



POLICY: Well-to-Underground-Storage-Tank (UST)-Setback-Waiver Policy for Public Water Systems

PURPOSE FOR NEW POLICY/PROCEDURE: This policy is written to clarify Section 3 of the Maine *Rules Relating to Drinking Water* pertaining to waivers for well-to-underground-storage-tank (UST) setbacks of less than 1,000 feet. Waivers to the 1,000 foot setback requirement are considered in the interest of supporting the development of business in Maine, while maintaining high public health standards by providing safe water to the public. For setback requirements related to leach fields and other contamination sources, see DWP0063.

SCOPE: This policy applies to “new wells”, as defined in this policy, including, but not limited to, proposed or existing, new wells, replacement wells, redundant wells, or additional wells.

EXECUTIVE SUMMARY:

<u>Setback from PWS Well to UST</u>	<u>Resolution</u>
1,000 feet or more (proposed well) 900 feet or more (existing well)	None Necessary. Monitoring may be required.
All proposed wells less than 1,000 feet	Must pursue land acquisition or easement.
300 to 1,000 feet (proposed well) 300 to 900 feet (existing well)	1. Hydrogeologic Assessment or/and 2. Install treatment equipment (Apdx A) & potentially a monitoring well. Ongoing monitoring required (Apdx B).
All wells with setback less than 300 feet (proposed or existing)	Install treatment equipment (Apdx A) & potentially a monitoring well. Ongoing monitoring required (Apdx B).
Replacement Wells (see definition) w/in 1000'	May be issued a waiver. Risk must be reasonably minimized by location and design of replacement wells. Ongoing monitoring required (Apdx B).
Some well locations, proposed or existing, may be denied.	Find an acceptable well location using this policy.
None for a PWS in operation continuously from before the effective date of this policy (10/26/09, see page 3), any setback for an existing or replacement well only.	Ongoing monitoring may be required (Apdx B).

ORIGINATOR/OWNER: Nathan Saunders, P.E.

DEFINITIONS:

[Also, see definitions from DEP Rules, Chapter 691]

After the Fact (ATF) Public Water system: A facility that meets the criteria of a public water system, not regulated by the Drinking Water Program, found to be already in operation.

At Risk Population: When the primary PWS population consists of children (less than 18 years of age), elderly, and immune-compromised individuals.

Department: Department of Health and Human Services

DEP: Maine Department of Environmental Protection

DWP: Maine Drinking Water Program

Facility (in this document) includes all facilities whether proposed, under construction, existing, currently a public water system, or in the process of being regulated as a public water system through the Department's new system approval process.

Geologist: In this document the term "geologist" refers to a Maine certified geologist.

Maximum Contaminant Level (MCL): The maximum permissible level of a contaminant in water which is delivered to any user of a public water system

New Well is defined as a well that has not yet been drilled or an existing well that has not been regulated as a public water source in the last five (5) years... new to the Maine Drinking Water Program (*this includes After the Fact wells*).

Oil: "Oil" means oil, oil additives, petroleum products and their by-products of any kind and in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with other nonhazardous waste, crude oils and all other liquid hydrocarbons regardless of specific gravity. For the purposes of this document, oil does not include propane or natural gas.

Replacement Well: a well that provides a new source of water to a population served by an existing, currently regulated PWS well (which no longer serves the PWS). A replacement well is **not** a redundant or an additional well and may be an existing well. In the case of a well whose volume capacity has diminished over time, an additional well that replaces the lost capacity will be considered a "replacement" well (replacing lost capacity) and the existing, reduced-capacity-well may continue to be used; the reduction in volume capacity must be proven and documented.

PWS: Public Water System

Setback (in this document) is the distance between a well and a UST or, after evaluating the processes involved with the use of the USTs, "setback" will be considered the distance between a well and the critical location where a spill is likely to occur. For example, UST fill pipes, where spills are likely to occur, can be many feet away from a UST, and will be considered in this waiver evaluation, noting that engineering controls can reduce the chance of spills at fill pipe locations, or vehicle filling locations, etc..

