NONCOMMUNITY PUBLIC WATER SUPPLY
WATER TREATMENT SYSTEM CONSTRUCTION PERMIT APPLICATION
REQUIRED UNDER AUTHORITY OF ACT 1976 PA 399, AS AMENDED

ARSENIC TREATMENT TYPE: IRON-BASED MEDIA ADSORPTION

Facility
Facility Name _____

Street Address _____

City _____ State _____ Zip _____

Public Water Supply System Number (WSSN) _____

Facility Owner
Name _____ Phone _____

Address _____

City _____ State _____ Zip _____

Email _____

Treatment System Designer
Name _____ Company _____

Address _____

City _____ State _____ Zip _____

Phone _____

Email _____

Please submit the following information in addition to plans, specifications, and an operation and maintenance manual:

Peak demand of the water supply (gpm)
Well pump capacity (gpm)
Number and size of treatment vessels
Type and volume of media (ft^3)
Empty bed contact time (minutes)

Loading rate (gpm/ft^2)
Make and model of control valve
Backwash rate (gpm/vessel & gpm/ft^2)
Backwash frequency (e.g. once a week, every 5,000 gallons)
Backwash discharge volume (gal)
Location & approval for backwash discharge
Description of any chemical injection if applicable
Number of people served per day
List any areas that will not receive treated water such as irrigation, toilet, or process water

Other Treatment
Description and basis of design for other treatment applied such as softening, disinfection, iron removal, etc.

_____

_____

_____

Water Quality (Untreated)

Conductivity _____ (mg/l)	Iron _____ (mg/l)	Silica _____ (mg/l)
Nitrates _____ (mg/l)	Manganese _____ (mg/l)	Phosphate _____ (mg/l)
Sulfates _____ (mg/l)	Total Hardness _____ (mg/l)	Sodium _____ (mg/l)
Sulfides _____ (mg/l)	Total Arsenic _____ (mg/l)	pH _____ (mg/l)
Chlorides _____ (mg/l)	Arsenic III _____ (mg/l)	Other _____ (mg/l)

Plans & Specifications

1) Include plans and specifications identifying:
    a. Service line, storage tank, treatment vessels, piping, valves, pressure gauges, flow meters, sampling locations
    b. Chemical injection location (if applicable)
    c. Waste water receiving system
    d. Mechanical warning alarm
    e. Labeled “Raw Water” and “Treated Water” taps
    f. Make and model of equipment including chemical injection pumps

g. Method of controlling chemical injection or regeneration process (if applicable)
h. Number and size of treatment vessels

Operation & Maintenance

1) Include an operation and maintenance manual including:
   a. Routine operation and maintenance activities
   b. Troubleshooting guide
   c. Monitoring plan
   d. Permanent tags/labels for piping, valves, gauges, sample taps, key components

Certified Operator

Identify an operator certified at or above the D5 level (limited treatment)

Operator Name _____ Cert. No. _____ Level _____

Free Chlorine Residual Field Test Kit Information (If using chlorine): Manufacturer's literature, operation and maintenance manual, and test kit information are to be provided to the certified operator.

Test Kit Manufacturer _____ Model Number _____

Range of Detection _____ Degree of Accuracy _____

Operation Report

Monthly operation report (attached) is to be submitted by the certified operator.

Other Relevant Information

Alternate Source

If another approved water source is available (by connection or drilling a new well) that source shall be used in lieu of treating a source that exceeds drinking water standards

Distance to and name of nearest community water system _____

_____

Is connection to community water possible? Yes _____ No _____

Comments _____

_____

_____

Third Party Standards

Equipment, materials, and additives in contact with potable water must meet American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standards.

1) Provide ANSI/NSF listing if any "Drinking Water Treatment Chemicals" are involved in treatment system (Standard 60).
2) Provide ANSI/NSF product listing for "Drinking Water System Components". (Standard 61, 58, 51…)

Backwash Discharge

Approval may be required for disposal of backwash waste water. Requirements are dependent on the characteristics of the waste water and where the waste water is to be discharged. It is the water supply owner's responsibility to obtain any required wastewater discharge permits.

Backwash water will be discharged to: Community Sewer_____

Septic tank/drainfield_____ Other _____, if other describe location: _____

Provide a copy of the permit application and plans and specifications to the local health department and another copy to:

Drinking Water and Environmental Health Division
Environmental Health Section
Noncommunity Water Supplies Unit
525 West Allegan Street
P.O. Box 30817
Lansing, Michigan 48909-8311

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION
ENVIRONMENTAL HEALTH SECTION

ARSENIC TREATMENT MONTHLY OPERATION REPORT – MEDIA ADSORPTION (WITHOUT CHLORINE)

Facility Name_____ WSSN_____

Certified Operator_____ #_____ Month/Year: _____/_____

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Visual Inspection (Y/N)	Comments	Inspected By
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Operator Signature_____ Date_____

