

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Drinking Water and Environmental Health Division

Noncommunity Water Supply Application to Construct or Improve Treatment Device

Required under authority of Act 1976 PA 399, as amended.

- Please Read Before Proceeding -

Public water supply treatment is permitted only in cases where an alternative water source is unavailable. If connecting to an existing community water supply or drilling a new well are available options, one shall be used in place of installing a treatment system.

Name of nearest community water system:			
Distance to nearest community water system (specify units):			
Is connection to community water possible?	\Box YES	\Box NO, explain in comments below.	
Is a new well with a safe water source possible?	□ YES	\Box NO, explain in comments below.	
Comments:			

Instructions: Complete items 1 and 2 on this page and 3 through 22 on the following pages. Upon completion of this application, submit the application and all supporting documentation and attachments to the local health department. Failure to provide information or attachments requested may result in the rejection of the application as administratively incomplete.

FACILITY AND INDIVIDUAL'S INFORMATION

1. Facility Information

Write the name, PWSID/WSSN, location and tax ID of the facility that will own and control the proposed water treatment system.

PWSID/WSSN: MI	County:	
Address:	Township:	
Tax ID:	Section:	

2. Owner's Information

Write the name, address, and contact information of the owner who is responsible for compliance regarding this water supply and the proposed treatment system.

Address:	
Email Address:	
Phone Number:	

3. Certified Operator's Information

•	Write the name, operator ID number, certification level, and contact information of the certified operator who will oversee the proposed treatment system and submit monthly operation reports (MOR). An operator holding a D-5 or higher certification level is required prior to final system approval. Name:			
	Email Address:			
	Phone Number:			
	Operator ID Number:			
	Operator Certification Level:			
4.	Treatment System Designer's Information			
	Write the name, professional engineer license number, and contact information of the treatrest system designer. Note that construction plans and specifications are a required attachmen must be prepared, sealed, and signed by a licensed professional engineer (see item 14 and Name:	nent t and t 15).		
	Email Address:			
	Phone Number:			
	License Number:			
W	ATER SUPPLY INFORMATION			
5.	Population a) Daily number of same (non-transient) consumers served by the facility: For example: employees, students, etc.			
	 b) Daily number of transient consumers served by the facility: For example: visitors, patients, customers, etc. 			
	 c) Daily number of consumers residing at the facility for more than six months: For example: individuals who live at the facility. 			
	 d) Total daily number of consumers served by the facility (sum of a, b, and c): For example: Total = a + b + c 			
6.	 Seasonality Is there a portion of the water system that is not in use for part of the year? □ YES □ NO, the entire water system is used year-round. If yes, describe shutdown and startup procedures in the operation and maintenance plan (see item 18). 			
7.	Current Water System a) Water system peak demand as calculated by the local health department:	_gpm		

b) Well pump capacity as provided by the manufacturer: ______ gpm

8. Existing Water Treatment

In the space below, provide a description of any treatment which is currently operating at the facility. This could include water softening, disinfection, iron removal, corrosion control, reverse osmosis, filter cartridges, etc.



9. Current Water Quality

 a) If contaminant removal is an objective of the proposed treatment, attach current untreated water sample results from a certified laboratory (<u>EGLE Laboratory Certification</u>) for the contaminants targeted for removal and record the contaminant name and concentration below. Contaminants targeted for removal could include arsenic, iron, nitrate, PFAS analyte(s), lead, copper, etc. Are sample results from a certified laboratory for the contaminants targeted for removal attached?

 \Box YES \Box NO, the objective of treatment does not include contaminant removal.

Contaminant(s) targeted for removal and concentration of contaminant(s) in untreated water:

 Contaminant Name:
 Concentration (specify units):

 Contaminant Name:
 Concentration (specify units):

- b) Prior to the installation of treatment, information on the distribution systems water quality must be obtained. Sample results for the parameters listed below, and any other relevant parameters, must be provided. Sampling parameters not provided in the list below may be required on a case-by-case basis. Conductivity, pH, and temperature should be analyzed onsite, all other parameters listed below must be analyzed by a certified laboratory (EGLE Laboratory Certification). Sampling locations should be chosen where plumbing materials and water quality represent the facility as a whole. Are laboratory reports and onsite sample results for the parameters listed below attached?
 - \Box YES \Box NO, explain:

- Conductivity (taken onsite)	- Alkalinity	- Copper
- pH (taken onsite)	- Calcium	- Iron
- Temperature (taken onsite)	- Chloride	- Lead

- Sulfate

- Phosphate, silica, and manganese if an adsorptive media is proposed.