UST is an underground storage tank regulated by DEP Chapter 691, defined in that chapter as follows:

"Underground oil storage tank" also referred to as "tank," means any container, 10% or more of its volume being beneath the surface of the ground and which is used, or intended to be used, for the storage, use, treatment, collection, capture or supply of oil as defined in this subchapter, but does not include any tanks situated in an underground area if these tanks or containers are situated upon or above the surface of a floor and in such a manner that they may be readily inspected. For the purpose of this rule, "underground oil storage tank" does not include underground propane storage tanks, underground oil water separators, storm water and emergency catch basins, and hydraulic lift tanks. Overflow tanks associated with oil-water separators are still considered an underground oil storage tank.

VOCs: Volatile Organic Compounds

REGULATIONS:

From the Maine *Rules Relating to Drinking Water* [10-144 CMR 231 (3)(G)(2)]:

"New wells shall be located ... at least 1,000 feet from Underground Storage Tanks regulated by the Department of Environmental Protection (DEP) Chapter 691, unless a waiver is obtained from the Department and DEP."

From the Department of Environmental Protection, See MRSA Title 38 Chapter 13D.

POLICY FOR PUBLIC WATER SYSTEMS (PWS) WITH PROPOSED OR EXISTING WELLS, INCLUDING AFTER THE FACT PWS

1. The Well to Contamination Source Setback Waiver Form (DWP0150) must be used to record a UST setback waiver request that is granted or denied.
2. If a setback measures 1,000 feet or more, then a waiver is not required.
3. If circumstances exist where a well (proposed or existing) is closer than 1,000 feet from a UST, then the Department may grant a setback waiver on a case-by-case basis.
4. A PWS found to be in operation continuously from before the effective date of this policy, 10/26/2009, will be granted a setback waiver for an existing well only. Ongoing monitoring may be required.
5. For an existing well, the 1,000-foot-setback requirement may be reduced by 10%; an existing well with setback between 900 and 1,000 feet does not require a waiver).
6. A PWS with a proposed well with setback of less than 1000 feet must pursue, to the satisfaction of the DWP, the acquisition of land or easement to land for the purpose of drilling a well with a setback of 1000 feet, or for maximizing setback if setback must be less than 1000 feet. A written correspondence from the PWS describing efforts to obtain land or an easement may be required by the DWP.
7. In all cases, setback waiver evaluations shall include an assessment of the well location(s) on each site that provide the most protection and minimal risk from UST contamination. Certain locations, including those for existing wells, may be denied. The New System or Well Approval Process for all Public Water Supplies requires that the location of a PWS well be

approved by the DWP. For wells with reduced setbacks from USTs, the DWP reviews well site location working in conjunction with the DEP (see additional detail below).

8. A “replacement” well, as defined above, may be issued a setback waiver without requiring a hydrogeologic assessment (Apdx D) or the installation of VOC related treatment equipment (Apdx A), unless test results show that treatment is required.

For A well drilled to replace a contaminated well (due to oil or other contaminant), additional testing and/or a hydrogeologic assessment may be required.

A well that makes up (replaces) the lost volume capacity of a well with diminished output can only be considered a “replacement” well if the diminished output of the well is proven and documented. A well that cannot meet an increased demand does not qualify as a well with diminished output. Therefore, if the growth of a PWS increases the demand on an existing well and the well cannot meet the increased demand, then an “additional” well is required and it cannot be considered a “replacement” well. Replacement wells may be installed with the following conditions:

- The location and design of the well must reasonably minimize contamination risks
 - Ongoing monitoring may be required
9. A public water system with a proposed well that has a setback of 300 up to 1000 feet, or an existing well with a setback of 300 up to 900 feet, may hire a geologist to evaluate the geology and hydrogeology of the site and render an opinion concerning the risk of contamination to the well in the event of an oil discharge at the UST facility. A DWP geologist, working in conjunction with the DEP, may grant a waiver to a public water system for a proposed well with a setback of 300 up to 1000 feet. This waiver would be granted, based upon review of the report provided by a geologist and a determination that the information contained in the report demonstrates to the satisfaction of the DWP/DEP that minimal risk of contamination exists. Setback waiver approval conditions may be required by the DWP, including, but not limited to, well modification (e.g. installation of a Jazwell seals at appropriate locations) or the installation of treatment equipment (See Apdx A). Well construction requirements or other engineered solutions may be required as enhancements to the geologist’s report.
 10. A PWS with setback of 300 up to 1000 feet for a proposed well, or 300 up to 900 feet for an existing well may obtain a waiver as a result of installing treatment equipment (Apdx A) for the removal of volatile organic compounds, in lieu of obtaining a hydrogeologic assessment (Apdx D), with the following conditions:
 - Ongoing regular testing of raw water (Apdx B)
 - Possible additional finished water testing, if contamination is discovered in raw water testing.
 - Installation of a monitoring well at an appropriate location with on going monitoring may be required.
 11. A PWS with a setback of less than 300 feet, is required to install treatment equipment (Apdx A) for the removal of volatile organic compounds, with the following conditions:
 - Ongoing regular testing of raw water (Apdx B)
 - Possible additional finished water testing, if contamination is discovered in raw water testing.

- Installation of a monitoring well at an appropriate location with ongoing monitoring may be required.

12. Waivers are granted or denied by the DWP, working in conjunction with the DEP
13. **If VOC treatment equipment is installed per Apdx A, then Maine Department of Environmental Protection (DEP) review and approval is not required.** When treatment is not installed per Apdx A, upon receiving a request for a waiver to the 1,000-foot-UST-setback rule, the DWP will contact the Maine DEP, Bureau of Remediation and Waste Management, and provide hydrogeological information relating to the waiver, provided by the system, a geologist, or generated by the DWP. The DEP will, at the conclusion of its review, write an opinion and provide it to the DWP for each well-to-UST-waiver request.
14. For public water systems that have wells with a setback of less than 1,000 feet, the DWP may require that specific well construction standards be met, routine and ongoing monitoring for specific contaminants be completed, and/or treatment equipment installation (Apdx A).
15. Ongoing monitoring requirements will be determined on a case-by-case basis (Apdx B).
16. When a hydrogeologic assessment (Apdx D) is involved, the DWP Geologist needs to sign as the DWP Authorizing Signature.
17. Maintenance records of any treatment installed and operated as a result of this policy will be reviewed during the normal sanitary survey process or as needed to ensure safe drinking water.
18. Treatment equipment described in Apdx A may be bypassed (not operated) if VOCs in the drinking water are present below MCLs. If VOCs are present below MCLs, depending on the level of VOC contamination present, the DWP may recommend or require that the VOC treatment be operated.

Associated Documents

Well To Contamination Source Setback Waiver Form (DWP0150)

New System or Well Approval Procedure (DWP0068)

Well to Contamination Source Setback Waiver Policy for Public Water Systems (DWP0063)

Maine Department of Environmental Protection Rules Chapter 691 and MRSA Title 38 Chapter 13D.

Superseded Documents

None

Retention

This document is retained per the DWP Record Retention Schedules

Revision Log

Section	Page	Rev.	Date	Description Of Change	Approved by:
		Original	10/26/09		Roger Crouse
Several	Several	A	2/18/10	Add Scope, definitions, policy on replacement wells.	Roger Crouse
Appndx A	Page 8-9	B	6/22/11	Added Appendix A	Roger Crouse
Exec Sum, Policy, Apdx A, B, C	1, 2, 4-7. 9	C	8-23-12	Specified treatment equip and requirements and added Apdx A. Specified VOC monitoring requirements and added Apdx B. Renamed Apdx A to Apdx C. Added Apdx C Addendum. Removed waiver form into its own document DWP0150 to consolidate it with DWP0063 form. Added Apdx D from DWP0063 as it applies to both policies.	 Nathan Saunders
Definitions	2	D	10/22/2013	Changed "New Well" definition from 3 to 5 years.	 Nathan Saunders

Appendix A – VOC Treatment Equipment

Required VOC removal treatment equipment includes:

- Qty=2, water treatment media canisters, each capable of holding two cubic feet of granular activated carbon (GAC), piped in series (one after the other)

Note 1: if operation of the VOC treatment equipment is not required (see policy), then the canisters may remain empty (not filled with GAC) and by-passed (water not flowing through the canisters) until VOCs are present in excess of drinking water MCLs.

