

## Requirements for Retrofitting a Stormwater Injection System

### Overview

DEQ administers Oregon's Underground Injection Control Program under the federal Safe Drinking Water Act. Owners or operators of existing UIC systems must meet current requirements, regardless of installation date or existing city or county permits, and must obtain authorization by rule or a Water Pollution Control Facilities permit.

In many situations, meeting current requirements involves retrofitting a system to meet authorization by rule requirements in Oregon Administrative Rules 340-044-0018. A UIC owner or operator must close a UIC system or apply for a WPCF permit if the authorization by rule requirements cannot be met.

### Requirements for retrofitting stormwater injection systems

The extent to which a UIC system must be retrofitted depends on the degree to which the system meets authorization by rule requirements. These requirements are applicable to both existing and planned stormwater injection systems.

An owner or operator retrofitting an injection system must ensure the system:

- Does not cause movement of untreated contamination into groundwater or onto adjacent property if the injection system is on a site listed in DEQ's Environmental Cleanup Site Information database. Owners or operators of systems on these sites should contact regional staff in DEQ's Cleanup Program for clarification.
  - Is not located within 500 feet of a water supply well (domestic, agricultural, industrial, etc.), or in the mapped two-year time of travel of a municipal water supply well.
  - Has sufficient vertical separation distance between the bottom of the UIC and the top of the seasonal high groundwater level to minimize potential pathogen movement to groundwater.
  - Is the only option compared with other stormwater disposal methods that afford better protection of groundwater and which have been evaluated and are not reasonably available or possible.
  - Does not receive stormwater mixed with other waste.
- Is downstream of "pretreatment" as defined in state rule OAR 340-044-0018(3)(a)(H) to prevent contamination from reaching groundwater. The use of low-impact designs, such as a bioswale with overflows to a drywell, meets the "pretreatment" or best management practice requirement. If a low-impact design is not possible, a stand-alone injection system must be designed, constructed and maintained to protect groundwater quality. Pretreatment may not be needed if the injection system receives discharge from roof drainage that is not mixed with any other type of discharge.
  - Is monitored annually at sites with a significant potential for environmental risk. Examples of these sites include sites with 1,000 or more vehicle trips per day and sites where hazardous or toxic materials or petroleum products are handled, such as a gas station. UIC systems at these sites must be constructed or retrofitted to allow sample collection of the discharge, and monitoring results must be reported to DEQ.

Underground injection systems must be protected from spills and illicit waste disposal, therefore:

- UICs should not have slotted lids.
- Site owners must be able to plug the UIC system in case of a spill.
- An owner or operator must develop a site-specific stormwater management plan that includes maintenance procedures. A UIC system should be designed or retrofitted to allow access and maintenance.

### Requirements for existing stormwater injection systems

Site owners or operators of existing UIC stormwater systems are required to document that the systems are not contaminated if they want those systems to be authorized by rule. DEQ will request analysis of sediments and fluids present in the injection system depending on the site. At a minimum, petroleum (Total Petroleum Hydrocarbons for diesel range and gasoline range), heavy metals (Synthetic Precipitation Leaching Procedure, eight metals set) and heavy oil and grease analysis must be conducted on the samples.



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Sites posing a higher risk to groundwater, such as a chemical manufacturing plant, are generally asked to conduct additional testing. Lab reports must be submitted to DEQ as part of the authorization by rule approval process.

### Is retrofitting necessary?

Certain situations exist where retrofitting is not always necessary. For example, if a UIC receives only stormwater runoff from a roof and a ventilation system does not discharge contaminants to the roof, a retrofit is not needed. In contrast, if a UIC system receives stormwater runoff from a roof and the vertical separation distance between the bottom of the UIC and the top of the seasonal high groundwater is less than five feet, the local municipality may require a retrofit to meet the minimum vertical setback requirement. Options to address this situation include replacing a deep, narrow drywell with a shallow, wide infiltration trench or routing flow from the downspout onto a splash block or directly onto the ground, with erosion controls in place, for surface infiltration, thereby eliminating the need for a UIC system.

Site-specific conditions determine if UIC systems receiving stormwater runoff from parking lots require pretreatment retrofits.

- If a UIC system is a drywell in a small parking lot with an open slotted lid and has a separation distance of at least 10 feet in geologic material having a high capacity to adsorb pollutants (for example, silty sand), pretreatment may not be necessary.
- If a UIC system receives stormwater from a high-risk site, such as a site subject to high traffic volumes (specifically, greater than 1,000 trips per day) or heavy industrial traffic (for example, a large lumber mill), a UIC system with an open, slotted lid probably is inadequate protection of groundwater quality.

In this last case, a retrofit option is to install a solid lid on the UIC system and a trap-style catch basin with a filter. This catch basin can be piped either directly to the UIC system or to a sedimentation manhole which is piped to the UIC system.

It may be possible for a UIC system owner or operator with a system receiving runoff from a high-risk site to conduct retrofits contingent on annual monitoring results. If results show concentrations that pose a risk to groundwater quality, pretreatment or best management practices (for example, frequent dry sweeping of paved areas and storing hazardous materials

under cover or inside a building) need to be installed or put in place.

### For more information

Contact David Cole, DEQ regional hydrogeologist, Portland, at 503-229-6371, or call toll-free in Oregon at 1-800-452-4011, ext. 6371.

Further information on UIC system requirements is on DEQ's UIC website at <http://www.deq.state.or.us/wq/uic/uic.htm>

### Alternative formats

Alternative formats (Braille, large type) of this document can be made available. Contact DEQ's Office of Communications and Outreach, Portland, at 503-229-5696, or call toll-free in Oregon at 1-800-452-4011, ext. 5696; fax to 503-229-6762; or email to [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us)

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