



**FINAL COST-BENEFIT AND LEAST
BURDENSOME ALTERNATIVE ANALYSIS**

for

**Chapter 173-160 WAC—Minimum Standards for Construction and
Maintenance of Wells**

**Chapter 173-162 WAC – Rules and Regulations Governing the Regulation
and Licensing of Well Contractors and Operators**

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1. BACKGROUND

The rule amendments revise two existing regulations pertaining to well construction standards and professional licensing of well drillers.

- The standards for well construction (Chapter 173-160 WAC) identify specific construction requirements that all wells must meet in order to protect public health, safety, and welfare as well as to protect the ground water resource. The changes to the standards for well construction and driller licensing are required by legislative mandate (Chapter 18.104 RCW). The proposed rule changes maintain consistency with the drilling statute and bring the rule up to a level which is current given changes in drilling industry and technology advances. Most amendments to the rules were driven by driller request and the need to clarify the existing rules.
- The licensing rule (Chapter 173-162 WAC) provides for the administration of the licensing of Washington State well drillers. Ecology is proposing to increase licensing fees from \$20.00 every two years to \$75.00 every two years. Changes to the “standards for well construction” involve changes to the definition section; expansion of some of the technical areas; statutory changes in drilling fees; and improvement to the organization of certain sections. With the exception of licensing fees, changes to the licensing regulations are all required by statute. They include:
 - development of rules to conduct an annual review of those counties that have delegated authority to inspect wells;
 - development of an inactive and retirement license; and
 - clarification and improvement to the current continuing education program.

Ecology utilized the Technical Advisory Group (TAG), which was established by the 1993 legislature, to assist it in the development of these rules. The TAG started work on the rule revisions in 2002. The TAG consists of 6 licensed drillers, 2 State Department of Health agency staff, 2 Ecology staff, an engineer, and a hydrogeologist. Ecology also conducted a series of workshops to get driller input on the rule amendments. Further involvement included mail outs and public hearings. In addition, the 2005 legislature enacted changes to the drilling statute (Chapter 18.104 RCW) and these were incorporated into the two rules.

As required in the RCW 34.05.328(1) (d), before adopting the proposed rule amendments, the director of Ecology must make the following determination:

Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

To fulfill the statutory requirement, this cost benefit analysis evaluates whether or not the probable benefits resulting from the rule amendments are greater than the probable costs. The analysis relies upon both qualitative and quantitative methods to reach a conclusion regarding the effect of the rule amendments and concludes that the probable benefits exceed the probable costs.

2. COMPARISON OF THE RULES

The goal of a cost benefit analysis is to analyze the difference between the situation without the rule amendments and the expected situation with the rule amendments. A comparison requires a baseline scenario which describes the situation without the rule amendments. The baseline used in this analysis is the situation under the current Washington Administration Code for Chapter 173-160 WAC and Chapter 173-162 WAC. The baseline and all changes to these two rules can be found in Appendix A - Table 1 and Table 2.

2.1 Impacts on Ground Water and Surface Water

Proper well construction and licensing technically competent individuals reduces toxic threats and helps manage water resources. Improperly constructed wells can deplete an already taxed ground water resource.

- Proper well construction also plays a significant role in reducing the amount of pollution getting into the ground water resource, thus reducing the toxic threat to this resource.
- One leaking or uncapped flowing well can significantly reduce the amount of available ground and surface water in a basin. This makes water management an even more difficult task.

2.2 Impacts on Wells, Construction and Maintenance

Chapter 173-160 WAC rule changes primarily deal with clarifications of rule language and definitions. These rule language changes have either no economic impacts or no measurable impacts. These clarifications of rule language are listed in Appendix Table 1 and are exempt from this analysis under RCW 34.05.328 (5)(b)(iv).

Other sections within Chapter 173-160 WAC include fee increases for construction of specific types of wells and decommissioning. These fee changes were defined by the Washington State Legislature in 2005 with no discretion given to Ecology. The increase in these fees will not be analyzed in this document per exemption in RCW 34.05.328 (5)(b)(v).

Chapter 173-160-040(2) WAC. Regulation Relating to Other Authorities. This rule amendment will require drillers to contact county offices that have delegation of the well inspection program. This practice has been in place for some time and is now placed in rule to give Ecology authority to help counties that do not get notified by drillers. This is currently required by most counties and has costs below a minimum threshold for analysis.

Chapter 173-160-171(3)(b)(vi) WAC. Requirements for the Location of the Well Site and Access to the Well. This rule amendment clarifies the boundary of the variance. It will now be 1000 feet from the boundary of a permitted solid waste landfill as defined by the permit or 1000 feet from the property boundary of an un-permitted solid waste landfill for the variance.

Chapter 173-160-191(16) WAC. The Design and Construction Requirements for Completing a Well. For wells completed in an unconsolidated formation in which the bore hole extends beyond the casing or screen, the rule amendment requires the driller to backfill that portion of the bore hole that extends more than 10 feet beyond the casing or screen. The backfill shall consist of either bentonite or chlorinated sand or pea gravel. If any portion of the bore hole extension penetrates a clay layer which is greater than 6 feet in thickness, that portion of the bore hole shall be sealed with bentonite. This is currently a standard practice in the industry and will not be analyzed from old rule language.