PROPOSED TREATMENT SYSTEM INFORMATION

10. Treatment Objective

In the space below, provide the design flow rate, type of treatment, and a detailed description of the proposed treatment. Describe when and where sampling will occur to monitor the system's performance. If onsite sampling devices or kits using EPA approved methods are to be used, include these in the description. **Please note that applications without adequate descriptions may be rejected.** SEE EXAMPLE ON PAGE 5. Attach additional sheets if needed. Design flow rate: gpm

Type of treatment (check all that apply):

□ Chemical Injection, specify:

□ Filtration Treatment, specify:

 \Box Other Treatment, specify:

Treatment Description (use the space below):

If proposing point of use (POU) treatment, describe below the rationale for not pursuing a point of entry (POE) treatment system and how the POU devices will provide protection equivalent to that provided by a POE treatment system.

- EXAMPLE - EXAMPLE - EXAMPLE - EXAMPLE - EXAMPLE - EXAMPLE -

Example Treatment Objective for Chemical Injection and Filtration Treatment The purpose of the proposed treatment is the removal of arsenic to a target concentration of 0.002 mg/L (2 ppb) at the entry point to the distribution system. Two positive displacement chemical feed pumps, rated at 24 gpd at 110 psi, will inject 12.5% sodium hypochlorite solution to both oxidize influent arsenic and continuously regenerate the media. The feed rate of the chemical feed pumps is flow paced with the pumps connected to a flow meter. The targeted free chlorine residual at the entry point to the distribution system is 0.5 to 1.5 mg/L. The chemical feed pumps have been sized to operate in the range of 30 to 70% of their total capacity based on the water supply's peak demand. Chemical usage will be measured by a platform scale under the container. All chemical storage containers will be located over secondary containment pallets.

The sodium hypochlorite solution will be fed 30 feet upstream of two 24" x 72" vessels plumbed in parallel. The vessels will have 3 cubic feet of adsorptive media and 2 cubic feet of gravel underbedding each. The vessels will not backwash/rinse at the same time and backwash will be conducted at night when water usage is lowest. Each vessel has a top mounted control valve which will control flow and initiate the backwash/rinse cycle. Backwash wastewater is sent to the drain where it is then sent to a municipal sanitary sewer. All components which will contact potable water in this proposed treatment system are certified to ANSI/NSF 61 and all chemicals to ANSI/NSF 60.

Operational monitoring will include initial weekly sampling with the test kit shown in this application's supporting documentation. Sampling will occur at the sample taps indicated on the construction plans. Weekly sampling will continue until the treatment system demonstrates stability as determined by the LHD or EGLE.

11. Design Standards and Rules

Were Recommended Standards for Water Works (10 States Standards), Suggested Practice for Water Works, American Water Works Association (AWWA) Guidelines, and the requirements of Act 399 and its administrative rules followed?

 \Box YES \Box NO, if no, briefly explain below which deviations were made and why:

12. Design Specifications for Treatment Systems with Filtration Treatment

Fill in the following treatment design information **only if the proposed treatment system includes filtration treatment**. Mark "NA" where information requested does not apply to the proposed filtration treatment. Leave this section blank if the proposed treatment system does not include filtration treatment. Filtration treatment includes treatment using media-based technologies (e.g., ion exchange resins, adsorptive media, filtration media, cartridge filtration, remineralization media, etc.) or membrane filtration technologies.

- a) Proposed backwash flow rate: _____ gpm
- b) Proposed duration of backwash: min
- c) Proposed rinse cycle flow rate: _____ gpm
- d) Proposed duration of rinse cycle: _____ min
- e) Proposed frequency of media regeneration: _____ gallons
- f) Provide justification below for each item in parts a through e above which were marked as not applicable ("NA"):

- h) Actual pressure in the water system upstream of proposed treatment: _____ psi
- i) If the proposed treatment system generates backwash wastewater, include in an attachment a description of backwashing procedures and the wastewater receiving system. The description should detail when backwash is conducted, if backwash is conducted at times of low water use, if vessels are backwashed separately or at the same time, where backwash wastewater is received (i.e., onsite septic system or municipal sanitary), backwash wastewater holding tanks, and any other applicable details. Backwash wastewater with contaminant concentrations above acceptable groundwater discharge limits must be discharged to a holding tank that is separate from the septic tank when municipal sanitary sewer is unavailable. Is an attachment included describing backwashing procedures and the wastewater receiving system?

