

Requirements for Closing Motor Vehicle Waste Disposal Wells in Oregon

March 2016



Underground Injection Control Program

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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



State of Oregon
**Department of
Environmental
Quality**

Last Updated: 3/22/2016

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Purpose

The purpose of this document is to provide cities and business owners with: (1) background information about automotive waste disposal wells, (2) tools for identifying whether or not they own an automotive waste disposal well, and (3) instructions for what to do if they own an automotive waste disposal well.

Background

An automotive waste disposal well is a device that disposes of fluids from vehicle repair or maintenance activities into underground soils. Typically, the device is comprised of floor drains, catch basins or sinks that are connected to a drywell, septic system, or cesspool. Automotive waste disposal wells are commonly found at auto service stations, auto body shops, muffler/transmission repair shops, and car dealerships (EPA, 2004). Photos of automotive waste disposal wells are shown in Figure 1 below.



Figure 1. A circular floor drain (left) and catch basin floor drain (right) that drain to a drywell at an automotive-related business. These devices are automotive waste disposal wells.

Automotive waste disposal wells pose a risk to drinking water because the fluids from vehicle repair or maintenance (engine oil, brake fluid, fuels, antifreeze, transmission fluid, hydraulic fluid, degreasers, solvents and power steering fluid) can reach groundwater and be carried to a drinking water well. The risk that automotive waste disposal wells pose to drinking water is shown in Figure 2.

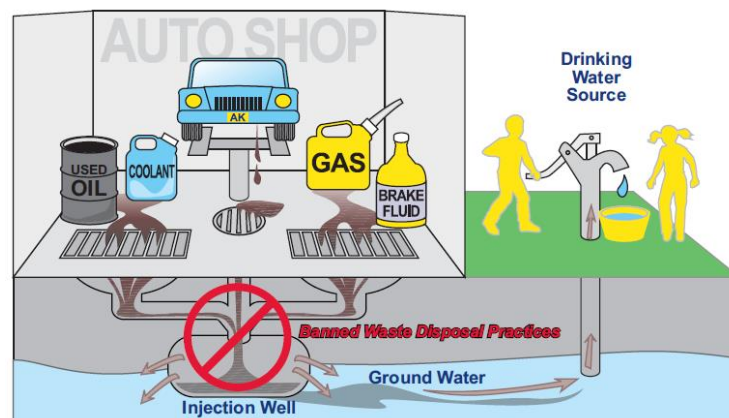


Figure 2. Automotive waste disposal wells pose a risk to drinking water supplies (source: EPA, 2004).

Automotive waste disposal wells are a type of Underground Injection Control, or UIC, known as a Class V UIC. Automotive waste disposal wells are regulated by the federal UIC rules in the Safe Drinking Water Act¹ and by the State of Oregon UIC rules². Both the state and federal³ UIC rules require that automotive waste disposal wells are permanently closed because of the risk they pose to human health and the environment.

How do I know if I have an automotive waste disposal well?

There is an automotive waste disposal at the facility when all of the following statements are true:

- (1) Motor vehicles are serviced at the facility, and
- (2) The facility has floor drains or sinks in the vehicle service areas, and
- (3) The floor drains and sinks discharge to underground soils using, for example, a drywell or septic system.

Cities and businesses can usually determine if (1) and (2) above are true. However, it is difficult for cities and businesses to determine if (3) above is true. The following techniques can be used to determine whether sinks and/or floor drains discharge to underground soils.

Technique No. 1: Availability of sanitary sewer

If sanitary sewer is not available at the property, then it is likely that floor drains and sinks discharge to underground soils using septic systems, cesspools, or drywells. Contact the local water jurisdiction to determine whether sanitary sewer is available to the property.

Technique No. 2: Building permit search

Building permits, including plumbing and sanitation permits, sometimes contain information about whether floor drains discharge to underground soils (for example, using a drywell, septic system or cesspool). Exercise caution when using building permits to identify automotive waste disposal wells. Old permits may not reflect current conditions. Building permits are available at the local city or county permits office.

The figure on the following page is a plumbing permit for an automotive repair facility where floor drains discharge to underground soils using a drywell.

¹ Title 40 of the Code of Federal Regulations (CFR) part 144.

² Oregon Administrative Rules (OAR) Chapter 340 Division 44.

³ 40 CFR 144.84(2) and 40 CFR 144.88 prohibit construction of new automotive waste disposal wells after April 2000, and 40 CFR 144.88 requires that automotive waste disposal wells constructed before April 2000 be closed by January 1, 2007, at the latest.

