

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



GENERAL PERMIT for SEWER EXTENSION CONSTRUCTION

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

Construction Permit ID: MOGC00194
Title of Project: Safe Store Self Storage
Owner: City of Wentzville
Address: 200 E Fourth St
Wentzville, MO 63385

The project will also include general site work appropriate to the scope and purpose of the project and will include all the necessary appurtenances to make a complete and usable collection system. The construction of this project will be in the vicinity of the county below and discharge to Receiving Permit ID below:

County: St. Charles Receiving Permit ID: MO0093599

for the construction of (described construction project):

Safe Store Self Storage is proposing connection to the city of Wentzville. Construction of approximately 1582 lf of 8-inch PVC SDR-35 with approximately 9 manholes to serve a design average flow of 20 gpd and a design peak hourly flow of 1200 gph.

Project is in the vicinity of 1030 South Point Prairie in Wentzville, St. Charles County and discharges to an existing system to be treated at Wentzville WRC, MO-0093599. Susan Spiegel, Public Works Director, with the city of Wentzville provided an acceptance letter dated June 6, 2016.

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.

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

January 05, 2017

Issue Date

Handwritten signature of Edward B. Galbraith in blue ink.

Edward B. Galbraith, Director
Division of Environmental Quality

April 19, 2020

Expiration Date

Handwritten signature of Chris Wieberg in black ink.

Chris Wieberg, Director
Water Protection Program

APPLICABILITY

1. This permit authorizes the construction of gravity sewer extensions, force mains, and lift stations. Storage basins, considered part of the collection system, are also included. Earthen basins are not included under this General Sewer Extension Construction permit.
2. A Sewer Extension Construction Permit may be required by the department due to compliance and enforcement actions.
3. This permit does not apply to:
 - A. Earthen storage basins;
 - B. Projects located within an Approved Sewer Program. These include the City of Blue Springs, City of Columbia, City of Kansas City, City of Jefferson City, City of Joplin, City of Lebanon, City of Springfield, City of St. Peters, Duckett Creek Sewer District, and Metropolitan St. Louis Sewer District;
 - C. Projects funded by the Department of Natural Resources;
 - D. Projects that substantially deviate from the Design Guides in 10 CSR 20-8; and
 - E. Exempt projects unless requested by the applicant or required by enforcement.

PREREQUISITES:

1. The General Sewer Extension Construction Permit application, appropriate fee, and a schedule for construction with the date on which construction will begin and anticipated completion date.
2. The engineering report, as required, plans and specifications each signed and sealed by a professional engineer registered in the State of Missouri. A Summary of Design is an acceptable substitute for the engineering report required by this permit prerequisite.
3. The Design Certification form signed and sealed by a professional engineer registered in the State of Missouri certifying the design of the system was done in accordance with 10 CSR 20-6 and 10 CSR 20-8.
4. A statement from the continuing authority was received accepting the wastewater for treatment.
5. A statement from the continuing authority was received accepting the responsibility for operation, maintenance, and modernization of these facilities

PERMIT CONDITIONS:

1. Contact the department's appropriate regional office 48 hours prior to starting construction. Contact information can be found at <http://dnr.mo.gov/regions/regions.htm>.
2. This permit authorizes the activities and scope of work detailed in the plans and specifications submitted with the request.
3. The construction must be in accordance with the design certification stating the plans and specifications comply with 10 CSR 20-6 and 10 CSR 20-8.

PERMIT CONDITIONS: (continued)

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 regional office per 10 CSR 20-7.015(9)(E)2.
5. 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."
 - A. 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.
 - B. Sewer mains shall be laid at least ten feet (10') 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 ten foot (10') 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.
 - C. Manholes shall be located with the top access at or above grade level.
 - D. Manholes should be located at least ten feet (10') horizontally from any existing or proposed water main.
 - E. 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:
 - 1) 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
 - 2) Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends ten feet (10') 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.

PERMIT CONDITIONS: (continued)

6. 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.

7. 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.