 \Box YES \Box NO, the treatment system does not generate backwash wastewater.

13. Design Specifications for Treatment Systems with Chemical Injection

Fill in the following general design information **only if the proposed treatment system includes chemical injection**. Leave this section blank if the proposed treatment system does not include chemical injection. If actual values are unknown, provide an estimate and, in an attachment, explain how the estimated value was determined.

- a) Actual average daily flow rate: _____ gpm
- b) Actual maximum daily flow rate: _____ gpm
- c) Proposed Chemical Product(s):

Fill out the below information. Both sections may not be needed. One section must be filled out for each proposed chemical product. Attach additional sheets if needed.

1. Chemical Name:

Target residual concentration range: mg/L to mg Chemical concentration or strength (mg/L or %):
Chemical concentration or strength (mg/L or %): gph Required chemical feed rate: gph Operating range of chemical feed pump: gph to gph Material of components and surfaces in contact with chemical:
Required chemical feed rate: gph Operating range of chemical feed pump: gph to Material of components and surfaces in contact with chemical:
Operating range of chemical feed pump: gph to gph Material of components and surfaces in contact with chemical:
Material of components and surfaces in contact with chemical
Material el compenente ana canacee in contact man chemical.
This includes any components in direct contact with chemical solution
(e.g., tubing, feed pump, valves, suction line, etc.).
Component Name: Material:
2. Chemical Name:
Target residual concentration: mg/L
Target residual concentration range:mg/L tomg
Chemical concentration or strength (mg/L or %):
Required chemical feed rate: gph
Operating range of chemical feed pump: gph to gph
Material of components and surfaces in contact with chemical:
This includes any components in direct contact with chemical solution
(e.g., tubing, feed pump, valves, suction line, etc.).
Component Name: Material:
Actual pressure of existing system at the proposed point(s) of chemical injection:
Fill out the below information. All lines may not be needed. One line must be filled out for
each proposed point of chemical injection. Attach additional sheets if heeded.
Distance la fuera de la companya de
Figure distance between injection location and first possible point of water consumption:
Fill out the below information. All lines may not be needed. One line must be filled out for
Location of Injection 1 ^o
Location of Injection 2: Distance:

d)

e)

ADDITIONAL ATTACHMENTS AND SUPPORTING DOCUMENTATION

- 14. Construction plans which are prepared, sealed, and signed by a licensed professional engineer (PE) are required for the application review. Plans should include process flow diagrams or piping and instrumentation diagrams showing the placement and connections of the proposed treatment system and its instrumentation within the existing plumbing network, plan views of the room(s) where treatment is proposed, and detailed depictions of the treatment system(s) and all supporting components. Are PE sealed and signed construction plans attached?
- **15.** Construction specifications which are prepared, sealed, and signed by a licensed professional engineer (PE) are required for the application review. Are PE sealed and signed construction specifications attached?

 \Box YES \Box NO, if no, explain below why sealed and signed construction specifications have been included.

16. Attach current documentation of NSF certification from an ANAB accredited third-party certification body (NSF, WQA, UL, IAPMO, ALS, etc.) for all components, coatings, chemical additives, and construction materials in contact with potable water. Are all components, coatings, chemical additives and construction materials ANSI/NSF, or other adequate third party, certified with a copy of certificate attached?

 \Box YES \Box NO, if no, explain below which components do not hold certification and why.

17	. Are manufacturer recommended operating conditions regarding water chemistry and physical
	parameters (pressure, loading rate, flow, backwash rate, etc.) for the treatment system adhered to
	in the design and attached?

□ YES □ NO, explain: _____

- 18. Are manufacturer recommended maintenance activities and corresponding frequencies of maintenance included in an attached operation and maintenance plan describing routine operation, routine maintenance activities, troubleshooting and, if applicable, seasonal operations (see item 6)?
 - □ YES □ NO, explain: _____

19. Are manufacturer specification sheets for the proposed treatment system components, proposed chemicals, and well pump(s) attached with model numbers or model designations indicated where applicable?

□ YES □ NO, explain: _____

20. Are manufacturer provided specification sheets attached for the proposed onsite test kit(s) to be used for measurements of chemical residuals and contaminant concentrations?
 □ YES □ NO, explain:

21. Installation of treatment has the potential to affect a supply's ability to meet its peak instantaneous demand (PID) requirements. The PID is calculated by the local health department and is listed on the well permit. The designer of the treatment system is responsible for showing that the treatment will still allow the well pump(s) to maintain enough total dynamic head (TDH) to meet PID. Calculation methods for TDH are provided in the Michigan Water Well Manual, linked below. This application should include pump curves with the available TDH and operating point for the pump(s) with the treatment installed. Are the well pump curves and calculations demonstrating the TDH of the well pump is adequate to meet PID flowrate attached?

