

Public Water Supply Operations Handbook

6.5.2 Nitrate

6.5.2.1 MCL Exceedance at Transient Non-Community Systems

6.5.2.1a Monitoring Requirements

6.5.2.1a(i) Initial Monitoring: New Wells, Reconstructed Wells, and Newly Inventoried Wells

New wells, including replacement wells, serving existing or new transient non-community (TN) systems are required to be tested for nitrate prior to putting online as provided in s. NR 809.115(4)(a), Wis. Adm. Code. (Note: Monitoring and reporting of sample results may occur after the system has been activated in the drinking water data system.) Reconstructed wells serving TN systems and newly inventoried TN wells (at a newly inventoried TN system or an additional well serving a TN system that was not previously added to the inventory) shall be sampled as soon as possible.

If the nitrate sample result is ≥ 10.5 mg/L, a confirmation sample shall be collected. If the average of the compliance sample and the confirmation sample exceeds the maximum contaminant levels (MCL) (i.e., is ≥ 10.5 mg/L for nitrate), the well shall be evaluated according to the requirements outlined in section 6.5.2.1f *Discretion to Allow Up to 20.49 mg/L Nitrate* of this guidance. There may be instances when a well with high nitrate should not be put online. In making the decision to allow a TN system with nitrate concentrations greater than the MCL to go online, all other options for potable water shall be evaluated first, including casing to a deeper depth. This is a case-by-case judgment to be made by the Drinking Water & Groundwater Regional Supervisor and/or Public Water Supply Section Chief. The decision shall be documented through the same enforcement process used with existing TNs that have a confirmed nitrate MCL violation but that are allowed to continue to operate.

6.5.2.1a(ii) Routine Monitoring

Routine annual nitrate samples are required to be collected between January 1st and September 30th of each year at non-contract county TN systems. TN systems in contract counties have until December 31st. TN systems on quarterly monitoring are required to sample prior to the end of each 3-month period ending on March 31st, June 30th, September 30th, and December 31st, regardless of whether they are in a contract county or not.

Seasonal TN systems are required to sample for nitrate as specified in the following:

Public Water Supply Operations Handbook

Nitrate Monitoring Requirements for Seasonal TN PWS		
Routine annual nitrate		
Bacteria Requirements	Contract County	Non-Contract County
Quarterly, monthly bacteria	The month before the opening date and the last day of the final month the system operates in.	The month before opening and the last day of the final month the system operates in or until Sept. 30th if the system is open past that date.
Annual bacteria		The month prior, month during and month after the opening date
Quarterly nitrate: Every quarter the system is open. Beginning with month open until last day of quarter or season end month.		

6.5.2.1a(iii) MCL Exceedance during Routine Monitoring - Confirmation Samples

1. *TN systems in the County Contract Program*

If a TN system is not already approved to operate up to 20.49 mg/L for nitrate (See section 6.5.2.1f Discretion to Allow Up to 20.49 mg/L Nitrate) or does not have an ongoing MCL violation, and they have a nitrate sample result \geq 10.5 mg/L, county staff shall collect a confirmation sample within 24 hours of receiving the results or instruct the owner to collect the confirmation sample if the county staff are unable to do so. County staff shall inform Drinking Water and Groundwater (DG) field staff of the exceedance. DG field staff shall check to verify that the confirmation sample is collected. If it is not possible to collect a confirmation sample within 24 hours of the system learning of the exceedance, the TN system shall immediately post a Tier 1 public notice (PN) provided by county staff. Delivery methods include hand-delivery, e-mail, overnight mail or fax the system the Tier 1 PN to post until the confirmation sample result is received. The confirmation sample shall be collected by the county or the system if the county is unable to do so within 14 days per s. NR 809.115 (6)(b), Wis. Adm. Code.

If the average of the compliance sample and the confirmation sample is \geq 10.5 mg/L, county staff shall hand-deliver or mail laminated warning placards for continuous posting. Public notices shall be in a language understood by the water supply users.