8. If this project eliminates a wastewater treatment facility, then a full closure plan shall be submitted to the department's appropriate regional office for review and approval of any permitted wastewater treatment system being replaced. In accordance with 10 CSR 20-6.010(12), the closure plan must meet the requirements outlined in Standard Conditions Part III, Section I, of the Missouri State Operating Permit. 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 department's appropriate Regional Office for termination of any existing Missouri State Operating Permit, once closure is completed in accordance with the approved closure plan.
9. Submit a Statement of Work Completed Form to the department following completion of construction. Submit an electronic copy of the as built plans if the project was not constructed in accordance with previously submitted plans and specifications.

MO-0093594
 M0600194
 AP 25893
 C17626



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
 SEWER EXTENSION**

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEES RECEIVED \$300.00	CHECK NO. 1044
DATE RECEIVED 12-7-16	

NOTE ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

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: N/A Project #: N/A
- 1.2 Has the Department of Natural Resources approved the proposed project's engineering report* or a Sewer Extension Design Checklist* included?
 Sewer Extension Design Checklist. (N/A to department funded projects.) Engineering Report Date of Approval: _____
- 1.3 Is a copy of the appropriate plans* and specifications* included with this application?
 YES Denote which form is submitted: Hard copy (1 minimum) and Electronic copy (See instructions.) NO
- 1.4 Is a summary of design* included with this application? YES NO
- 1.5 Is the appropriate fee (\$300) included with this application? YES NO
- * Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT
 SAFE STORE SELF STORAGE

PHYSICAL ADDRESS	CITY	STATE	ZIP CODE	COUNTY
1030 SOUTH POINT PRAIRIE	WENTZVILLE	MO	63385	ST. CHARLES

2.2 Legal Description: $\frac{1}{4}$, $\frac{1}{4}$, $\frac{1}{4}$, Sec. 26, T 47N, R 1E

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

2.4 Project Components (check all that apply):
 Gravity sewers Pumping stations Force mains Alternative sewer system Other (Describe below.)

2.5 PROJECT DESCRIPTION
 INSTALLATION OF 1,582 LINEAR FEET OF 8" PVC AND 9 SANITARY MANHOLES IN ORDER TO SERVICE THE SAFE STORE SELF STORAGE PROJECT LOCATED AT 1030 SOUTH POINT PRAIRIE IN WENTZVILLE, MO.

2.6 DESIGN INFORMATION

- A. Population or number of lots to be served by this extension: 1 LOT
- B. Estimated flow to be contributed by this extension: Design Average Flow: 20 gpd Design Peak Hourly Flow: 1,200 gph
- C. Industrial Wastes: Type: N/A Flow: N/A gpd
- D. Receiving Sewer: Size: 8" inches Capacity: 950 gpm

3.0 PROJECT OWNER

NAME CITY OF WENTZVILLE	TELEPHONE NUMBER WITH AREA CODE (636) 639-2176	EMAIL ADDRESS john.gripentrog@wentzvillemo.org
ADDRESS 200 E. FOURTH STREET	CITY WENTZVILLE	STATE MO
		ZIP CODE 63385

4.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system.

NAME WENTZVILLE WWTF	TELEPHONE NUMBER WITH AREA CODE (636) 639-2078	EMAIL ADDRESS john.gripentrog@wentzvillemo.org
ADDRESS 200 E. FOURTH STREET	CITY WENTZVILLE	STATE MO
		ZIP CODE 63385

4.1 A letter from the continuing authority or the Continuing Authority and Receiving Wastewater Treatment Facility Acceptance form, if different than the owner, is included with this application. YES NO N/A

5.0 ENGINEER

ENGINEER NAME / COMPANY NAME PREMIER CIVIL ENGINEERING	TELEPHONE NUMBER WITH AREA CODE (314) 925-7444	EMAIL ADDRESS jwinters@premiercivil.com
ADDRESS 308 TCW COURT	CITY LAKE SAINT LOUIS	STATE MO
		ZIP CODE 63367

