Permit No. CP0002532

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

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

REORGANIZED COMMON SEWER DISTRICT OF STONE COUNTY #1
495 Lakewood Rd
Branson, MO 65616

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.

November 18, 2025
Effective Date

November 17, 2027
Expiration Date

Heather Peters Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

The proposed construction is to improve treatment at the Compton Ridge Wastewater Treatment Plant (WWTP) by replacing the existing recirculating sand filter system with a new extended aeration package plant.

The plans identify that the existing sand filter bed, media filter pump, associated piping, and a building will be removed as part of the proposed improvements. A closure plan will need to be submitted to the Southwest Regional Office for review and approval prior to any 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 determine Cost Analysis for Compliance because the permit contains no new conditions or requirements that convey a new cost to the facility.

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 consistent with plans and specifications signed and sealed by Adrianne P. Eilers, P.E., Jason R. Clark, P.E., Jeff J. Fickbohm, P.E., and Louis D. Weller, P.E., with CRAWFORD, MURPHY & TILLY, INC., and as described in this permit.

3. The department must be contacted in writing prior to making any changes to the 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 Southwest Regional Office per 10 CSR 20-7.015(9)(G).

5. 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 https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. See https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting for more information.

6. A United States Army Corps of Engineers (USACE) Clean Water Act Section 404 Department of the Army permit and a Section 401 Water Quality Certification issued by the department may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied or notification is provided that no Section 404 permit is required by the USACE. You must contact your local USACE district since they determine what waters are jurisdictional and which permitting requirements may apply. You may call the department's Water Protection Program, Operating Permits Section at 573-522-4502 for more information. See https://dnr.mo.gov/water/business-industry-other-entities/permits-certification-engineering-fees/section-401-water-quality for more information.

7. In accordance with 10 CSR 20-6.010(12), a full closure plan shall be submitted to the department's Southwest Regional Office for review and approval of any permitted wastewater treatment system being replaced. The closure plan must meet the requirements outlined in Standard Conditions Part III of the Missouri State Operating Permit No. MO-0122866. Closure shall not commence until the submitted closure plan is approved by the department. Form J – *Request for Termination of a State Operating Permit*, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- Flood protection shall apply to new construction and to existing facilities undergoing major modification. 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. 10 CSR 20-8.140(2)(B)

- Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300'). 10 CSR 20-8.140(2)(C)1.
- No treatment unit with a capacity of twenty-two thousand five hundred gallons per day (22,500 gpd) or less shall be located closer than the minimum distance of 200' to a neighboring residence and 50' to property line for lagoons; 200' to a neighboring residence for open recirculating media filters following primary treatment; and 50' to a neighboring residence for all other discharging facilities. See 10 CSR 20-2.010(68) for the definition of a residence. 10 CSR 20-8.140(2)(C)2
- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D)
- The outfall shall be so constructed and protected against the effects of flood water, ice, or other hazards as to reasonably ensure its structural stability and freedom from stoppage. 10 CSR 20-8.140(6)(A)
- All sampling points shall be designed so that a representative and discrete twenty-four (24) hour automatic composite sample or grab sample of the effluent discharge can be obtained at a point after the final treatment process and before discharge to or mixing with the receiving waters. 10 CSR 20-8.140(6)(B)
- All outfalls shall be posted with a permanent sign indicating the outfall number (i.e., Outfall #001). 10 CSR 20-8.140(6)(C)
- All wastewater treatment facilities shall be provided with an alternate source of electric power or pumping capability to allow continuity of operation during power failures. 10 CSR 20-8.140(7)(A)1.
- Disinfection, when used, shall be provided during all power outages. 10 CSR 20-8.140(7)(A)2.
- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140(7)(B)
- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140(7)(C)
- No piping or other connections shall exist in any part of the wastewater treatment facility that might cause the contamination of a potable water supply. 10 CSR 20-8.140(7)(D)1.
- Where a potable water supply is to be used for any purpose in a wastewater treatment facility other than direct connections, a break tank, pressure pump, and pressure tank or a reduced pressure backflow preventer consistent with the department's Public Drinking Water Branch shall be provided. 10 CSR 20-8.140(7)(D)3.A.
- For indirect connections, a sign shall be permanently posted at every hose bib, faucet, hydrant, or sill cock located on the water system beyond the break tank or backflow preventer to indicate that the water is not safe for drinking. 10 CSR 20-8.140(7)(D)3.B.

- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)
- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility:
    - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals; 10 CSR 20-8.140 (8) (A)
    - Gratings over appropriate areas of treatment units where access for maintenance is necessary; 10 CSR 20-8.140(8)(B)
    - First aid equipment; 10 CSR 20-8.140(8)(C)
    - Posted "No Smoking" signs in hazardous areas; 10 CSR 20-8.140(8)(D)
    - Appropriate personal protective equipment (PPE); 10 CSR 20-8.140(8)(E)
    - Portable blower and hose sufficient to ventilate accessed confined spaces; 10 CSR 20-8.140(8)(F)
    - 10 CSR 20-8.140(8)(G) Portable lighting equipment complying with NEC requirements. See subsection (7)(B) of this rule;
    - 10 CSR 20-8.140(8)(H) Gas detectors listed and labeled for use in NEC Class I, Division 1, Group D locations. See subsection (7)(B) of this rule;
    - Appropriately-placed warning signs for slippery areas, non-potable water fixtures (see subparagraph (7)(D)3.B. of this rule), low head clearance areas, open service manholes, hazardous chemical storage areas, flammable fuel storage areas, high noise areas, etc.; 10 CSR 20-8.140(8)(I)
    - Ventilation shall include the following:
        - Isolate all pumping stations and wastewater treatment components installed in a building where other equipment or offices are located from the rest of the building by an air-tight partition, provide separate outside entrances, and provide separate and independent fresh air supply; 10 CSR 20-8.140(8)(J)1.
        - Force fresh air into enclosed screening device areas or open pits more than four feet (4') deep. 10 CSR 20-8.140(8)(J)2.
        - Dampers are not to be used on exhaust or fresh air ducts. Avoid the use of fine screens or other obstructions on exhaust or fresh air ducts to prevent clogging; 10 CSR 20-8.140(8)(J)3.
        - Where continuous ventilation is needed (e.g., housed facilities), provide at least twelve (12) complete air changes per hour. Where continuous ventilation would cause excessive heat loss, provide intermittent ventilation of at least thirty (30) complete air changes per hour when facility personnel enter the area. Base air change demands on one hundred percent (100%) fresh air; 10 CSR 20-8.140(8)(J)4.
        - Electrical controls. Mark and conveniently locate switches for operation of ventilation equipment outside of the wet well or building. Interconnect all intermittently operated ventilation equipment with the respective wet well, dry well, or building lighting system. The manual lighting/ventilation switch is expected to override the automatic controls. For a two (2) speed ventilation system with automatic switch over where gas detection equipment is installed, increase the ventilation rate automatically in

response to the detection of hazardous concentrations of gases or vapors; 10 CSR 20-8.140(8)(J)5.
        - Fabricate the fan wheel from non-sparking material. Provide automatic heating and dehumidification equipment in all dry wells and buildings. 10 CSR 20-8.140(8)(J)6.
    - Explosion-proof electrical equipment, non-sparking tools, gas detectors, and similar devices, in work areas where hazardous conditions may exist, such as digester vaults and other locations where potentially explosive atmospheres of flammable gas or vapor with air may accumulate. 10 CSR 20-8.140(8)(K)
    - Provisions for local lockout/tagout on stop motor controls and other devices; 10 CSR 20-8.140(8)(L)
    - Provisions for an arc flash hazard analysis and determination of the flash protection boundary distance and type of PPE to reduce exposure to major electrical hazards shall be in accordance with NFPA 70E *Standard for Electrical Safety in the Workplace* (2018 Edition), as approved and published August 21, 2017. 10 CSR 20-8.140(8)(M)
- The materials utilized for storage, piping, valves, pumping, metering, and splash guards, etc., for chemical handling, shall be specially selected considering the physical and chemical characteristics of each hazardous or corrosive chemical. 10 CSR 20-8.140(9)(A)1.
- Secondary containment storage areas contain the stored volume of chemical until it can be safely transferred to alternate storage or released to the wastewater treatment plant at controlled rates that will not damage the facilities, inhibit the treatment processes, or contribute to stream pollution. Secondary containment shall be designed as follows:
    - A minimum volume of one hundred ten percent (110%) of the volume of the largest storage container located within the containment area plus the space occupied by any other tanks located within the containment area when protected from precipitation; 10 CSR 20-8.140(9)(A)2.B.
    - Walls and floors of the secondary containment structure constructed of suitable material that is compatible with the specifications of the product being stored. 10 CSR 20-8.140(9)(A)2.C.
- All pumps or feeders for hazardous or corrosive chemicals shall have guards that will effectively prevent spray of chemicals into space occupied by facility personnel. 10 CSR 20-8.140(9)(A)3.
- All piping containing or transporting corrosive or hazardous chemicals shall be identified with labels every ten feet (10') and with at least two (2) labels in each room, closet, or pipe chase. 10 CSR 20-8.140(9)(A)4.A.
- All connections (flanged or other type), except those adjacent to storage or feeder areas, shall have guards that will direct any chemical leakage away from space occupied by facility personnel. 10 CSR 20-8.140(9)(A)4.B.
- Facilities shall be provided for automatic shutdown of pumps and sounding of alarms when failure occurs in a pressurized chemical discharge line. 10 CSR 20-8.140(9)(A)5.
- The following shall be provided to fulfill the particular needs of each chemical housing facility:

- Provide storage for a minimum of thirty (30) days' supply, unless local suppliers and conditions indicate that such storage can be reduced without limiting the supply; 10 CSR 20-8.140(9(B) 1.
- Equip doors with panic hardware. To prevent unauthorized access, doors lock but do not need a key to exit the locked room using the panic hardware; 10 CSR 20-8.140(9)(B)3.
- Provide chemical storage areas with drains, sumps, finished water plumbing, and the hose bibs and hoses necessary to clean up spills and to wash equipment; 10 CSR 20-8.140(9)(B)4.
- Construct chemical storage area floors and walls of material that is suitable to the chemicals being stored and that is capable of being cleaned; 10 CSR 20-8.140(9)(B)5.
- Install floor surfaces to be smooth, chemical resistant, slip resistant, and well drained with three inches per ten feet (3"/10') minimum slope; 10 CSR 20-8.140(9)(B)6.
- Provide adequate lighting; 10 CSR 20-8.140(9)(B)7.
- Comply with the NEC recommendation for lighting and electrical equipment based on the chemicals stored. 10 CSR 20-8.140(9)(B)8.
- Store chemical containers in a cool, dry, and well-ventilated area; 10 CSR 20-8.140(9)(B)9.
- Locate storage area for chemical containers out of direct sunlight; 10 CSR 20-8.140(9)(B)11.
- Maintain storage temperatures in accordance with relevant Material Safety Data Sheets (MSDS). 10 CSR 20-8.140(9)(B)12.
- Store incompatible chemicals separately to ensure the safety of facility personnel and the wastewater treatment system. Store any two (2) chemicals that can react to form a toxic gas in separate housing facilities; 10 CSR 20-8.140(9)(B)16.

- The following shall be provided, where applicable, for the design of chemical handling:
  - Make provisions for measuring quantities of chemicals used for treatment or to prepare feed solutions over the range of design application rates; 10 CSR 20-8.140(9)(C)1.
  - Select storage tanks, piping, and equipment for liquid chemicals specific to the chemicals; 10 CSR 20-8.140(9)(C)2.
  - Install all liquid chemical mixing and feed installations on corrosion resistant pedestals; 10 CSR 20-8.140(9)(C)3.
  - Provide sufficient capacity of solution storage or day tanks feeding directly for twenty-four- (24-) hour operation at design average flow; 10 CSR 20-8.140(9)(C)4.
  - Provide a minimum of two (2) chemical feeders for continuous operability. Provide a standby unit or combination of units of sufficient capacity to replace the largest unit out-of-service; 10 CSR 20-8.140(9)(C)5.
  - Chemical feeders shall—
    - Be designed with chemical feed equipment to meet the maximum dosage requirements for the design average flow conditions; 10 CSR 20-8.140(9)(C)6.A.
    - Be able to supply, at all times, the necessary amounts of chemicals at an accurate rate throughout the range of feed; 10 CSR 20-8.140(9)(C)6.B.