2. *TN Systems Covered by DG Field Staff*

The first time a system has a nitrate sample result \geq 10.5 mg/L, DG field staff shall instruct the system owner to collect a confirmation sample. If a system is unable to collect a confirmation sample within 24 hours, the system shall post a Tier 1 PN

Public Water Supply Operations Handbook

immediately upon notification of the exceedance and collect the confirmation sample within 14 days according to s. NR 809.115 (6)(b), Wis. Adm. Code. DG field staff shall hand-deliver, e-mail, or fax the system owner or representative the Tier 1 PN to post until the result of the confirmation sample is received. If the average of the compliance sample and the confirmation sample is ≥ 10.5 mg/L, DG field staff shall hand-deliver or mail laminated warning placards for continuous posting. Public notices shall be in a language understood by the water supply users.

3. County health department officials should be notified of high nitrate samples, including the initial sample result ≥ 10.5 mg/L and the confirmation results. If the system is in a contract county, the health department may already be aware of the results.

6.5.2.1a(iv) Increased Monitoring

TN systems with nitrate results ≥ 5.0 mg/L may be placed on quarterly monitoring on a case-by-case basis. Quarterly sampling may be necessary to assess rapidly rising nitrate levels or seasonal variations. It may also be done while assessing whether low nitrate water is available. A system with a compliance or confirmation sample result ≥ 20.5 mg/L shall be placed on quarterly monitoring. [Note: If a compliance sample is ≥ 20.5 mg/L, a confirmation sample must be collected. If the average of the compliance sample and the confirmation sample is ≥ 20.5 mg/L, the system may no longer serve water to the public. (See section 6.5.2.1h Nitrate Violations > 20.5 mg/L and Facilities that fail to satisfy conditions of NR 809.11(3) for further guidance.)

6.5.2.1b Sample Sites, Collection, Analysis, Reporting, and Review

1. Locations of all sample sites shall be documented on the system's monitoring site plan. DG field staff and county staff shall verify that there are updated monitoring plans on file. These may need to be created or updated during the sanitary survey. During the sanitary survey the DG field staff or county staff shall ask about the procedures used for sample collection if the person collecting the samples is present. In some instances, it may be helpful to ask the sampler to collect their samples during the survey. Make sure the sampling procedure is appropriate for each type of sample collected (raw water, entry point, distribution).
2. All compliance/confirmation/investigative samples shall be analyzed by SDWA certified laboratories that report analytical results electronically to the Department. Operational monitoring samples (field nitrate, alkalinity, hardness, pH, etc.) and pumpage data shall be collected/analyzed using Department approved field test methods and may be reported to the Department using the electronic monthly

Public Water Supply Operations Handbook

operating report (EMOR) web application.

3. DG field staff or county staff shall review compliance and operational monitoring results for each entry point along with any raw water data available for the well(s) serving the corresponding entry point. Follow the guidance below if compliance monitoring samples indicate a MCL violation has occurred. If water quality has changed over time but has not resulted in a MCL violation, note the trends, and alert the PWS about this situation. For example, if nitrate results have steadily increased over the years and are approaching the nitrate MCL, it is recommended DG field staff or county staff notify the system owner and provide an explanation for required action(s) if a result exceeds the MCL.

6.5.2.1c Nitrate MCL Violation Determination and Enforcement

Initial compliance is based on 1 sample if the nitrate result is < 10.5 mg/L. Systems are determined to be out of compliance and a violation is generated if the average of the first sample with a result ≥ 10.5 mg/L and a confirmation sample is ≥ 10.5 mg/L nitrate. Within 24 hours of receiving the results, systems with a nitrate MCL violation shall provide an alternate safe water supply for infants 6 months and younger and any female who is or may become pregnant

Within 24 hours of receiving the confirmation sample results, field DG staff or county staff shall send a PN letter to the owner of the TN system for a nitrate MCL violation so the system can issue a Tier 1 PN. The PN letter shall explain the violation, the health effects of high nitrates, and PN posting requirements. DG field staff will complete an Environmental Enforcement request form asking environmental enforcement staff to send the system a NOV to schedule an enforcement conference.

If a TN system fails to post the PN or provide water from a known safe source to infants 6 months and younger and any female who is or may become pregnant within 24 hours of the MCL violation, secondary enforcement shall be initiated. For systems covered by county staff, if secondary enforcement is necessary, county staff should refer the facility to the DNR.