Note 2: If building space for installing two canisters is limited, the requirement to install a second canister may be waived by the DWP; building an addition to a building to make room for a 2nd canister will not be necessary.

- Sample taps must be installed before, between, and after media canisters

Note: Lubricants used during the installation of sample taps (piercing type) and for valve lubrication must be NSF 60 certified. Be aware that VOC sample results have confused the presence of lubricant used for this purpose with VOC water contamination.

Appendix B – VOC Monitoring Requirements

For systems that require a setback waiver from a UST, the following monitoring requirements apply

Well Setback from UST	Spill Status (From DEP spill layer on DWP Google Maps)	VOC Test Minimum Requirement
Less than 300 feet	Known spill within 1000 feet	Annual VOC monitoring at system entry point
Less than 300 feet	No Known spill within 1000 feet	Annual VOC monitoring at system entry point
300 to 1000 feet	Known spill within 1000 feet	Annual VOC monitoring at system entry point
300 to 1000 feet	No Known spill within 1000 feet	Annual VOC monitoring at system entry point

Note: When VOCs are determined to be present in the drinking water, treatment requirements and testing will be determined by the DWP.

APPENDIX C

Background on the Development of the DWP UST Policy

As of 10/1/2001, PL 2001, Chapter 302, required that new USTs and their components must be located at least 300 or more feet from “private” water supplies. Technical justification for this is written in “Historical Oil Contamination Travel Distances in Ground Water at Sensitive Geological Sites in Maine, Bureau of Remediation & Waste Management, MDWP, April 30, 2002”. Given that pumping from Public Water System (PWS) wells can be much greater than from private wells, additional protective measures were developed to lower the risk of UST related contamination of PWS wells. Lowering the risk of PWS well contamination by USTs was of interest to the State because the State’s groundwater cleanup fund, a limited resource, is required by statute to be used to clean up contamination of both public and private wells. Around 2005, the DEP adopted in rule that USTs must be installed at least 1000 feet from a public water supply well. About two years later, the DWP reciprocated by adopting in rule that PWS wells must be installed at least 1000 feet from USTs. The challenge this brought was that we needed a setback waiver policy to determine and implement sufficient safety measures that would minimize the risk of PWS well contamination, enabling businesses in Maine to operate with insufficient setbacks. Both the DEP and DWP agreed that we needed to provide a method for a business to operate with an insufficient setback while providing sufficient public health safe guards.

Beginning in 2009, DWP staff met with DEP staff to develop a UST Setback waiver policy. It became apparent right away that the DEP was not inclined to provide waivers to the 1000 foot setback rule because it increased the chance that groundwater funds would be required to clean up contamination. With further discussion, we proceeded with the understanding that we needed to come up with methods/protections that would both protect public health and limit the financial exposure of the groundwater fund from being used to clean up contamination in drinking water wells. We agreed upfront that any waiver to the 1000 setback requirement should be agreed upon by both the DWP and DEP.

The basic content of the DWP UST Setback Waiver policy is that:

1. For setbacks 1000 feet down to 300 feet, VOC treatment can be installed and operated (with no VOCs currently present) or a hydrogeologic assessment (Apdx D) needs to determine that the risk of well contamination is limited, due to geological conditions.
2. For setbacks 300 feet or less, VOC treatment must be installed and operated (with no VOCs currently present).

This policy is a point of balance between the DEP, the DWP, and the public who wants to run a business in an area where existing UST’s present an elevated risk.

There were several options considered and points of concern raised during the development of this policy. The following is a list of issues and decisions made.

- Issue: Why are we requiring VOC treatment without the known presence of VOCs?

Decision: The DEP would not approve waivers unless the risk to using the groundwater fund was made similar to having a 1000 foot setback. The installation of treatment accomplishes this. Without the requirement to install treatment, when a contamination event occurred, the DEP would be required to cover the cost of installing treatment instead of the PWS owner. When a PWS owner develops a business in a high-risk area (less than 1,000 feet from an existing UST), it is reasonable for the PWS to assume the cost of mitigating this risk to their own public drinking water supply.

- Issue: Can't we require the PWS to have an escrow account to pay for the treatment if it is needed, instead of requiring that the treatment be installed before known contamination?