6.0 RECEIVING WASTEWATER TREATMENT FACILITY		
NAME WENTZVILLE WWTF	TELEPHONE NUMBER WITH AREA CODE (636) 639-2078	EMAIL ADDRESS john.gripentrog@wentzvillemo.org
MISSOURI STATE OPERATING PERMIT # MO-0093599	DESIGN AVERAGE FLOW (GPD)	REMAINING CAPACITY (GPD) 235,650 GPD
6.1 Has the receiving treatment facility agreed to accept the additional wastewater flow? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
6.2 A letter from the receiving wastewater treatment facility or the Continuing Authority and Receiving Wastewater Treatment Facility Acceptance form, if different than the continuing authority, is included with this application. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
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.		
PROJECT OWNER SIGNATURE SEE ATTACHED		
PRINTED NAME SUSAN SPIEGEL	DATE 11/29/2016	
TITLE OR CORPORATE POSITION DIRECTOR OF PUBLIC WORKS	TELEPHONE NUMBER WITH AREA CODE (636) 639-2176	EMAIL ADDRESS john.gripentrog@wentzvillemo.org
Mail completed copy to:	MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM P.O. BOX 176 JEFFERSON CITY, MO 65102-0176	



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
CONSTRUCTION PERMIT APPLICATION

FOR OFFICE USE ONLY

REV. NO
DATE RECEIVED
DATE APPROVED

INSTRUCTIONS

- A. Please type or print in ink
- B. A completed and signed application form must accompany each set of plans and specifications submitted to the department for review and approval.
- C. No fee is required for a construction permit.
- D. If you have any questions contact the Missouri Department of Natural Resources at P.O. Box 176, Jefferson City, MO 65102-0176 or call 800-361-4827 or 573-751-5331.

NAME OF PROJECT (TYPE OF CONSTRUCTION, FOLLOWED BY EITHER THE NAME OF THE DEVELOPMENT, CITY, WATER DISTRICT OR OTHER)

SAFE STORE SELF STORAGE

LIST OF DOCUMENTS SUBMITTED. TWO COPIES ARE REQUIRED FOR EACH DOCUMENT

- | | |
|---|--|
| <input type="checkbox"/> Engineering Report* or Review # _____ | <input type="checkbox"/> Supervised Program Specifications Review # _____ |
| <input checked="" type="checkbox"/> Detailed Plans* | <input type="checkbox"/> Hydraulic Analysis* |
| <input type="checkbox"/> Technical Specifications* | <input type="checkbox"/> Product or Equipment Literature |
| <input type="checkbox"/> Layout Map* | <input type="checkbox"/> Letter of Acceptance from Supply Source |
| <input type="checkbox"/> Standard Specifications Review # _____ | <input checked="" type="checkbox"/> Other (Specify) <u>Approval letter from City of Wentzville</u> |

*Must be affixed with the professional engineer's seal.

PROJECT IS FOR

- Development of new water supply system
 - TMF checklist TMF owner's acknowledgement form
- Modification of existing water supply system
 - Name of system: City of Wentzville
 - Identification number: MO 6010849 (New systems will not have this number)

SCOPE OF THE PROJECT (DESCRIBE THE PROJECT COMPLETELY, ATTACH ADDITIONAL SHEETS OF PAPER IF NECESSARY)

CONSTRUCTION OF STORAGE BUILDINGS AND REQUIRED INFRASTRUCTURE. WATER MAIN EXTENSION CONSISTS OF CONSTRUCTION OF 1,906 LIN. FT. OF 8" HDPE AND 4 FIRE HYDRANTS.

LOCATION OF THE PROJECT

U.S. Geological Survey location _____ ¼, _____ ¼, Section 27, T 47N, R 1E
County ST. CHARLES

LOCATION OF PROJECT

38 48'12"N Latitude 90 54'15"W Longitude

PROPOSED WATER SUPPLY SOURCE

- Well or Wells
- Stream, river, lake or reservoir (two-state treatment is required)
- Purchase – Name of supplier Public Water Supply District #2

WATER LINES

- Complete distribution system
- Water line extension
 - Line size at point of connection 8"
 - Available flow and pressure: Flow _____ Pressure _____
- Water line relocation
- Other (specify) _____