If 2 consecutive annual samples or 4 consecutive quarterly samples for nitrate are ≤ 10.49 mg/L, the system returns to compliance with the MCL for nitrate and the PN may be discontinued. A return to compliance letter should be sent by county staff or DG field staff dependent on if the system is covered by a county contract.

6.5.2.1d Monitoring/Reporting Violations and Enforcement

TN systems on annual or quarterly monitoring have a monitoring and reporting (M/R) violation when they do not collect and/or report a required sample. DG field staff or county staff are responsible for verifying the M/R violations and sending a Notice-of-

Public Water Supply Operations Handbook

Noncompliance (NON) and a PN (including a certification statement) within 30 days of the end of the compliance period in which the sample was to be collected.

DG field staff should consult with the regional supervisor and central office staff to consider asking environmental enforcement staff to send a system a Notice of Violation (NOV) to schedule an enforcement conference for additional monitoring and reporting violations. Specific situations where NOV's should be considered include:

- 1) If a system on annual monitoring fails to meet the deadlines in the NON, or misses any additional sampling during the following calendar year
- 2) If a system on quarterly monitoring fails to meet the deadlines in the NON, or misses 2 or more samples during the current or following calendar year

6.5.2.1e Public Notice Posting Requirements, Violations and Enforcement

TN systems are required to notify the public in the following timeframes:

1. Within 24 hours of being informed of a nitrate MCL violation as indicated in s. NR 809.951 (2), Wis. Adm. Code, or
2. Immediately if a confirmation sample is not collected within 24 hours of the water supplier being notified of the result of a sample ≥ 10.5 mg/L.

Posting is required as long the violation continues. When possible but at least every 5 years during sanitary surveys, DG field staff or county staff shall conduct on-site verification of posting of PNs. DG field staff or county staff should confirm and enforce posting requirements for the nitrate placard(s), at all following locations:

1. Post at all drinking water outlets, i.e., all sinks, drinking fountains, etc.
2. Restaurants and taverns where tap water is served, a notice shall be posted at each table or in menus.
3. Motels/hotels shall place laminated warning placards in every room at consumable locations.

If at any time a TN system on continuous operation with nitrate levels between 10.5 and 20.49 mg/L is not properly posting notice for the nitrate exceedance, the owner no longer meets the requirements for continuous operations under s. NR 809.11(3), Wis. Adm. Code, and the system must take corrective action to comply with the nitrate MCL. DG staff should consult with regional supervisor to determine next steps.

When a system fails to PN a MCL violation, enforcement action shall be initiated. If secondary enforcement is necessary, the county should refer the facility to the DNR specialist. DG field staff shall prepare a secondary enforcement request for a NOV and enforcement conference.

When a system fails to post a Tier 3 PN for a M/R violation, either a NON or NOV based on the compliance history of the system shall be issued.

Public Water Supply Operations Handbook

Section NR 809.80(5), Wis. Adm. Code requires that the system submit a signed certification to the Department within 10 days of issuing the PN documenting it has fully complied with the PN regulations. The TN system shall include with this certification a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the water system in another manner approved by the Department.

6.5.2.1f Discretion to Allow Up to 20.49 mg/L Nitrate

The Department has discretion under s. NR 809.11(3), Wis. Adm. Code, to allow a TN system with nitrate concentrations ≤ 20.49 mg/L to continue to provide water for consumption. Section NR 809.11(3), Wis. Adm. Code states:

OPERATION WITH NITRATES NOT EXCEEDING 20 MG/L. At the discretion of the department, nitrate as nitrogen levels not to exceed 20 mg/L may be allowed in a non-community water system if the water supplier demonstrates all the following to the satisfaction of the department:

- a) *The water will not be available to children under 6 months of age or any female who is or may become pregnant.*
- b) *The water supplier meets the public notification requirements under s.NR 809.958, including continuous posting of the fact that nitrate as nitrogen levels exceed 10 mg/L and the potential health effects of exposure.*
- c) *Local and state public health authorities will be notified annually of nitrate as nitrogen levels that exceed 10 mg/L.*
- d) *A supply of bacteriologically safe drinking water, containing less than 10 mg/L nitrate as nitrogen, is provided for infants less than 6 months of age and any female who is or may become pregnant.*
- e) *No adverse health effects will result.*

The department is phasing out continuing operation at TN systems. Beginning April 2023, the following apply to TNs with ongoing nitrate MCL exceedances (≥ 10.5 mg/L) or a new nitrate MCL exceedance.