        - Provide proportioning of chemical feed to the rate of flow where the flow rate is not constant; 10 CSR 20-8.140(9)(C)6.C.
        - Be designed to be readily accessible for servicing, repair, and observation; 10 CSR 20-8.140(9)(C)6.D.
        - Protect the entire feeder system against freezing; 10 CSR 20-8.140(9)(C)6. E.
        - Be located adjacent to points of application to minimize length of feed lines; 10 CSR 20-8.140(9)(C)6.F.
        - Provide for both automatic and manual operation for chemical feed control systems; 10 CSR 20-8.140(9)(C)6.G.
        - Utilize automatic chemical dose or residual analyzers, and where provided, include alarms for critical values and recording charts; 10 CSR 20-8.140 (9)(C)6.H.
        - Provide screens and valves on the chemical feed pump suction lines; 10 CSR 20-8.140(9)(C)6.I.
        - Provide an air break or anti-siphon device where the chemical solution enters the water stream; 10 CSR 20-8.140(9)(C)6.J.
- The following chemical safety items shall be provided in addition to the safety provisions in section (8) of this rule:
    - Appropriate personal protective equipment (PPE). 10 CSR 20-8.140(9)(D)1.
    - Eye wash fountains and safety showers utilizing potable water shall be provided in the laboratory and on each level or work location involving hazardous or corrosive chemical storage, mixing (or slaking), pumping, metering, or transportation unloading. The design of eye wash fountains and safety showers shall include the following:
        - Eye wash fountains with water of moderate temperature, fifty degrees to ninety degrees Fahrenheit (50°–90°F), suitable to provide fifteen to thirty (15–30) minutes of continuous irrigation of the eyes; 10 CSR 20-8.140(9) (D)2.A.
        - Eye wash fountains located no more than twenty-five feet (25') from points of hazardous chemical exposure; CSR 20-8.140 (9)(D)2.C.
        - Eye wash fountains and showers that are to be fully operable during all weather conditions; 10 CSR 20-8.140(9)(D)2.D.
        - Emergency showers capable of discharging twenty gallons per minute (20 gpm) of water of moderate temperature, fifty degrees to ninety degrees Fahrenheit (50°–90°F), and at pressures of thirty to fifty pounds per square inch (30-50 psi); 10 CSR 20-8.140 (9)(D)2.B.
    - Warning signs requiring use of goggles shall be located near chemical stations, pumps, and other points of frequent hazard. 10 CSR 20-8.140(9)(D)3.
- The identification and hazard warning data included on chemical shipping containers, when received, shall appear on all containers (regardless of size or type) used to store, carry, or use a hazardous substance. 10 CSR 20-8.140(9)(E)
- All wastewater treatment facilities must have a screening device, comminutor, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150(2)
- All screening devices and screening storage areas shall be protected from freezing. 10 CSR 20-8.150(4)(A)1.

- Provisions shall be made for isolating or removing screening devices from their location for servicing. 10 CSR 20-8.150(4)(A)2.
- Manually cleaned screen channels shall be protected by guard railings and deck gratings with adequate provisions for removal or opening to facilitate raking. 10 CSR 20-8.150(4)(A)3.A.(I)
- Overflow weirs shall be readily adjustable over the life of the structure to correct for differential settlement of the tank. 10 CSR 20-8.160(3)(C)1.
- Walls of settling tanks shall extend at least six inches (6") above the surrounding ground surface and shall provide not less than twelve inches (12") of freeboard. 10 CSR 20-8.160(3)(E)
- Safety features shall appropriately include machinery covers, life lines, handrails on all stairways and walkways, and slip resistant surfaces. For additional safety follow the provisions listed in 10 CSR 20-8.140(8). 10 CSR 20-8.160(5)(A)
- The design shall provide for convenient and safe access to routine maintenance items such as gear boxes, scum removal mechanism, baffles, weirs, inlet stilling baffle areas, and effluent channels. 10 CSR 20-8.160(5)(B)
- Emergency Power. Disinfection processes, when used, shall be provided during all power outages. 10 CSR 20-8.190(2)(A)
- The UV dosage shall be based on the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(A)1.
- If no flow equalization is provided for a batch discharger, the UV dosage shall be based on the peak batch flow. 10 CSR 20-8.190(5)(A)2.
- The UV system shall deliver the target dosage based on equipment derating factors and, if needed, have the UV equipment manufacturer verify that the scale up or scale down factor utilized in the design is appropriate for the specific application under consideration. 10 CSR 20-8.190(5)(A)3.
- The UV system shall deliver a minimum UV dosage of thirty thousand microwatt seconds per centimeters squared (30,000 $\mu W \cdot s/cm^2$). 10 CSR 20-8.190(5)(A)4.
- Open channel UV systems. The combination of the total number of banks shall be capable of treating the design peak hourly flow, maximum rate of pumpage, or peak batch flow. 10 CSR 20-8.190(5)(B)1.
- The UV system must continuously monitor and display at the UV system control panel the following minimum conditions:
    - The relative intensity of each bank; 10 CSR 20-8.190(5) (C)1.A.
    - The operational status and condition of each bank; 10 CSR 20-8.190(5)(C)1.B.
    - The ON/OFF status of each lamp in the system; 10 CSR 20-8.190(5)(C)1.C. and
    - The total number of operating hours of each bank. 10 CSR 20-8.190(5)(C)1.D.
- The UV system shall include an alarm system. Alarm systems shall comply with 10 CSR 20-8.140(7)(C). 10 CSR 20-8.190(5)(C)2.
- Filtration systems shall have:
    - Convenient access to all components and the media surface for inspection and maintenance without taking other units out of service; 10 CSR 20-8.210(3)(B)1.A.
    - Enclosed controls and heating and ventilation equipment to control humidity; 10 CSR 20-8.210(3)(B)1.B. and

