent flow measurement and the existing influent pump station.

- Oxidation Ditches. The two original oxidation ditches each have a volume of 967,530 gallons with two 40 horse power (HP) brush rotors. The addition of two mixers per oxidation ditch will provide a minimum velocity of one foot per second in the basins. The motors for the mixers are 5 HP each. A dissolved oxygen (DO) control system will be added to control the existing rotors and proposed mixers based on the level of DO in the each basin.

- Tertiary Filtration. Removal and demolition of the existing tertiary sand filters from the Controls Building and conversion to a maintenance room. Construction of a new Filter Building. Disk filtration is proposed for tertiary treatment which will improve effluent water quality compared to the existing process. Disk filtration shall follow clarification prior to disinfection. The city has elected to bid the following two proprietary disk filter systems.

    - Base Bid A. Base Bid A consists of four Ultrascreen Disk Filters Model UL1605CS by Nova Water Technologies, LLC. Each unit is capable of treating an average design flow of 1.5 MGD. With one unit out-of-service the disk filters are capable of treating a peak flow of 12 MGD at a maximum flux rate of 12 gallons per minute (gpm) per square foot. Each unit has ten disks with a total filtration area of 220 square feet. The discs are constructed with 20 μm openings.

Each disk filter unit shall be supplied with a backwash assembly. Backwash shall consist of 14 nozzles per spray header with each spray header capable of delivering 21.2 gpm of water at 60 pounds per square inch (psi). The total wash water volume is approximately 212 gpm. The backwash pump shall have a total dynamic head (TDH) of 150 feet with a 10 HP motor.

- Base Bid B. Base Bid B consists of three AquaDisk Filters Model ADFSP-54x12E-PC by Aqua-Aerobic Systems, Inc. Each unit is capable of treating an average design flow of 1.5 MGD. With one unit out-of-service the disk filters are capable of treating a peak flow of 12 MGD at a maximum flux rate of 6.45 gpm per square foot. Each unit has twelve cloth disk assemblies with a total filtration area of 645.6 square feet. The media is constructed with 10 μm openings. Each disk filter unit shall be supplied with a backwash system. Each backwash system shall consist of duplicate pumps capable of pumping130 gpm at 23 feet of TDH with a two HP motor. Backwash of the disk filter unit is based upon vacuum instead of pressure.

- Sludge Holding Basin. Converting the existing backwash holding basin into a sludge holding basin. This will increase the number of proposed sludge holding basins to two. The basin has a 30 foot diameter and volume of 106,000 gallons. Installation of an ultrasonic level sensor to measure the volume of sludge present in each basin. The sludge will be received from the clarifiers.

- WAS Pump Station. Construction of a new waste sludge pump station and associated valves. The WAS pump will be capable of pumping 214 gpm at 34 feet of TDH with a 6.5 HP motor. The WAS pump station will follow the sludge holding basins and prior to dewatering.

- Dewatering Building. Demolition of a portion of the Dewatering Building to allow for additional space for the new Electrical Building. The existing gravity belt thickener equipment will be relocated within the smaller footprint of the building. Installation of a new polymer scale and chemical flowmeter is also included.

- Aerobic Digesters. Converting two existing 73 foot diameter sludge holding basins into aerobic digesters for a total volume of 876,400 gallons. Plus, the construction of a third aerobic digester with an 80 foot diameter and volume of 750,000 gallons. Fine bubble diffusers will be installed in all three aerobic digesters. The aeration system is capable of providing at least 1,750 cfm at 7 psig for each 73 foot aerobic digesters and 3,000 cfm at 10 psig for the new 80 foot aerobic digester. Five blowers with a minimum 100 HP motors will be provided with two dedicated to the new 80 foot aerobic digester and one each dedicated to each of the smaller digesters. The fifth blower will act as a backup. The aerobic digesters follow the gravity belt thickener and prior to the sludge loading pump station.

- Sludge Pump Station for Digesters. Construction of a new sludge loading pump station for the aerobic digesters and associated valves. The sludge pump will be capable of pumping 530 gpm at 35 feet of TDH with a 10 HP motor.

- Electrical. Removal of the existing electrical controls from the Controls Building and conversion to facility personnel offices. Construction of a new Electrical Building. Emergency power will be provided by existing stand by generators equipped with automatic transfer switches to serve treatment components in the event of power failure.