- 1) Systems with an ongoing MCL violation (i.e., those already on continuing operation under s. NR 809.11(3), Wis. Adm. Code) will have 3 years to voluntarily evaluate their options. If they decide to take action to reduce nitrate, they must follow the tiered approach for corrective actions and must consider feasibility of a well or connecting to an existing system before treatment will be allowed. DG field staff should assist these systems and help them evaluate options.
- 2) All systems with a new nitrate MCL exceedance will be referred to EE for enforcement. When appropriate, the system may be given up to 3 years to return

Public Water Supply Operations Handbook

to compliance. The systems will be required to use the tiered approach for corrective actions (i.e., consider a new well, then treatment).

At the end of April 2026, all systems that were on continuing operation that have not voluntarily returned to compliance will be prioritized for enforcement. Prioritization and ranking of systems will be made using a DG Management Team (DGMT) approved methodology that will likely include factors such as service type, population served and if the population is transient vs non-transient, length of time the system has been over the MCL, and trends or averages in nitrate concentrations. An example of a facility that would likely rank high for prioritization would be one that serves a day care with more than 25 people, which includes a portion of non-transient consumers, and has nitrate concentrations that are approaching 20 mg/L.

DG management will develop a schedule for handling the prioritized systems that will allow sufficient time for implementation based on staff resources. The schedule will be reviewed and potentially revised and approved by DGMT on an annual basis. Central office staff will assist with the development of the annual list by providing updated information on the remaining systems including recent sample results and any changes in population served and system type.

For systems that were on continuing operation before April 2023, the department is using its discretion to allow these systems up to 3 years to evaluate their options and take voluntary action to reduce the nitrate levels in their water. However, the decision to allow these systems to continue to operate with nitrate between 10.5 and 20.49 mg/L is not automatic. The system must continue to comply with ch. NR 812, Wis. Adm. Code, and meet all the following requirements:

- (a) The water will not be available to children under 6 months of age or any female who is or may become pregnant.*
- (b) The water supplier meets the public notification requirements under s. NR 809.958, including continuous posting of the fact that nitrate as nitrogen levels exceed 10 mg/L and the potential health effects of exposure.*
- (c) Local and state public health authorities will be notified annually of nitrate as nitrogen levels that exceed 10 mg/L.*
- (d) A supply of bacteriologically safe drinking water, containing less than 10 mg/L nitrate as nitrogen, is provided for infants less than 6 months of age and any female who is or may become pregnant.*
- (e) No adverse health effects will result.*

When systems no longer meet all these conditions, DG staff shall require the system to take immediate corrective action to provide a code-compliant water source and shall be

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Public Water Supply Operations Handbook

instructed to follow the tiered approach outlined in section 6.5.2.1i *Assessment and Recommendation*. The decision to allow a TN system to continue to provide water for consumption is a department decision and may be made with consultation from the county staff in contract counties.

6.5.2.1f(i) Determine Compliance with Ch. NR 812, Wis. Adm. Code

When a nitrate MCL violation occurs, DG field staff or county staff review the well construction report and the last sanitary survey or other inspection report to see if the contamination could be due to construction deficiencies. If there are code violations, DG field staff or county staff must require appropriate corrective actions.

For inspections older than 3 years, it is recommended that DG field staff or county staff conduct a complete sanitary survey on the system; it may also be useful to look for local land use changes. For a problem well in a contract county that has been referred by the county staff to DNR, DG field staff and county staff should perform a joint inspection to determine whether the well meets the requirements of Ch. NR 812, Wis. Adm. Code.