Decision: After consideration, this was interpreted as the DWP putting a condition on the use of the (DEP) groundwater cleanup fund, which we cannot do. For example, when a contamination event occurs, this would require the owner to pay for the cleanup instead of the groundwater cleanup fund, which is the purpose of this fund by statutory requirement. We did not feel that we were legally able to require an escrow account.

- Issue: We never require treatment without a positive sample that makes the treatment necessary... the treatment is not required by the Safe Drinking Water Act (SDWA)... how do we have the authority to do this?

Decision: In order to provide a way for a business to operate with a reduced well to UST setback, we must provide a method that is agreeable to both the DWP and the DEP, as both departments must approve the waiver. Given the risk to the groundwater fund, the DEP will not approve a waiver without mitigating the risk. Having the PWS install treatment enables the DEP to accept that the risk to the groundwater clean up fund has been mitigated acceptably, allowing them to agree to the setback waiver. To accept the issuance of a requirement to install treatment when it is not required by the SDWA, one must consider that the DEP and DWP must jointly approve a UST Setback waiver.

- Issue: Why does the PWS have to operate the VOC treatment equipment instead of just having it installed in case there is a spill?

Decision: Given that a reduced setback is present, the risk to public health has increased. The identification of a spill is not automatic and may only be found through routine, required, raw drinking water samples (before treatment) that are taken on a semiannual or annual basis. Operating the VOC equipment enables the health effects of a spill to be controlled/eliminated before the spill is identified. In this case, public health will be protected from an undiscovered spill, in a physical setup that has higher than normal risk due to the reduced setback. Additionally, the VOC equipment is not "used up" by treating uncontaminated water so the treatment system can be expected to last a long time.

After developing a UST Setback Waiver Policy in 2010 that was acceptable to both the DEP and DWP, some of the issues above were again brought to the table for debate regarding our efforts to reduce the regulatory burden placed on PWSs. The subgroup involved with UST setback issues again came to the same conclusions on what an acceptable policy would be for approving a UST setback waiver. Acceptance of the policy is not unanimous and without disagreement, but a basic, general consensus was achieved in the subgroup on the acceptance of the policy, considering the many factors described above.

Addendum to Appendix C 8-9-12

A decision has been made to reduce the financial impact for PWSs that have non-detect VOCs by allowing the VOC treatment canisters to be installed empty and bypassed, until VOC treatment is necessary. If VOCs are detected below MCLs, the DWP may recommend or require treatment, based on the level of VOC contaminants.

Appendix D General Steps of a Hydrogeologic Assessment

When a hydrogeologic assessment is either required or requested as part of a setback waiver request:

1. The DWP Field Inspector contacts DWP Geologist to provide known site related information.
2. The DWP Geologist determines if enough information is known to justify a setback waiver, and also potentially to waive a formal hydrogeologic assessment.
 - If enough information is known that justifies a setback waiver, the field inspector fills out the Well to Contamination Source Setback Waiver Form (DWP0150) and sends it to the DWP Geologist to record any necessary waiver conditions and to sign the waiver. The waiver is granted. (See note below).
 - If not enough information is known to justify a setback waiver, the field inspector informs the PWS that they must hire a Maine Certified Geologist to complete a hydrogeologic assessment. The PWS can call the DWP Geologist to discuss the hydrogeologic assessment process. The hired geologist should first call the DWP Geologist to discuss the specific geological conditions at the site. It is possible that due to unfavorable geological conditions, further geological study is not warranted (see note below), and subsequent effort should be focused on acceptable risk mitigation such as drilling a new well or installing septic pretreatment. This may occur without requiring the cost of a detailed hydrogeologic assessment and report. It is also possible that further hydrogeologic assessment will record that geologic conditions warrant a waiver, with or without well construction requirements. In this case a report from a Certified Maine Hydrogeologist must be submitted to the DWP Geologist for review and approval, or disapproval. If the hired geologist is in contact with the DWP geologist about findings and options developed during the study, the assessment should end up identifying a best plan for acceptable risk mitigation, which reduces the chance of a plan simply being denied.

Note: The Maine Rules Relating to Drinking Water give the opportunity for the DWP to waive the request for a hydrogeologic assessment from a Maine Certified Hydrogeologist