  - The capacity to process the design average flow to the filters with the largest unit out of service utilizing a minimum of two (2) units. 10 CSR 20-8.210(3)(B)1.C.
- The shallow bed filter shall:
  - Comply with the manufacturer's recommendations at average design flow; 10 CSR 20-8.210(3)(D)1.
  - Provide multiple unit operations to allow for continuous operability and operational variability; 10 CSR 20-8.210(3)(D)2.
  - Include inlet ports located throughout the length of the filter. 10 CSR 20-8.210(3)(D)5.
  - Provide an underdrainage system along the entire length of the filter so that filter effluent is uniformly withdrawn without clogging outlet openings. 10 CSR 20-8.210(3)(D)6.

9. Upon completion of construction:

   A. REORGANIZED COMMON SEWER DISTRICT OF STONE COUNTY #1 (district) will become the continuing authority for operation and maintenance of these facilities;

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

   C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155). A draft permit renewal was public noticed September 19, 2025, through October 20, 2025. Outfall #001 will be effective until the department receives a statement of work complete for the construction activities covered by this construction permit. After that point, Outfall #001 – Post Construction (CP0002532) will be effective.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The Compton Ridge WWTP is currently under enforcement action for causing pollution to waters of the state and for failure to meet permitted effluent limits. A review of discharge monitoring report history since January 2020 shows that the facility has routinely exceeded effluent limits for aluminum, ammonia as nitrogen, and total phosphorus. The district entered into an Abatement Order on Consent (AOC) dated May 13, 2024, which requires them to retain an engineer to evaluate the Compton Ridge and Red Cedar Point facilities for upgrades or replacements that will enable compliance with the Missouri Clean Water Law and the conditions of their respective permits. The AOC also requires that until such time that engineered improvements or replacements are completed at Compton Ridge and Red Cedar Point, the district must pump and haul wastewater from each treatment facility to a permitted WWTF capable of accepting the additional load at least three times per

week. The proposed upgrades are therefore intended to enable the Compton Ridge WWTP to comply with all permitted effluent limits in MO-0122866.

2. FACILITY DESCRIPTION

The current Compton Ridge WWTP is composed of a lift station, septic tank, recirculating sand filter, chemical addition to facilitate phosphorus removal with a settling tank, and ultraviolet disinfection. The proposed improvements will remove the recirculating sand filter as well as some of the associated appurtenances and will replace it with an extended aeration package plant. The package plant consists of influent screening, a flow equalization chamber, flow proportioning box, aeration chamber, clarifier chamber, a dual-media tertiary filter system, ultraviolet (UV) disinfection, effluent flow measurement, post aeration, a sludge and scum recirculation system, a sludge holding chamber, blowers, and a chemical phosphorus removal system.

The Compton Ridge WWTP is located at 495 Lakewood Road, Branson, in Stone County, Missouri. The facility has a design average flow of 14,625 gallons per day (gpd) and serves a hydraulic population equivalent of approximately 146 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits as established in Operating Permit MO-0122866.

The limits following the completion of construction will be applicable to the facility:

Parameter	Units	Monthly average limit
Biochemical Oxygen Demand$_5$	mg/L	20
Total Suspended Solids	mg/L	20
E. coli	#/100mL	126
Ammonia as N-summer	mg/L	1.4
Ammonia as N-winter	mg/L	2.9
Aluminum, Total Recoverable	µg/L	342
Iron, Total Recoverable	µg/L	777
Total Phosphorus	mg/L	0.5
pH	SU	6.0-9.0
Biochemical Oxygen Demand$_5$ – Percent Removal	%	85
Total Suspended Solids – Percent Removal	%	85

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing major components that will remain in use include the following:

- Influent Pump Station – Duplex influent pump station with each 1.5 horsepower (HP) submersible pump capable of operating at 50 gallons per minute (gpm) at 57 feet (ft) of total dynamic head (TDH).