6.5.2.1f(ii) Conditions to Serve High Nitrate Water: 10.5 – 20.49 mg/L Nitrate

Between April 2023 and April 2026, DG field staff may decide that system with a new nitrate MCL should be permitted to continue operations and continue to provide water for consumption for up to 3 years as they proceed through the enforcement process and take corrective action to return to compliance. If appropriate, concurrence should be obtained from the DG field supervisor. This decision may be made following consultation with the county staff in contract counties where appropriate.

A primary factor to consider when making the decision is the population served by the facility. Facilities which routinely serve or have the opportunity to serve infants or any female who is or may become pregnant may have difficulty meeting the requirements of s. NR 809.11(3).

If the Department determines the system may continue to operate for a limited time, DG field staff or county staff will advise the owner of the conditions in writing. Starting in 2023, systems with a new MCL will be given 3 years to evaluate their options for returning to compliance. The timeline and information for evaluating options will be provided to the facility. Additional conditional requirements should be stated in the NOV. DG field staff should use templates specific for this interim period of continuing operation. The standard conditions are as follows:

1. Well construction and pump installation shall comply with Ch. NR 812, Wis. Adm. Code.
2. TN system owners shall comply with all monitoring requirements.

Public Water Supply Operations Handbook

3. The requirements of NR 809.11(3) (a)-(e)
 - a) The water will not be available to children under 6 months of age or any female who is or may become pregnant.
 - b) The water supplier meets the public notification requirements under s.NR 809.958, including continuous posting of the fact that nitrate as nitrogen levels exceed 10 mg/L and the potential health effects of exposure.
 - c) Local and state public health authorities will be notified annually of nitrate as nitrogen levels that exceed 10 mg/L.
 - d) A supply of bacteriologically safe drinking water, containing less than 10 mg/L nitrate as nitrogen, is provided for infants less than 6 months of age and any female who is or may become pregnant.
 - e) No adverse health effects will result.

6.5.2.1h Nitrate Violations > 20.5 mg/L and Facilities that fail to satisfy conditions of NR 809.11(3)

If a compliance sample is ≥ 20.5 mg/L, a confirmation sample shall be collected within 24 hours. If a system fails to take a confirmation sample within 24 hours, the system must immediately issue a Tier 1 PN and collect the sample within 14 days of notification of the result. If the average of the compliance and the confirmation sample is ≥ 20.5 mg/L, DG field staff shall prepare a secondary enforcement request for the EE program to initiate secondary enforcement steps. The system must also issue a Tier 1 PN for the nitrate MCL violation.

If the average of the compliance and confirmation is ≤ 20.5 mg/L, DG field staff or county staff shall instruct the owner to conduct quarterly sampling for one year and evaluate the results. If the average of any 2 samples collected during a one-year period is ≥ 20.5 mg/L, DG field staff shall prepare a secondary enforcement request for the EE program to initiate secondary enforcement steps.

For nitrate violations ≥ 20.5 mg/L, the owner shall take all the following actions while the well remains online:

1. Within 24 hours of receiving the results, provide an alternative safe source of water to all consumers of water;
2. Continue to PN until the violation is resolved;
3. Continue quarterly sampling until the violation is resolved. If a quarterly sample exceeds the nitrate MCL (i.e., ≥ 10.5 mg/L), the system must take a confirmation sample. If the average of the quarterly sample and the confirmation sample exceeds the MCL (i.e., ≥ 10.5 mg/L), DG field staff will issue a letter and new PN. The system must complete, sign, and post the new PN, which replaces the previous notice, and return a copy to DNR.

6.5.2.1i Assessment and Recommendation

DG field staff shall advise owners to use a tiered approach for evaluating options to

Public Water Supply Operations Handbook

return to compliance. At a minimum, owners shall be required to evaluate 1) construction of a replacement well, 2) reconstruction of an existing well, and 3) connection to an alternate safe water source, including source water blending. Treatment may only be considered *after* the Department determines that these three preferred options are not feasible.

1. Resolution Process

Field EE and DG field staff shall schedule an enforcement conference and meet with the owner to discuss compliance options as soon as the Department becomes aware that a TN system no longer qualifies for continuing operation because the average of an initial and a confirmation sample exceeds 20 mg/L or the system no longer meets the requirements of s. NR 809.11(3), Wis. Adm. Code.