STORAGE

- | | |
|--|--|
| Dimension <u>N/A</u> | Capacity <u>N/A</u> |
| <input type="checkbox"/> Ground-level storage tank | <input type="checkbox"/> Pressure tank |
| <input type="checkbox"/> Elevated storage tank | <input type="checkbox"/> Others (specify) <u>N/A</u> |
| <input type="checkbox"/> Standpipe | |

MO 780-0701 (03-10)

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PROPOSED TREATMENT PROVIDED <input type="checkbox"/> Clarification <input type="checkbox"/> Pre-sedimentation <input type="checkbox"/> Chemical Rapid Mixing <input type="checkbox"/> Flocculation <input type="checkbox"/> Sedimentation <input type="checkbox"/> Filtration <input type="checkbox"/> Others (specify) <u>N/A</u>		<input type="checkbox"/> Radionuclide removal <input type="checkbox"/> THM control <input type="checkbox"/> VOC removal <input type="checkbox"/> Tastes and odor control <input type="checkbox"/> Stabilization <input type="checkbox"/> Disinfection Chemicals used <u>N/A</u> Contact time <u>N/A</u>	
<input type="checkbox"/> Softening <input type="checkbox"/> Lime or lime-soda process <input type="checkbox"/> Ion exchange process		<input type="checkbox"/> Fluoridation <input type="checkbox"/> Others (specify) <u>N/A</u>	
<input type="checkbox"/> Iron and Manganese removal <input type="checkbox"/> Oxidation-detention-filtration <input type="checkbox"/> Lime or lime-soda softening process <input type="checkbox"/> Ion exchange process <input type="checkbox"/> Manganese greensand filtration <input type="checkbox"/> Sequestration by chemicals <input type="checkbox"/> Others (specify) <u>N/A</u>			
PUMPING Number of Pumps <u>N/A</u> <input type="checkbox"/> Low service pumping <input type="checkbox"/> Booster pumping		Capacity / pump <u>N/A</u> <input type="checkbox"/> High service pumping <input type="checkbox"/> Others (specify) <u>N/A</u>	
WASTE DISPOSAL FACILITIES Number of units <u>N/A</u> <input type="checkbox"/> Pumps and piping <input type="checkbox"/> Treatment unit Final disposal of sludge <u>N/A</u>		Capacity / unit <u>N/A</u> <input type="checkbox"/> Holding structures <input type="checkbox"/> Other (specify) <u>N/A</u>	
OTHER WATER WORKS (SPECIFY)			
Note for owner or official custodian: For a sole proprietorship - the name of the proprietor. For a corporation - the name of an officer of at least the level of a plant manager. For a partnership - the name of a principal partner. For a city, state, federal or other public facility - the name of either a principal executive officer or a ranking public official.			
OWNER OR OFFICIAL CUSTODIAN		TELEPHONE NUMBER WITH AREA CODE	
<u>City of Wentzville</u>		<u>636-839-2176</u>	
ADDRESS	CITY	STATE	ZIP CODE
<u>200 E. FOURTH</u>	<u>Wentzville</u>	<u>MO</u>	<u>63385</u>
SIGNATURE OF OWNER OR OFFICIAL CUSTODIAN		DATE	
<u>See See attached copy (signature)</u>		<u>11-21-16</u>	
PRINT NAME OF OWNER OR OFFICIAL CUSTODIAN		OWNER OR OFFICIAL CUSTODIAN TITLE	
Mail completed copy to: Missouri Department of Natural Resources Water Protection Program Public Drinking Water Branch P.O. Box 176 Jefferson City, MO 65102-0176 Phone: 800-361-4827 or 573-751-5331 FAX: 573-751-3110			

StL Storage, LLC
Wentzville, MO 63385

The proposed development to be served with the sewer includes a self storage facility known as StL Storage. It will have an office with one employee who works the front desk during normal business hours 9am – 4pm Monday through Friday and 9am – 2pm on Saturday. The office will have one bathroom available to the public. Depending upon traffic, we may expect to have between four to ten customers visit our office location on any given day.