See back for instructions on completing form

Completion of this form is required by Rule 325.11502, 1976 PA 399
Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

Instructions for Completion of Monthly Operation Report: *Greensand (With Permanganate)*

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the "Treated Water" sample tap quarterly and analyze through a certified lab. On the lab slip, state the sampling point is "Treated Water." Allow water to run from the sample tap for at least one minute before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance. If you sample the raw water or backwash for arsenic, clearly label the point description "Raw Water" or "Backwash Water" on the lab slip and write the arsenic result, sampling date, and that it is raw water or backwash water in the comment section below so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water must be used in compliance determinations if the source where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a "Y" in this column every day the treatment system is inspected and sign your name in the "Inspected By" column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Local Health Department (LHD) Name _____

LHD Address _____

_____

LHD Contact Person _____ Phone _____

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description "Raw Water" on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

_____

_____

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION
ENVIRONMENTAL HEALTH SECTION

ARSENIC TREATMENT MONTHLY OPERATION REPORT – MEDIA ADSORPTION (WITH CHLORINE)

Facility Name_____ WSSN_____

Certified Operator_____ #_____ Month/Year: _____/_____

Chlorine Manufacturer/Trade Name_____ Concentration_____%

Day	Flow Meter Reading (Gallons)	Arsenic Treated (mg/L)	Free Chlorine Residual (mg/L)	Visual Inspection (Y/N)	Comments	Inspected By
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Operator Signature_____ Date_____

See back for instructions on completing form

Completion of this form is required by Rule 325.11502, 1976 PA 399

Submit a copy of this MOR to the Local Health Department within 30 days after the end of the month.

EGLE

Instructions for Completion of Monthly Operation Report: *Media Adsorption (With Chlorine)*

Flow Meter Reading: Record treated water meter reading at beginning and end of month. Flow data may be read from the face of a shut off valve or other metering device.

Arsenic Treated: Sample arsenic levels at the "Treated Water" sample tap quarterly and analyze through a certified lab. On the lab slip, state the sampling point is "Treated Water." Allow water to run from the sample tap for at least 30 seconds before filling the sample bottle to get a representative sample. Sampling arsenic levels in the distribution system where water is consumed is not required and not recommended. After getting the arsenic sample result from the lab, write the result in this column for the day that it was obtained. The Maximum Contaminant Level (MCL) for arsenic is 0.010 mg/L which is 10 parts per billion. If the lab results are higher than 0.010 mg/L, contact your local health department to determine what steps to take to maintain compliance. If you sample the raw water or backwash for arsenic, clearly label the point description "Raw Water" or "Backwash Water" on the lab slip and write the arsenic result, sampling date, and that it is raw water or backwash water in the comment section below so they are not used in determining compliance with the arsenic MCL. Arsenic samples from untreated water must be used in compliance determinations if the source where the sample is from is not clear and that can cause an MCL violation even though the treated water may meet the arsenic MCL.

Free Chlorine Residual: Analyze the free chlorine residual in treated water at the treated water sample tap with a DPD reagent field test kit at least weekly and record the results. Two field test kits that are approved for use are Hach's Free and Total Chlorine Test Strips, 0-10 mg/L, which is product # 2745050 at hach.com or Hach's Chlorine (Free) Test Kit, Model CN-66F, Color Disc, 0.1-3.5 mg/L which is product # 223102 at Hach.com. Other test kits can also be approved for use. Free chlorine residual should be maintain at about 0.5 – 1.0 mg/L and is required to stay below 4.0 mg/L.

Visual Inspection: Visually inspect the treatment system weekly to verify the treatment unit is operating properly. Mark a "Y" in this column every day the treatment system is inspected and sign your name in the "Inspected By" column for that day.

Comments: Record maintenance or any unusual events. See below for additional space.

Inspected By: Person obtaining arsenic sample, changing cartridge filter, or inspecting system signs for that day. Signatures are not needed on days a sample, cartridge filter change, or inspection has not occurred.

Operator Signature: Certified operator signs and dates bottom of MOR attesting to the submitted information in the report and then submits the MOR to their local health department within 30 days after the end of the month. Submittal of an MOR is required for every month the treatment system is in operation even if an arsenic sample is not taken that month.

Local Health Department (LHD) Name _____

LHD Address _____

_____

LHD Contact Person _____ Phone _____

Arsenic Untreated: Sampling the raw water (untreated) arsenic level is not required but is allowed if the water supply wants information about raw water arsenic levels. If you do sample the raw water for arsenic, clearly label the point description "Raw Water" on the lab slip and write the sampling date, arsenic result, and that it is raw water in the comment section below so they are not used in determining compliance with the arsenic MCL.

Additional Comments _____

_____

Submit a copy of the MOR to the Local Health Department within 30 days after the end of the month