Beginning in April 2023, all new nitrate MCLs (i.e., confirmed exceedances of ≥ 10.5 mg/L nitrate) will also be expected to follow the enforcement process. DG field staff must explain the compliance options to the owner and ask the owner to sign a consent order. A consent order shall be required used to establish a time frame for owners to investigate their compliance options and submit a report to the Department that proposes a corrective action plan [Note: Please refer to the consent order template for more information on the tiered approach to determine a corrective action]. The consent order shall also establish a time frame for the system owner to implement the corrective action plan and ultimately return to compliance. DG field staff and EE staff shall track enforcement action, milestone dates for the consent order, and request DG Environmental Program Associates update the DWS when new wells are constructed, when treatment is installed, and actions are taken that address violations. In some cases, a system owner may be unwilling to comply and an administrative order or referral to the Department of Justice may be required.

The owner should use the following evaluation process and the *Corrective Action Evaluation Review Sheet* to document the investigation of the different options and the proposed option for corrective action. DG field staff shall follow up with the system owner if the *Corrective Action Evaluation Review Sheet* and supporting documentation is not complete or if there are questions with regards to the contents of the submitted data. DG field staff may work with central office groundwater staff when reviewing well recommendations. DG field staff shall respond to the system owner with a written decision.

2. Evaluation Process for the Preferred Options

a) *Constructing/reconstructing a well*

A system is required to determine if they can construct a new well or reconstruct an existing well to obtain a source that meets drinking water standards. The owner, with support from staff, shall investigate to see if nitrate and bacteriological sample results

Public Water Supply Operations Handbook

and well construction data are available for nearby private or public wells. Potential sources for this information are neighboring well owners, USGS or other data bases, or well drillers. DG field staff may request assistance from central office DG and Groundwater staff. DG field staff may access public water and GRN data bases to determine if safe water exists at a lower depth. DG field staff may compare well construction reports, geologic data, and land use activities of wells in the surrounding area. In some cases, it may be advantageous for a representative of the TN system to collect samples from surrounding private wells. DG field staff should provide the owner with available information on sampling history, well construction, geologic data (aquifers available, groundwater flow direction) and land use practices. The information obtained during this evaluation may be used to determine whether construction of a new well or reconstruction of an existing well are feasible options, as required by s. NR 812.37(2)(e), Wis. Adm. Code.

If the data shows that construction or reconstruction is an option, the owner shall obtain estimates on construction of a replacement well, or reconstruction of an existing well. In situations where no data is available, DG field staff shall discuss/advise the system owner of possible options for obtaining data; however, the Department does not have the resources available to collect data on behalf of the system owner.

b. Connecting to an alternate safe water source

The owner shall evaluate whether it is feasible to connect to an alternate safe water source, such as a municipal water system, or other public water system, or another well that complies with Ch. NR 812, Wis. Adm. Code. If it is feasible, the owner shall obtain estimates on the cost of connecting to the alternate water source.

After reviewing the evaluation sheet and supporting material including the cost analysis, DG field staff will determine whether some or all the options are feasible. If all the options are feasible, the owner may select and implement the most cost-effective approach (i.e., installation of a new well, reconstruction of an existing well, or connecting to an alternate safe source of water). If DG field staff determines that the preferred options are not feasible, DG field staff shall advise the system owner to evaluate treatment options.

c. Consideration of Installation of Treatment

System owners who evaluate treatment installation as a means of returning to compliance must ensure the well complies with all construction standards in ch. NR 812, Wis. Adm. Code. Per s. NR 812.37(2)(f), Wis. Adm. Code, “[t]he installation of a water treatment device shall supplement and not replace proper well location, construction and water supply protection.” TN system owners should consider and understand that if a treatment system fails, consumers may be exposed to extremely high concentrations of nitrate without warning.

Treatment options shall be a “best available technology” (defined in s. NR 809.04(2)), and cost and efficacy shall be considered when evaluating options. Treatment devices may only be installed after review and approval by the Department of Safety and

Public Water Supply Operations Handbook

Professional Services (DSPS). It is recommended that field DG staff review long-term maintenance obligations and increased frequency of monitoring (quarterly at a minimum) required when treatment is used to achieve compliance.