Guidance Documents and Websites:

2022 Recommended Standards for Water Works | Recommended Standards for Water Works

Suggested Practice for Water Works Design, Construction, and Operation | Suggested Practice

NSF International | Certified Products and Systems | NSF

Water Quality Association | Find WQA Certified Products - Water Quality Association

IAPMO | IAPMO R&T Product Listing Directory

UL iQ | <u>UL iQ™ for Certified Water Products</u>

ALS Truesdail | ALS-Truesdail Product Listing Search | ALS Laboratories Irvine

Michigan Water Well Manual | Michigan Water Well Manual

22. Owner's Certification

The owner of the facility or the authorized representative shall complete the owner's certification below.

Ι,		, acting as the owner/owner's
	(print name)	
repre	sentative for	certify the following:
	(print facility na	ime)
1. 2.	I have reviewed and approved this application water supply listed herein and understand that The proposed treatment system, as detailed I this application, is compliant with the requirent administrative rules.	n for water treatment for the noncommunity public at regulated treatment is being proposed. by the plans and specification submitted under nents of Act 399, as amended, and its
3.	I understand that an EGLE recommendation local health department will be required prior existing treatment.	s not a permit and receiving a permit from the to installing this proposed treatment or modifying
4.	I understand that a D5, or higher level, certific operate this proposed treatment system.	ed drinking water operator will be required to

Signature

Date

Phone

- THIS PAGE IS FOR LOCAL HEALTH DEPARTMENT STAFF USE -

Point of Use (POU) Device Adequacy of Quantity and Location

POU devices can be used to provide limited treatment only under certain conditions. When limited treatment POU devices are installed, all consumers, whether transient, nontransient, or residential, must be served treated water (R325.10313(2)d).

If POU treatment devices are proposed in this application, local health department staff shall review the proposal and verify the items below. If review of the proposal reveals concerns, or if the below points cannot be verified, the treatment application should be rejected and a point of entry (POE) treatment system required. Leave this section blank if POU treatment devices are not proposed.

Is the **quantity** of proposed POU treatment devices sufficient to provide easily accessible treated water to all populations served?

 \Box YES, the quantity of POU devices is sufficient. \Box NO

Is the **location** of proposed POU treatment devices sufficient to provide easily accessible treated water to all populations served?

 \Box YES, the location of POU devices is sufficient. \Box NO

Are there any locations which may be used for consumptive purposes where a POU device is not proposed? (If yes, the applicant must propose additional POU devices at these locations.)

□ YES □ NO, POU devices are proposed at all locations used for water consumption.

Are there any concerns with the strategy of implementing POU devices as opposed to a POE treatment system for this facility? (If yes, please explain in the comments below.)

 \Box YES \Box NO, implementing POU devices is adequate for the facility.

Comments:

Signature

Date

- THIS PAGE IS FOR LOCAL HEALTH DEPARTMENT STAFF USE -

Application Administrative Completeness

Local health department (LHD) staff shall review and verify all applications are administratively complete before forwarding the application, attachments, and any supporting documentation to EGLE. For a point of entry treatment application to be considered administratively complete, the application package submitted to EGLE must include peak demand calculations provided by the LHD. Are calculations of peak demand attached?

 \Box YES \Box NO, the proposed treatment system is point of use treatment only.

If you need assistance in determining if this application package is administratively complete, please see the Administrative Completeness Review Checklist in Appendix K09.1 of the Noncommunity Manual or any questions may be directed to your EGLE representative.

By signing below, the local health department staff agrees that they have reviewed the application and all attachments and to the best of their knowledge, the application is administratively complete.

The below signature from the local health department in this section does not indicate approval of the treatment system, nor that the need for treatment has been fully determined.

Sanitarian Name:	 	
Phone Number:		
Email Address:		

Signature

Date

Local health department to submit completed treatment applications to <u>EGLE-DWEHD-</u><u>NCEU@Michigan.gov</u>.

Upon receipt and review of a submitted application, either department may contact the supply owner, operator, or designer for further information.

People with disabilities may request this material in an alternate format by emailing <u>EGLE-Accessibility@Michigan.gov</u> or calling 800-662-9278.

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