Deviation Request:

The department has approved a deviation from 10 CSR 20-8.210(4)(C)1., which states "[f]iltration rates shall not exceed five gallons per minute per square foot based on the maximum hydraulic flow rate applied for the filter units."

On December 12, 2013, the department approved the use of the NOVA Water Technologies, LLC. high rate disk filtration system. See APPENDIX 3 – NOVA WATER TECHNOLOGIES APPROVAL LETTER.

On August 11, 2015, the department approved the use of the Aqua-Aerobic Systems Inc. high rate tertiary filter. See APPENDIX 4 – AQUA-AEROBIC SYSTEMS INC. APPROVAL LETTER.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0089010 will require a modification to reflect the construction activities. The modified Lebanon WWTF, MO-0089010, was successfully public noticed from March 4, 2016 to April 4, 2016 with one comment letter submitted by the Missouri Public Utility Alliance (MPUA) received on March 29, 2016.

Upon construction completion, submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.

Emily Carpenter
Engineering Section
emily.carpenter@dnr.mo.gov

MO-0089010 AP21975

CP0001791 CP

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT WASTEWATER TREATMENT FACILITY

RECEIVED
OCT 01 2015
Water Protection Program

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED $2200.00	CHECK NO. 83496
DATE RECEIVED 10/1/15 SB	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility 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: _____ Project #: _____

1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☑ YES Date of Approval: 6/11
☐ Attached is the No Degradation Evaluation Conclusion of Antidegradation Review form

1.3 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 11/12 ☐ NO ☐ N/A (If Not Applicable, complete No. 1.4.)

1.4 [Complete only if answered Not Applicable on No. 1.3.] 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

1.5 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

1.6 Is a summary of design* included with this application? ☑ YES ☐ NO

1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☐ YES Date of submittal: _____
☑ Enclosed is the appropriate operating permit application submittal. Denote which form: ☐ A ☐ B ☑ B2
☐ N/A Please explain: _____

1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☑ NO

1.9 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

Wastewater Treatment Plant Improvements

2.2 PROJECT DESCRIPTION

Install new filters and new electrical equipment. Construct new digester and convert existing sludge holding basins to digesters. Convert backwash basin to sludge holding basin. Modify sludge dewatering building. Install mixers and D.O. control in oxidation ditches. Construct new bar screen structure. Install new influent and effluent parshall flumes.

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Continue use of gravity belt thickener and land application of sludge. Convert existing sludge holding basins to aerobic digesters and construct a new aerobic digester. Convert backwash basin to additional sludge holding of WAS.

2.4 DESIGN INFORMATION

A. Current population: 14,474; Design population: 20,933

B. Actual Flow: 2420000 gpd; Design Average Flow: 35000000 gpd;
Actual Peak Daily Flow: 10400000 gpd; Design Maximum Daily Flow: 10500000 gpd

2.5 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

Water Protection Program

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Wastewater Treatment Plant	417 588-6090	rcshockley@LEBANONMO.ORG

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
1727 Main	Lebanon	Mo	65536	Laclede

Wastewater Treatment Facility: Mo- 0089010 (Outfall 1 Of 1)

3.1 Legal Description: ____ ¼, SE ¼, NE ¼, Sec. 2, T 34N, R 16W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 530831 Northing (Y): 4173143
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Dry Auglaize

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
City of Lebanon	(417) 588-6090	rcshockley@LEBANONMO.ORG

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 111	Lebanon	Mo	65536

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	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Same as above		

ADDRESS	CITY	STATE	ZIP CODE

5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☑ 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? ☐ YES ☐ 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? ☐ YES ☐ 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? ☐ YES ☐ 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? ☐ YES ☐ NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☐ NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Larkin Lamp Rynearson	(816) 823-7230	greg.kendall@LRA-Inc.com

ADDRESS	CITY	STATE	ZIP CODE
9200 Ward Pkwy Ste 200	Kansas City	Mo	64114

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		DATE
Richard Shockley		8-22-15
TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Public Works Director	(417) 588-6090	rcshockley@LEBANONMO.ORG

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.

RECEIVED

OCT 01 2015

Water Protection Program

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.
☐ 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: _____ (Use additional pages if greater than three 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 _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____
Basin #3: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #3: Maximum operating water level _____ ft Minimum operating water level _____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

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

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres
(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

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

10.4 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.5 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

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

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