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MULTNOMAH COUNTY DIVISION OF PUBLIC HEALTH 22530
 REPORT OF PLUMBING INSPECTION

Date: June 11, 1973

Address: 18030 E Burnside St. Permit No. File No.

Lot Blk Add'n

Master Plumber: Haggard Plbg.

Owner: Atlantic Richfield Oil

Stories & Class of Building: New, one story, serv. station

Water Closets: 2	Hot Water Tank: 1	Cesspool: 1
Bath, Shower: 2	Fountain: 1	Septic Tank: 1
Bath Tub: 2	Air Conditioner: 1	Dry Well: 5
Basins: 2	Urinals: 1	Water Service: 1
Auto. Dishwasher: 1	Sink, Bar: 1	Connect to Sewer: 1
Sink, Ordinary: 1	Sink, Service: 1	Cesspool, Septic Tank: 1
Disposal: 1	Sewer Ejectors: 1	Laundry Tray: 1
Refrigerators: 1	Auto. Clothes Washer: 1	Dental Chairs: 1
Drain Floor: 4	Catch Basins: 4	Drain Area: 1
Development Tank: 1	Rain Drains: 5	Other Fixtures: 1

Remarks:

Date of First Inspection: 6-14-73 Date of Final Inspection: 9-18-73

Inspector: [Signature] Inspector: [Signature]

FIG. 1

Figure 3. This plumbing permit shows an automotive repair facility where floor drains discharge to underground soils using a drywell.

Technique No. 3: Dye test

A dye test involves discharging liquid dye (commonly fluorescent orange or green) into a drain, and at the same time, observing public sewer lines to detect the dye. If the dye appears in the public sewer lines, then the facility is connected to the public sewer system. If the dye does not appear in the public sewer line, then the facility likely discharges to underground soils using a septic tank, cesspool or drywell. Conducting a dye test requires the assistance of contractors and/or the owners of the public sewer (for example, a city). The liquid dyes used for these types of tests are designed to be safe for human health, aquatic life and waterways.



Figure 4. Fluorescent green dye is placed in a floor drain and chased with water (left). The green dye appears in a nearby sewer line (right), indicating that this floor drain does not discharge to underground soils and, therefore, is not an automotive waste disposal well.

Technique No. 4: Camera inspection

Contractors have miniature cameras that, depending on access, can be lowered into a drain and pushed through the line to visually determine whether or not the drain discharges to a drywell, cesspool or septic system. Camera surveys can be used to determine the length, orientation, and depth of subsurface piping.

Technique No. 5: Geophysical Surveys

Geophysical surveys, which may include ground-penetrating-radar (GPR) and magnetometers, may be able to locate subsurface pipes and drywells depending on site-specific conditions. A contractor must be hired to perform geophysical surveys.

What do I do if I have an automotive waste disposal well?

If you have an automotive waste disposal well, follow a four-step process to close the well:

- **Step 1: Stop discharge to the automotive waste disposal well.** Stop the discharge using temporary plugs or by changing standard operating procedures. Alternatives to using automotive waste disposal wells are discussed in the next section, “What are alternatives to automotive waste disposal wells?”
- **Step 2: Submit a pre-closure notification and closure work plan to DEQ.** The Pre-Closure Notification form is available online at: <http://www.deq.state.or.us/wq/uic/forms.htm>. A Closure Work Plan must accompany the Pre-Closure Notification. The Closure Work Plan describes the methods that will be used to close the automotive waste disposal well⁴, including:
 - Details about the automotive waste disposal well [e.g., fluids injected into the well, construction information (depth, diameter, inlet depth, open or closed bottom), and a figure showing the locations of catch basins, floor drains, piping, oil/water separators, septic tank, leachfield, drywell, etc.].
 - Soil, sediment, and/or groundwater samples that will be collected during closure, collection methods, and laboratory analyses that will be performed. At a minimum, laboratory analyses must include: volatile organic compounds; polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons; gasoline, diesel and heavy oil range hydrocarbons; Resource Conservation and Recovery Act (RCRA) eight metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.
 - Screening levels that will be used to determine the extent of excavation, and rationale for using the screening levels.
 - Decommissioning methodology (solids and liquids removal, drywell excavation, backfill placement).
 - If you plan to leave the floor drain in-place, then you must include the alternative to discharging fluids to the drywell (for example, connection to sanitary sewer).