Tim Kende
OWNER
314-749-1798

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UNITED STATES DEPARTMENT OF AGRICULTURE

SEWER EXTENSION DESIGN CERTIFICATION

Answer all questions yes, no, or N/A. Answer N/A only if the question is clearly not applicable to the design of the proposed sewer extension **OR** if a deviation was previously allowed by the department in the approval of Standard Specifications or Standard Detail Sheets.

7.0 SEWER EXTENSION CHECKLIST – Part 1					
	REGULATION		YES	NO	N/A
1.	8.110(6)(C) 8.020(4)	Is there a detailed plan showing tributary area, boundaries, pertinent elevations, topography, existing and proposed facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	8.120(3)	Does the sewer receive only sewage and not combined sewage?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	8.120(4)(B) 8.020(9)(B)	Is the design flow based on 100 gpcd with a peaking factor of 4? Is the design flow based on the design peak hourly flow in accordance with 8.110(4)(C)4?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	8.120(5)(G) 8.020(9)(A)	Does the sewer pipe comply with ASTM standards for sewer pipe?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	8.120(5)(I)4 8.020(9)(A)	Are the joints sealed to prevent infiltration > 100 gal/inch of pipe dia/mile/day for receiving WWTF with a design flow > 22,500 gpd, and >200 gal/inch of pipe dia/mile/day for receiving WWTF with a design flow ≤ 22,500 gpd?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	8.120(5)(D)4 8.120(6)(A) 8.020(9)(C)	Are manholes located at all changes in grade, size or alignment, at all intersections, and at distances of not greater than 400 feet for sewers 15 inches and less, or 500 feet for sewers 18 – 30 inches?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	8.120(5)(A) 8.020(9)(B)	Is the gravity sewer no less than 8" in diameter?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	8.020(9)(B)	Are sewers for schools, resorts and similar establishments, and subdivisions located in rural areas , is the sewer pipe at least 6 inches in diameter, laid at a slope of 0.60 feet/100 feet with appropriate bedding specifications and at least 30" of cover?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	8.120(5) 8.020(9)(B)2	Is all sewer pipe constructed with a slope to obtain mean velocities of not less than 2 feet per second?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	8.120(5)(B) 8.020(9)(B)1	Is the pipe covered with at least 36" of soil if receiving WWTF has a design flow of >22,500 gpd or 30" for a design flow of ≤ 22,500 gpd?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	8.120(5)(D)6	If the sewer is on a 20% or greater slope, is it anchored securely and in accordance with requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	8.120(5)(G)3 8.020(9)(A)2	Is the pipe material adapted to local conditions, and designed to prevent damage from superimposed loads?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	8.120(5)(H)	Is the pipe installation, embedment, and backfill designed to prevent damage to the pipe and its joints?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	8.120(5)(H)5	Is flexible pipe designed to pass a deflection test run 30 days after backfill using a minimum mandrel or ball size of 95% of pipe ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	8.120(5)(H)	Are methods employed to provide adequate control of siltation and erosion during construction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	8.120(6)(C) 8.020(9)(C)	Are manholes at least 48 inches in diameter with a clear opening of 22 inches?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	8.120(6)(A)4 8.020(9)(C)	Where cleanouts are used at the end of a lateral instead of a manhole, they are a minimum diameter of 8 inches, and the lateral length is not greater than 150 feet?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	8.120(6)(D) 8.020(9)(C)	Are the manholes designed and/or specified to have flow channels in the bottom that conforms in shape and slope of the sewer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	8.120(6)(F) 8.020(9)(C)	Are the manholes precast or poured in place concrete with watertight connections and conform to the "Frame and Cover" requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	8.120(6)(G)	Do the specifications include a requirement for inspection and testing for manholes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	8.120(6)(E)1	Are sewers 24 inches or less laid straight between manholes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	8.120(6)(F)1	When a smaller sewer joins a larger one, is the 0.8 depth point of both sewers at the same elevation in the manhole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	8.120(7)	Do the inverted siphons have two barrels with at least a pipe size of 6 inches?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	8.120(8) 8.020(9)(A)5	Is the top of all sewers entering or crossing streams at least 3 feet below the natural stream bottom, perpendicular to the stream, and constructed of cast- or ductile-iron pipe?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	8.120 (9) 8.020(9)(A)5	Are all aerial crossings ductile iron pipe with mechanical joints, supported at all pipe joints and designed to withstand freezing and a 50-year flood?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26.	8.120(10)(C) 8.020(9)(A)	Are sewers and manholes located at least 10 feet horizontally and 18 inches vertically from any existing or proposed water line?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27.	8.120(10) 8.020(9)(A)4	Is the sewer free from physical connections to a potable water supply system and no water pipes come in contact with a sewer manhole?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28.	8.020(9)(B)	If your system is for a subdivision in a metropolitan area, or in a rural area adjacent to a regional system where incorporation into a region is feasible, is the sewer pipe at least 8 inches in diameter, laid at a slope of 0.40 feet/100 feet with appropriate bedding specifications and at least 30" of cover?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 1 I answered YES to questions 1 – 28. YES

