

PREPARING A GROUNDWATER PROTECTION PLAN FOR INSTALLATION OF MONITORING WELLS

Kentucky Division of Water
Watershed Management Branch
Groundwater Protection Program
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Frankfort, KY 40601
(502) 564-3410

[Groundwater Protection Webpage](#)

The Groundwater Protection Plan Regulation, 401 KAR 5:037, requires anyone who conducts an activity having the potential to pollute groundwater to develop a Groundwater Protection Plan (GPP). A Groundwater Protection Plan identifies the activities being conducted at a site that have the potential to pollute groundwater and states the practices that will be used to prevent groundwater pollution. Section 2 of the regulation identifies the activities that require a GPP. Activities that are likely to be conducted during the installation of monitoring wells, as identified under Section 2 are:

- (1) (f) "Storing, treating, disposing, or related handling of hazardous waste, solid waste, or special waste in landfills, incinerators, surface impoundments, tanks, drums or other containers, or in piles;"
- (2) (g) "Commercial or industrial storing or related handling in bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, or other pollutants held in tanks, drums, or other containers, or in piles;"
- (3) (m) "Installation, construction, operation, or abandonment of wells, bore holes, or core holes"
- (4) (o) "Impoundment or containment of pollutants in surface impoundments, lagoons, pits, or ditches"

Your GPP must include **all** the activities being conducted your sites that are subject to 401 KAR 5:037. Read Section 2 carefully to determine if there are other regulated activities being conducted other than the ones listed above. If so, include them in the GPP. The regulation may be downloaded at the Groundwater Protection Plan web site by using the link at the top of the page. Requirements of this guidance document do not supersede or in any way exempt a monitoring well driller from other federal or state regulatory requirements to which he (she) may be subject. Additionally, no monitoring well may be constructed, modified, or abandoned contrary to the provisions of 401 KAR 6:350, Monitoring Well Construction Practices and Standards.

USING THE GUIDANCE

Follow the Guidance Format

Follow the format provided in this guidance to develop your GPP. Using this format will assure that most, if not all, of the information necessary for an adequate review is included. It also organizes the

information so that anyone from the general public can follow your plan without needing additional explanation.

Use all Headings and Subheadings as stated in the Guidance

Do not make up your own headings or subheadings. Use the headings and subheadings in the order provided in the guidance. Do not leave out headings.

Provide all Information requested in the Guidance, where applicable

Be sure that you have provided the information requested. The review process is delayed when necessary information has been left out.

Contact the GPP Program if you have questions or need assistance

Call the Program Coordinator at (502) 564-3410.

WHEN YOU HAVE COMPLETED THE GPP....

Review the GPP

Review the draft to be sure that the GPP addresses all the activities occurring at your sites that are covered by 401 KAR 5:037 and that you have provided all of the information, where applicable, for each section.

Implement the GPP

To be in compliance with 401 KAR 537, the GPP must be implemented immediately following development, even if it has been sent to the Groundwater Section for review. If your GPP is in review, continue to implement the protective practices in the submitted GPP. If changes are required, then the new practices should be implemented.

Submit the GPP

Submittal of your GPP for review by the Groundwater Section is optional unless required by the GPP Program, a Department for Environmental Protection inspector, or by an Agreed Order from the Division of Enforcement.

Submit one (1) copy of the plan to GPP Program Coordinator, Groundwater Section, Watershed Management Branch, Kentucky Division of Water, 300 Sower Blvd. 3rd FL, Frankfort, Kentucky 40601.

Your initial GPP submittal and any further drafts **will not** be returned. Be sure to keep a copy of each draft so that required changes can be made. When your GPP meets regulatory requirements, you will receive a letter to that effect.

It is not necessary to include a copy of 401 KAR 5:037 or this guidance document with the GPP.

FORMAT FOR THE GPP

SECTION A. GENERAL INFORMATION

1. Name and Address of Company

--Street address, or P. O. Box, if preferred for receipt of mail

--Telephone Number

--Email Address, if available

--County

2. Name of Driller

--Address, if different from Company

--Telephone, if different from Company

3. Person Developing GPP

--Name

--Address (business address, not home address unless business operates out of the home)

--Telephone Number (business phone, unless business operates out of the home).

--email address, if available

4. Person Responsible for Implementing GPP

--Name

--Address (business address, not home address unless business operates out of the home)

--Telephone Number (business phone, unless business operates out of the home)

5. Brief Description of Facility Operation

State that you drill and install monitoring wells.

SECTION B. ACTIVITIES THAT HAVE THE POTENTIAL TO POLLUTE GROUNDWATER

List all the activities that are conducted at each installation site that require a GPP. Include the applicable activities listed on Page 1 and any additional regulated activities that are being conducted.