⁴ See OAR 340-044-0040(4)

DEQ will review the closure work plan and if appropriate, authorize closure of the automotive waste disposal well in writing within 30 calendar days of receiving the form and work plan.

- **Step 3: Permanently close the automotive waste disposal well.** Disassemble and clean the drain by:
 - Removing metal grates or covers.
 - Removing soil, sludge, liquids, or other material. Note that material removed from an automotive waste disposal well (including floor drains, catch basins, oil/water separators, drywell, septic tank, etc.) needs to be characterized at an analytical laboratory to determine whether the sediment needs to be managed as a hazardous waste. If the waste is hazardous, then it must be removed, transported and disposed of by a licensed waste hauler.
 - Close the drains to prevent future discharge to the automotive waste disposal well. EPA (2005) recommends that floor drains be filled with cement (see Figure 5 below). Piping associated with the automotive waste disposal well must be filled with a cement plug or capped and filled with cement (see Figure 6).
 - Decommission drywells, cesspools, and septic systems in accordance with state rules⁵.



Figure 5. Decommissioning of a trench-style floor drain. The picture on the left shows the floor drain after disassembly and cleaning. The picture on the right shows the floor drain after it has been filled with cement.

⁵Drywells must be closed in accordance with OAR 340-044-0040, which can be accessed online at: http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_044.html. DEQ has developed fact sheets that summarize these requirements, available online at: <http://www.deq.state.or.us/wq/uic/guidance.htm>. Septic systems and cesspools must be closed in accordance with OAR 340-071-0185, which can be accessed online at: http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_340/340_071.html.



Figure 6. Decommissioning of a catch basin-style floor drain. The top picture shows the floor drain after disassembly and cleaning. The bottom picture shows the floor drain after it has been filled with cement. Note that the piping leading from the catch basin is capped prior to cementing.

- **Step 4: Submit a Closure Report to DEQ.** The Closure Report documents the decommissioning of the automotive waste disposal well. The report must include, as appropriate:
 - Pre-Closure Notification Form,
 - Date of closure,
 - Name of contractor or those who performed the closure,
 - Description of how the system was closed, including what materials were used,
 - Dimensions of the drywell (diameter, depth, inlet depth, etc.), dimensions of the excavation, and thickness of sediment in the drywell,
 - Table(s) and map(s) showing sample locations, analytical results, drywell location, and excavation extent. Note that results of sampling must be reported to DEQ within 14 days of receipt of sampling results [see OAR 340-044-0040(4)].

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- Laboratory reports and chain-of-custody forms that document sample handling and transfer,
- Description of how and where any materials removed from the automotive waste disposal well were disposed of, as well as the bill of lading from the facility that received the material and the bill of lading for its disposal,
- A statement that the closure meets DEQ's closure requirements (OAR 340-044-0040) and Oregon Water Resources Department abandonment requirements (either OAR 690-240-0030 or 690-220-0030), and
- The Closure Report must be certified by a registered State of Oregon licensed geologist, professional engineer, or engineering geologist.

Closure Reports that are prepared to fulfill requirements of the Tanks Program, Voluntary Cleanup Program, or Independent Cleanup Program will meet UIC program requirements for a Closure Report, so long as the information described above is included in the report.

What are alternatives to automotive waste disposal wells?

The following methods of automotive waste management can be used instead of disposal wells:

- **Run a dry shop.** Dry shops minimize the use of water at the facility. For example, dry shops use drip pans and trays wherever fluids are transferred, use vacuums and absorbents to clean up spills and drips, and recycle fluids when possible.
- **Holding tank.** Drains can be connected to a holding tank that is regularly pumped out using a licensed and certified hauler. Tanks should be monitored regularly for leaks.
- **Connect to municipal sewer system.** Contact the local sewer authority about connecting floor drains to the sanitary sewer. This option may be available now, even if it was not available when the facility was constructed.

For more information

Contact the Oregon DEQ UIC Senior Hydrogeologist at 503-229-6371 if you have questions or need additional information.

References

EPA, 2004. Alaskan Technicians: How your motor vehicle facility can affect your community's drinking water. Office of Compliance and Enforcement: Groundwater Unit. EPA 910-F-09-004.

EPA, 2005. Closure Guidelines for Facilities With Motor Vehicle Waste Disposal Wells. Available at: <http://www.epa.gov/region5/water/uic/classv/r5mvwdw.htm>