Construction will cover the following items:

- Screening – Installation of screening devices removes nuisance inorganic materials from raw wastewater.
  - Manual Coarse Bar Screen – The manual coarse bar screen will have ½ inch bars and clear bar spacings of 1-inch and be positioned at an angle of 60 degrees from the horizontal to allow for manual raking of the screen. The coarse bar screen is followed by the equalization basin.

- Extended Aeration Package Plant – Installation of one extended aeration package plant manufactured by DPI Water Solutions capable of treating a design average flow of 14,625 gpd. The following components are integrated into the steel package plant:
  - Flow Equalization – A flow equalization chamber with a volume of 7,340 gallons will be provided. The design peak hourly flow to the facility is 60,986 gpd, and the flow equalization system is designed to provide storage for peak influent flows that exceed 36,562 gpd (equivalent to 2.5 times the design average flows). Aeration will be provided to reduce sludge and scum accumulation in the flow equalization tank. Aeration by means of a blower with 3 HP motor capable of supplying 36 cubic feet per minute (cfm) to coarse bubble diffusers capable of operating at a flow rate of 3 to 6 cfm per diffuser. Duplex flow equalization pumps transfer wastewater to the aeration chamber at a metered rate equal to the design average flow rate using a flow-proportioning box with an adjustable weir. The pumps are 0.5 HP capable of approximately 90 gpm at 13 ft TDH.
  - Aeration Chamber – 17.25 ft by 11.92 ft by 9.5 ft sidewater depth aeration chamber with a total volume of 14,625 gallons will be provided. Aeration by means of two blowers each with 5 HP motor and capable of supplying 82 cfm to coarse bubble diffusers capable of operating at a flow rate of 3 to 6 cfm per diffuser. The aeration chambers are designed for an average daily loading of 22.0 lbs BOD_5.
  - Clarifier – A circular clarifier with 8 ft diameter and 12 ft side water depth will provide final clarification and will have a settling volume of 4,510 gallons and a detention time of 7.4 hours at the design average flow. An air lift surface skimmer is provided to remove grease and floatables and return to the aeration chamber. An adjustable v-notch weir provides 21.7 lineal feet of skimming surface. The clarified effluent will flow by gravity to the tertiary filter process. An air lift pump will be provided to move settled sludge from the clarifier to the sludge holding chamber or return to the aeration chamber as return activated sludge.
    - Sludge Recirculation System – Activated sludge that settles in the clarifier is either recycled as return activated sludge (RAS) or disposed as waste

activated sludge (WAS). Two airlift pumps suppling 15 cfm of air will be provided to transfer the activated sludge to either the inlet end of the aeration chamber or to the sludge holding chamber for further digestion.
    - Scum Recirculation System – Floating debris in the clarifier is removed by the scum recirculation system and returned to the aeration chamber by means of two airlift pumps supplying 10 cfm of air.
  - Sludge Holding Chamber – The sludge holding chamber will have a volume of 3,400 gallons. The aeration chamber blowers will supply air to the fine bubble diffusers capable of operating at a flow rate of 3 to 6 cfm per diffuser. A port will be provided between the sludge holding chamber and aeration chamber to permit the overflow of supernatant to the equalization chamber. Sludge removal shall be by contract hauler.

- Tertiary Filtration – Installation of rapid-flow, dual-media tertiary filter manufactured by DPI Water Solutions with two cells. Each unit is capable of treating an average design flow of 14,400 gpd, and a peak hourly flow rate of 250% of the design average flow, equal to the peak hourly flow rates through the plant after considering the flow equalization used to attenuate peak flows. Each filter unit shall consist of silica sand and crushed anthracite and be supplied with a backwash system. Tertiary filtration shall follow clarification prior to disinfection. Air supply for scour to be provided by a blower with 3 HP motor capable of supplying 25 cfm at 5 pounds per square inch (psi).
  - Clearwell – 9 ft by 5 ft by 9 ft deep clearwell to receive the filtrate from the filter cells.
  - Mudwell – 6 ft by 6 ft by 8 ft deep mudwell to receive the backwash from the filter cells.
  - Backwash Pumps – Duplex pump system to pump water back through the tertiary filter to provide backwash cycle. Pumps are 1.5 HP and are capable of approximately 135 gpm at 27 ft TDH.
  - Filtrate Pumps – Duplex pump system to convey effluent to the disinfection system. Pumps are 0.75 HP and capable of approximately 31 gpm at 65 ft TDH.
  - Transfer Pumps – Duplex pump system to transfer the filtrate backwash to the secondary treatment system for further treatment. Pumps are 0.5 HP and capable of approximately 80 gpm at 15 ft TDH.