The Department and DSPS must establish the conditions of treatment installation prior to the installation of treatment for MCL compliance at a TN system. A request should be made to central office staff to generate the additional monitoring requirements in the DWS.

- a. Installation of point-of-entry treatment
 - i. Point-of-entry (POE) treatment systems treat all raw water before it enters the distribution system. Treatment requires ongoing operation and maintenance after installation and will involve increased monitoring requirements for the duration of the time the treatment is needed to comply with all the requirements of Ch. NR 809 requirements. In addition, the Department shall establish monitoring requirements that assure proper operation and maintenance of the treatment system. The TN system shall be required to monitor nitrate concentrations in treated water quarterly and collect raw water samples no less than annually. The DWS shall be updated to indicate that a treatment device is being used and to generate the additional monitoring requirements.
 - ii. In certain situations, the Department may determine that a system does not need to treat all incoming raw water with POE treatment. These situations may include non-contact cooling water, water used for irrigation, etc. However, appropriate cross-connection control measures are required between any potable and non-potable water piping.

6.5.2.1j Return to Compliance Determination

1. Replacement Well or Reconstructed Well

If a TN system with a MCL violation disconnects from a well with high nitrate and connects to a new well, the system shall be considered in compliance when 4 consecutive quarterly sample results following completion of any corrective action is <10.50 mg/L nitrate MCL. The system shall take a confirmation sample per s. 809.115(4)(f), Wis. Adm. Code, if a compliance sample result is ≥ 10.5 mg/L. If the average of the initial and confirmation sample result is ≥ 10.5 mg/L, a new violation is created and further action is required. [Note: New wells require a nitrate and nitrite sample. A new well at a TN system should also complete 4 consecutive quarters of monitoring for bacteria if it operates annually and monthly monitoring if it operates seasonally.]

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Public Water Supply Operations Handbook

If a TN system with a MCL violation reconstructs a well with high nitrate, the system shall be considered in compliance when 4 consecutive quarterly sample results following completion of any corrective action is <10.50 mg/L nitrate MCL.

2. Connection to an Alternate Source

A TN system may return to compliance by connecting to an alternate water source, if that source meets all the following conditions:

- a. The source is located within a compliant public water system or is a well that complies with Ch. NR 812, Wis. Adm. Code
- b. Nitrate concentration is <10.5 mg/L
- c. The source complies with applicable NR 809 water standard requirements
- d. No total coliform or *E. coli* bacteria is present

The system is considered in compliance once it is disconnected from the non-complying source, is connected to the compliant system or source, and the non-complying well has been properly filled and sealed.

3. Point of Entry Treatment

If a TN system installs DSPS site-specific approved POE treatment, the system shall be considered in compliance when the results of four consecutive quarterly entry point samples taken after treatment device installation are reliably and consistently < 10.5 mg/L. If any of the four consecutive quarterly entry point nitrate samples are \geq 10.5 mg/L, the system shall take an entry point nitrate confirmation sample per s. 809.115(4)(f), Wis. Adm. Code. If the average of the initial quarterly nitrate sample and the confirmation sample is \geq 10.5 mg/L, the system may not be returned to compliance and additional corrective action(s) shall be taken.

6.5.2.1k TN Systems that voluntarily install treatment

Some TN system owners have opted to voluntarily install treatment to reduce nitrates. Per s. NR 812.37(3)(d), any water treatment device intended to prevent contaminant levels in excess of primary drinking water standard in a non-community water system must obtain site-specific approval from by the Department and DSPS prior to installation.

If a TN system owner installs treatment without going through the Department approval process (tiered approach in section 6.5.2.1i Assessment and Recommendation), the Department shall advise them that they must meet the conditions of s. NR 809.11(3), Wis. Adm. Code to continue to operate and will begin the enforcement process outlined in 6.5.2.1 6.5.2.1h Nitrate Violations > 20.5 mg/L and Facilities that fail to satisfy conditions of NR 809.11(3). Additional corrective actions may be required if nitrate levels are confirmed to exceed the MCL or 20.5 mg/L. The department shall require

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Public Water Supply Operations Handbook

these systems to collect compliance samples for nitrates *upstream of* the unapproved treatment devices.