8.0 PUMP STATION CHECKLIST – Part 2

	REGULATION		YES	NO	N/A
29.	8.130(3)(A) 8.020(10)(A)	Is the pump station designed to withstand the 100-year flood, and to remain fully operational and accessible during the 25-year flood?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30.	8.130(3)(B) 8.020(10)(A)	Is the dry well completely separate from the wet well and is a suitable and safe means of access provided to each?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31.	8.130(4)(C) 8.020(10)(A)	If the design flow is 1 mgd or less, are there at least 2 pumps or pneumatic ejectors of the same capacity, each capable of handling flows in excess of the expected maximum flow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
32.	8.130(4)(C)	If the design flow is greater than 1 mgd, are there at least 3 pumps capable of handling maximum sewage flow when 1 unit is out-of-service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
33.	8.130(4)(C) 8.020(10)(B)	Are the pumps capable of passing spheres of at least 3 inches in diameter, and connected with at least 4 inch piping?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
34.	8.130(4)(C)	Are the pumps able to operate at varying delivery rates to permit discharging sewage at its rate of delivery?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
35.	8.130(4)(E) 8.020(10)(B)	Are there suitable shutoff and check valves on the discharge line of each pump and shutoff valves on suction line of each wet/dry well pump?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
36.	8.130(4)(E) 8.020(10)(B)	Are check valves between the pump and the shutoff valve, on horizontal portion of the discharge pipe, and outside wet well?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
37.	8.130(4)(F) 8.020(10)(B)	Is the wet well floor sloped a minimum of 1:1 to the bottom?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
38.	8.130(4)(G) 8.020(10)(B)	Is there separate mechanical ventilation for wet and dry well pump pits below the ground surface?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
39.	8.130(4)(H)	Flow Measurement? If yes , how and where is it measured.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
40.	8.130(4)(I)	Does all potable water at station comply with 8.140 (8) B?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
41.	8.130(7) 8.020(10)(B)	Is there an alarm for power failure, pump failure, lag pump, high level, and unauthorized entry?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
42.	8.130(8) 8.020(10)	Overflow prevented or minimized? If yes , indicate method used.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
43.	8.020(10)(B)	Is there 24 hour retention of peak flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
44.	8.130(11)(A) 8.020(9)(D)	Is the force main velocity of ≥ 2 ft/s maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
45.	8.130(11)(B) 8.020(9)(D)	Are air relief valves located at high points in the force main to prevent air locking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
46.	8.130(11)(C) 8.020(9)(D)	Is the force main connection to the manhole less than 2 feet above invert?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
47.	8.130(11)(D) 8.020(9)(D)	Are the force main and fittings designed to withstand normal pressure and surges?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
48.	8.130(11)(E)	Are all aerial crossings supported at all pipe joints and designed to withstand freezing and a 50-year flood?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
49.	8.130(11)(E)	Are all force mains entering or crossing streams constructed of cast- or ductile-iron pipe, cross perpendicular and ≥ 3 feet below the natural stream bottom?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50.	8.130(11)(F)	Is friction loss calculated in the force main design based on the Hazen and Williams formula?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
51.	8.130(11)(G)	Is the force main located at least 10 feet horizontally and 18 inches vertically from any existing or proposed water line?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
52.	8.130(11)(H)	Is the force main properly identified to avoid confusion with water mains?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
53.	8.130	Instructions and Equipment. Sewage pumping stations and their operators should have a complete set of operational instructions, including emergency procedures, maintenance schedules, special tools and spare parts as may be necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Part 2 I answered yes to questions 29 – 53. (N/A if no Pump Stations) YES N/A

