



GROUNDWATER QUALITY

GROUND WATER MANAGEMENT AREA

Since 1985, the Lower Platte North NRD has been monitoring nitrate levels across the district. In certain areas of the district, nitrate levels have already exceeded the health standard of 10 parts per million, and in other areas contamination seems to be on the rise. This was the major impetus for the creation of the Ground Water Management Area in 1997.

Excessive nitrates in drinking water, often linked to irrigated row crop production, can endanger pregnant women and infants by interfering with the oxygen-carrying capacity of the blood. Some studies have also linked excessive nitrate consumption with increased incidence of gastrointestinal cancer, but these reports remain unconfirmed.

To help correct the rising nitrate levels in our groundwater, the NRD has set requirements for producers who use fertilizer in the district.

Currently, the majority of the Management Area is in Phase I, which emphasizes education about fertilizer use. There are two Phase II areas near Richland/Schuyler and Bellwood, and a Phase III area will go into effect in the Richland/Schuyler area in September 2015.

PHASE I REQUIREMENTS

- Operators using any type of fertilizer must become certified every 4 years.
- Water well permits are required for all new and replacement wells with a capacity greater than 50 gallons per minute. In certain designated areas, well permits may also be required for wells pumping less than 50 gallons per minute (please contact the NRD for details).
- The amount of organic fertilizer (liquid or dried manure, sludge, or composted organic waste) allowed per acre per year will be based on the method of collection and storage, land application method, type of crops or cover crop, soil types, landscape features, source of manure, and previous manure application rates.
- Fall application of commercial nitrogen fertilizer is prohibited on non-sandy soils before November 1.
- Fall and winter application of commercial nitrogen fertilizer is prohibited on sandy soils until March 1.

Encouraged but not required:

- Groundwater analysis for nitrate-nitrogen (NO₃) content performed at least once every four years for irrigation, municipal and industrial wells, and reported to the NRD by Dec. 31 of the year the analysis was performed.
- Soil samples taken in the root zone (to a depth of 3 feet) and reported to the NRD by Dec. 31 each year.
- Fertilizer application report (both commercial and organic fertilizers) made to NRD by Dec. 31 each year.



GROUNDWATER QUALITY (CONTINUED)

ADDITIONAL REQUIREMENTS FOR PHASE II

(Nitrate Nitrogen Levels of 8-10 Parts Per Million After Jan. 1, 2001)

- All requirements from Phase I apply.
- Groundwater analysis, deep soil samples and fertilizer application reports required annually. (Report forms are available for download in PDF format here.)
- Commercial nitrogen fertilizer only permitted on non-sandy soils from Nov. 1 to March 1 if approved inhibitor is used at recommended rates.
- Operators applying commercial fertilizer from Nov. 1 to March 1 must furnish records from their dealer that an approved inhibitor was used as recommended.
- Use of fertilizer calibration meters will be encouraged for all fertilizer applications.
- Water applications must be monitored to allow for better management of fertilizer application and to control leaching of nitrate (phased in over 4 years).
- The amount of organic fertilizer (liquid or dried manure, sludge, or composted organic waste) allowed per acre per year will be based on the method of collection and storage, land application method, types of crops or cover crop, soil types, landscape features, source of manure and previous manure application rates. The amount and timing of applications must be adjusted to the nitrate concentration in the soil profile and groundwater content. Application will be allowed on frozen soils on a site-by-site basis only.

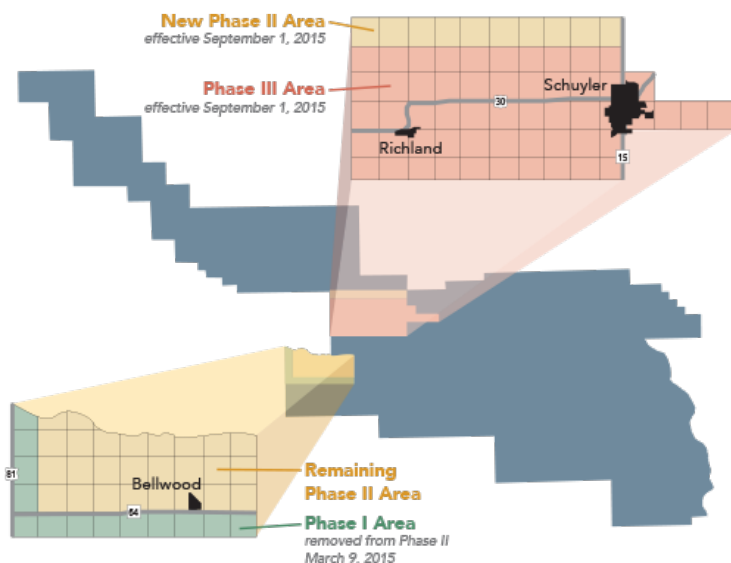
PHASE II & III MANAGEMENT AREAS

The NRD instituted Phase II Ground Water Management Areas near Bellwood in 2003 and Richland-Schuyler in 2004 to deal with elevated nitrate levels in groundwater. High nitrate levels in drinking water can be dangerous for infants, pregnant or nursing mothers, and people with respiratory or immune problems.

Phase II areas have several requirements for producers relating to water and soil sampling, reporting of fertilizer use, and timing restrictions for winter fertilizer applications.

Since the Phase II areas were put in place, parts of the Bellwood area have shown a slow but steady decline in nitrate levels. In March 2015, 11 of the 32 original sections in the Phase II area met the requirements to move back down to Phase I management.

Unfortunately nitrate levels have continued to rise in the Richland/Schuyler area. From 2011-2014, more than 60% of the sections in that area had more than 10 parts per million nitrate, the trigger level for moving to Phase III management. As a result, all 55 sections in the Richland-Schuyler Phase II area will move to Phase III on September 1, 2015. Ten sections directly north of the current area will move from Phase I to Phase II at the same time.





REQUIREMENTS

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Each Phase area has certain requirements for producers using nitrogen fertilizer. These requirements are cumulative; in other words, all Phase I requirements apply in Phases II and III, and all Phase II requirements apply in Phase III.

PHASE I, PHASE II, PHASE III REQUIREMENTS

In general, the Lower Platte North NRD has an adequate supply of groundwater. However, history shows that extended drought and/or excessive water use could deplete our groundwater below useable levels. The LPNNRD has established two different management programs to address the aquifers of our District.

Level Management Areas look at current groundwater levels compared to a previous base year, in this case 1987.

Water Development Areas generally focus on projected future water demand and whether an aquifer can sustain further groundwater development. Restrictions on new groundwater development have been established for aquifers that the District believes to be limited or restricted in size, either in area or in thickness.

Learn more at www.lpnnrd.org.