- Disinfection – Disinfection is the process of removal, deactivation, or killing of pathogenic microorganisms.
  - Open Channel Ultraviolet (UV) – An open channel, gravity flow, low pressure, high intensity UV disinfection system capable of treating a peak flow of 36,600 gpd while delivering a minimum UV intensity of 30 mJ/cm^2 with an expected ultraviolet transmissivity of 65% or greater. The single open channel UV system consists of one bank with one module per bank and two lamps per module. The disinfected effluent will flow by gravity through flow measurement equipment and to the post aeration tank.

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
  - V-notch Weir – A v-notch weir will be installed at the exit of the UV disinfection system with a 45-degree notch and a Vega C21 or equivalent sensor.

- Post Aeration Tank – To increase dissolved oxygen in the effluent after disinfection, the treated wastewater will go through a post aeration tank with a capacity of 3,900 gallons. Hydraulic residence time at design average flow is approximately 6.4 hours. The tanks will be provided mixing and aeration by the tertiary filter and post aeration blower to supply 36 cfm at 5 psi.

- Housed Facility – The proposed chemical feed system and storage shall be housed in a 10 ft by 10 ft building. Ventilation will be provided by a 12-inch diameter exhaust fan which will provide 66 air changes per hour when the fan is switched ON.

- Emergency Power – Emergency power to be supplied by minimum 50 kW standby generator and automatic transfer switch to operate the treatment facility in event of power failure.

5. OPERATING PERMIT

Operating permit MO-0122866 requires a modification to reflect the construction activities. The modified and renewed Compton Ridge WWTP, MO-0122866, was successfully public noticed from September 19, 2025, to October 20, 2025, with no comments received. The renewed permit included a separate outfall [Outfall #001 – Post Construction (CP0002532)] which becomes effective after completion of construction activities as authorized in this construction permit. Submit the Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(N), after which Outfall #001 – Post Construction (CP0002532) will be effective.

Operating permit MO-0122866 expired on September 30, 2023. A renewal application was received by the department on March 31, 2023, thus meeting the requirement to submit the operating permit renewal application at least one hundred eighty (180) days before the expiration date of the present operating permit. Therefore, the permit is administratively continued despite being past the expiration date.

V. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other

than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

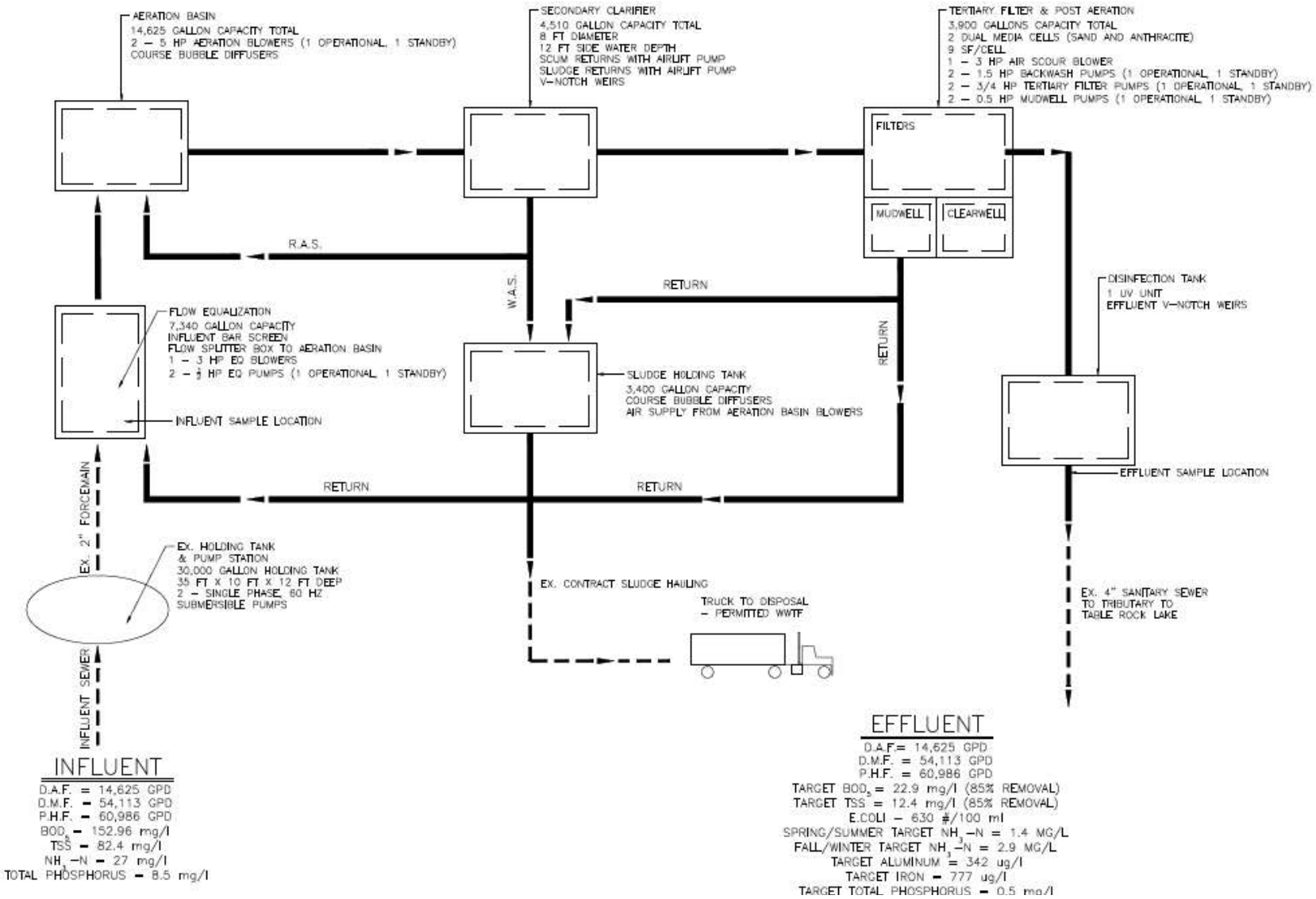
Thomas Silkwood
Engineering Section
thomas.silkwood@dnr.mo.gov