SECTION C. PRACTICES SELECTED TO PROTECT GROUNDWATER FROM POLLUTION

Kentucky Administrative Regulation 401 KAR 5:037 was promulgated in response to the requirement of KRS 224 that the cabinet adopt administrative regulations to protect and prevent pollution of the waters of the Commonwealth. Failure to implement the BMPs to prevent pollution will not only violate 401 KAR 5:037, but also KRS 224.70-110 which states that *"No person shall, directly or indirectly, throw, drain, run or otherwise discharge into any of the waters of the Commonwealth, or cause, permit or suffer to be thrown, drained, run or otherwise discharged into such waters any pollutant, or any substance that shall cause or contribute to the pollution of the waters of the Commonwealth....."*

Statutory penalties for polluting the waters of the Commonwealth due to failure to develop and implement a GPP can be as high as \$25,000 per day for each day during which the violations continue (KRS 224.99-010(1)).

The following protective practices (BMPs) must be used in your GPP:

State that you the monitoring well driller will meet the requirements of 401 KAR 6:350 and that you will also comply with the specific requirements under other federal or state regulatory programs (The Regulatory Authority).

1. Siting Consideration:

--State that all monitoring wells constructed in a flood area shall be water tight and shall be in accordance with The Regulatory Authority.

2. Decontamination:

--State the following decontamination practices shall be followed:

(a) All downhole equipment will be washed before each well is drilled, with non-phosphate soap and potable water or with a steam jenny or both and capable of removing all foreign material.

(b) Except for road film or dust, the drill rig shall be "cleaned" before arriving at the drill site.

3. Other Drill-site Groundwater Protection Practices

(a) If drilling occurs at a hazardous waste site then all wash water and all downhole material removed will be drummed and disposed of properly.

(b) Specify that pump test or well development activities will not erode the ground surface or cause a pollutant discharge into any drainage feature.

4. Well Design Considerations for Proper Well Installation

(a) Well Casing:

(1) State that no monitoring well will be left open.

(2) Specify that monitoring well casing shall be in accordance with The Regulatory Authority. Page 5

(3) Specify that monitoring well casing to be used shall be considered for stress, corrosiveness of the water and manufacturer specifications. Also state that the casing, seals and grout shall be installed so as to prevent borehole collapse and mixing of groundwaters.

(b) Well Intakes/screen:

--Specify if well screens are installed, installation is in accordance with The Regulatory Authority.

c) Filter Pack Design:

--Specify if filter packs are installed, installation is in accordance with The Regulatory Authority. State that filter pack installation not falling in the above-noted category shall

extend from the bottom of the well screen to approximately two (2) feet above the top of the well screen. The filter pack grain size shall be such that 85 to 100% of the grains shall be retained in the annular space and will not be a factor in water flow.

(d) Annular Seal Design:

--Specify that the annular space above the sand pack shall be sealed in accordance with The Regulatory Authority. State that the annular space sealing not falling in the above-noted category shall consist of a hydrated bentonite seal such that it will not be displaced by the tremie pipe when the cement/bentonite or bentonite is pumped.

(e) Surface Completions and Protective Measures:

(1) Specify that the above-ground (stick-up) completions or the flush-to-ground (flush mount) completions shall be in accordance with The Regulatory Authority. State the stick-up and flush mount completions not falling in the above-noted category should consist of a surface seal of concrete surrounding and sloping away from the well casing to prevent the entry of pollutants through the borehole. This surface seal should be unaffected by frost or freeze heaving.

(2) Specify that the stick-up and flush mount completions shall be in accordance with The Regulatory Authority. Specify that monitoring well construction not falling under the above-noted category will take into consideration the protection of the well casing due to heavy traffic or potential vandalism by utilizing well casing locks, lockable protective steel casing and steel or concrete-filled bumper guards.

(f) Well Abandonment:

--State that monitoring well abandonment shall be in accordance with The Regulatory Authority. Specify that those wells not falling under the category noted above and being the monitoring well owners responsibility for maintenance and abandonment will be abandoned in accordance with the monitoring well owners approved Groundwater Protection Plan (GPP).

SECTION D. IMPLEMENTATION SCHEDULE

State that you the certified monitoring well driller are following the practices provided in Section C. at each well site.

SECTION E. EMPLOYEE TRAINING

State training you the certified driller, receive that will promote groundwater protection. (ex.- trade journal magazines, conferences, etc.)

Describe how you the certified driller train your employees to meet the requirements of 401 KAR 6:350 and in accordance with The Regulatory Authority. State if you give lectures covering groundwater protection subjects at your shop. Training should focus at a minimum upon the