9.0 SUCTION LIFT PUMP CHECKLIST – Part 3																					
	REGULATION		YES	NO	N/A																
54.	8.130(5)	Are the suction lift pumps of the self priming or vacuum priming type?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
55.	8.130(5)(A)	Are the self-priming pumps capable of rapid priming and re-priming at the "lead pump on" elevation automatically under design operating conditions? The combined total of dynamic suction lift at the "pump off" elevation and required net positive suction head at design operating conditions shall not exceed twenty-two feet (22') (6.7m).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
56.	8.130(6)(C)	Is the control panel located outside the wet well, protected by a conduit seal, and have a junction box between the controls and the wet well that allows disconnection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
57.	8.130(6)(D)	Are the valves located in a separate pit that can be drained?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
Part 3		I answered yes to questions 54 – 57. (N/A if no Suction Lift Pumps) <input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A																			
9.0 GRINDER PUMP CHECKLIST – Part 4																					
	REGULATION		YES	NO	N/A																
58.	8.130(9)(A) 8.020(9)(B)	Are the grinder units capable of reducing any material to a size that the materials will pass through the pump unit and force main without plugging or clogging?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
59.	8.130(9)(B) 8.020(9)(B)	Is there at least 50 gallons of storage in the grinder pump unit or enough storage to accommodate normal peak flows for periods of eight to twelve (8–12) hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
60.	8.130(9)(C) 8.020(10)(B)	Are there audiovisual alarms capable of alerting the resident and operating personnel in the area for units serving a single home? This may be used in lieu of the alarm system specified in 8.130 (7).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
61.	8.130(9)(D) 8.020(10)(B)	Are gate valves provided on the service line near the common forcemain?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
62.	8.130(9)(E) 8.020(10)(C)	Is the force main cleansing velocity of at least 2 feet per second maintained at the design average flow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
63.	8.130(9)(F)	Is there a suitable method of cleaning the force main whenever the velocity in the force main may be less than two feet (2') per second (0.61m/s) before ultimate development is reached?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
64.	8.130(9)(G)	Are units serviceable and replaceable under wet conditions without electrical hazard to repair personnel and electrical equipment suitable for hazardous locations (National Electrical Code, Class I, Group D, Division 1 location).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
65.	8.130(9)(H) 8.020(9)(D)	Is there 1 standby unit for each 50 units or fraction thereof for WWTF >22,500 gpd provided? For WWTF ≤ 22,500 gpd, is there a 24 hour repair time either by replacement or repair with spare pump units stocked as follows: <table border="0" style="margin-left: 20px;"> <tr> <td style="text-align: right;">Installations</td> <td style="text-align: center;">Spare Units</td> </tr> <tr> <td style="text-align: right;">1 - 10</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: right;">10 - 20</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right;">20 - 40</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: right;">40 - 60</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: right;">60 - 100</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: right;">100 - 200</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: right;">over 200</td> <td style="text-align: center;">3% of installations?</td> </tr> </table>	Installations	Spare Units	1 - 10	1	10 - 20	2	20 - 40	3	40 - 60	4	60 - 100	5	100 - 200	6	over 200	3% of installations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Installations	Spare Units																				
1 - 10	1																				
10 - 20	2																				
20 - 40	3																				
40 - 60	4																				
60 - 100	5																				
100 - 200	6																				
over 200	3% of installations?																				
66.	8.130(9)(I) 8.020(9)(D)	Are provisions in place to avoid interruption of service due to mechanical or power failure by providing standby power, storage capacity or interconnection with another disposal system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																
Part 4		I answered yes to questions 58 – 66. (N/A if no Grinder Pumps) <input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A																			