Chia-Wei Young, P.E.
Engineering Section
chia-wei.young@dnr.mo.gov

APPENDIX

- **Process Flow Diagram**

Process Flow Diagram



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED	CHECK NO.
DATE RECEIVED	

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: _____ ☑ N/A

1.3 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 7/15/24 ☐ NO (If No, complete No. 1.4.)

1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
☐ YES ☐ NO ☐ Exempt because _____

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 and fee submittal. Denote which form: ☐ A ☐ B ☐ B2
☑ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO

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

1.9 Is the appropriate fee or JetPay confirmation included with this application? ☑ YES ☐ NO
See Section 7.0

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT: Compton Ridge WWTP Upgrade

2.2 ESTIMATED PROJECT CONSTRUCTION COST: $ 1,866,000

2.3 PROJECT DESCRIPTION

Replacement of the existing recirculating sand filter plant with a new package plant that includes a manual bar screen, flow equalization tank, aeration basins, secondary clarifier, tertiary filters, UV disinfection, sludge holding tank and chemical phosphorus removal.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Sludge disposal by contract hauler

2.5 DESIGN INFORMATION

A. Current population: 132 ; Design population: 180

B. Actual Flow: 0.01M gpd; Design Average Flow: 0.014 gpd;
Actual Peak Daily Flow: 0.04M gpd; Design Maximum Daily Flow: 0.05M gpd; Design Wet Weather Event: 0.06M

2.6 ADDITIONAL INFORMATION

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

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

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Compton Ridge WWTP		

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
495 Lakewood Roadd	Branson	MO	65616	Stone

Wastewater Treatment Facility: Mo- 0122866 (Outfall 1 Of 1)

3.1 Legal Description: SE ¼, SE ¼, SW ¼, Sec. 33, T 23N, R 22W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 471188 Northing (Y): 4055531
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Table Rock Lake

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Stone County Sewer District No. 1	417-338-5231	barb@stonecounty waterandsewer.com

ADDRESS	CITY	STATE	ZIP CODE
118 Notch Lane, Suite C	Branson West	MO	65737

5.0 CONTINUING AUTHORITY:

A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Same as Project Owner		

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
Jason Clark	417.799.6255	jclark@cmtengr.com

ADDRESS	CITY	STATE	ZIP CODE
1631 West Elfindale	Springfield	MO	65807

7.0 APPLICATION FEE

☐ CHECK NUMBER ☒ JETPAY CONFIRMATION NUMBER 20060444

8.0 PROJECT OWNER: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PROJECT OWNER SIGNATURE

Floyd Ferguson

PRINTED NAME	DATE
Floyd Ferguson	

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Board President	417-338-5231	barb@stonecounty waterandsewer.com

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.
☐ 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 _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #3: 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 _____ 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