Chapter 173-160-381 WAC. Standards for Decommissioning a Well. This rule amendment defines the correct procedure for well decommissioning and sealing. This includes cased and uncased drilled wells, dug wells, and artesian wells.

Chapter 173-160-451 WAC. New Section. Minimum Standards for Direct Push Resource Protection Well. This new section sets the standards for the installation of resource protection wells using direct push technology. The rule clarifies typical industry standards for the utilization of this type of equipment and is, therefore, exempt from this cost benefit analysis.

Chapter 173-160-453 WAC. New Section. Minimum Standards for Construction of Ground Source Heat Pump Borings. The legislature mandated a new definition for ground source heat pump borings and associated fees for construction of these wells. This amendment establishes standard construction practices for the installation of this type of well. They are definitional in nature by clarifying currently accepted industry standards, definitions and practices and are, therefore, exempt from this cost benefit analysis.

Chapter 173-160-456 WAC. New Section. Minimum Standards for Construction of Grounding Wells. The legislature mandated a new definition for grounding wells and associated fees for construction of these wells. This rule amendment establishes standard construction practices for the installation of this type of well. They are definitional in nature by clarifying currently accepted industry standards, definitions, and practices, therefore exempt from this cost benefit analysis.

2.3 Impacts on licensing Well Contractors and Operators

Chapter 173-162-060 WAC. Qualification for Each License. This rule amendment increases application fees from \$20 to \$75 for each category of license (Water Well Operator and Resource Protection Well Operator) and for training and first time applicant's licenses. Licenses are valid for two years.

This rule amendment increases renewal fees from \$25 to \$75 for each category of license (water well operator and resource protection well operator). Licenses are valid for two years.

This amendment also establishes two additional licenses, the "Inactive license" and the "Retirement license", which will have a \$75 application fee.

3. QUANTIFICATION OF THE BENEFITS AND COSTS

Quantification of the benefits and costs is necessary to determine that the probable benefit of implementing these rule amendments is greater than its costs. However, some benefits or costs are difficult to quantify accurately, or cannot be quantified. In these cases, this analysis intends to be conservative, estimating the lower benefit boundaries and upper cost boundaries of the rule amendments.

All the benefits and costs quantified are one time benefits and costs in the life time of a well. In this analysis, Ecology assumes that standards for construction and maintenance of wells and regulation of licensing of well contractors and operators are both essential for reducing toxic threats to the groundwater resource thus providing for the safety and health of the public. The complete and overall economic benefits of a safe water resource are beyond the scope of this analysis in magnitude.

3.1 The Benefits

Clarifying the variance boundary for a well site in Chapter 173-160-171(3)(b)(vi) WAC may affect 2-3 property owners per year. These property owners would not have to hire a hydrogeologist to determine that it will not further degrade the environment or cause a public health risk by having a solid waste landfill near the variance boundary. Ecology estimates this could save property owners as much as \$5,000 annually.

The proposed modifications to Chapter 173-160-381 WAC have multiple benefits. Proper well construction and decommissioning plays a significant role in reducing the amount of pollution getting into the ground water resource, thus reducing the toxic threat to this resource. This unquantifiable benefit will not be covered in this analysis but has enormous economic benefits.

The most immediate benefit to landowners for the proposed decommissioning standards would be the ability to use the 100 foot radius that would be “unusable” under the current rule for any use that creates a potential source of contamination. Previously this eliminated construction such as septic systems, livestock pens, other wells, surface waste, etc. (see Appendix Table 3). Ecology estimates 200-300 wells which are regulated under Chapter 173-160-381 WAC will be affected by this proposed new standard per year including artesian and hand dug wells. The economic benefit for usage of this 100 foot radius from a well (.72 acre) is conservatively estimated at \$36,000 for land in Washington State¹. The benefits for Washington State landowners is estimated to be between \$7.2 and \$10.8 million annually. Additional economic benefits to landowners are the elimination of liability from potentially contaminating the groundwater resource by not decommissioning their well properly. This benefit will not be quantified.

The proposed new sections Chapter 173-160-454 WAC including “Ground Source Heat Pump Borings” and Chapter 173-160-458 WAC “Grounding Wells” has the economic benefit of reducing the toxic threat to the ground water resource from the drilling of these types of wells to the currently accepted industry standard.

Chapter 173-162-060(5) and (6) WAC. Conditional Licenses. The new “Inactive” license category has minimal benefits. This license basically allows a driller to retain his “driller number” and not be subject to the requirements of an active driller for up to two years. An inactive license does not allow any of the benefits of an active operator. The inclusion of the inactive license allows eligible participants to not have to complete continuing education classes while in inactive status. This person would also be able to renew their

¹ Ecology survey of developed land value for Pierce, Thurston, Lewis, Skagit, and Chelan counties.

“operator” license without having to go back and get a training license, go through the training requirements or retake the written exam.

Chapter 173-162-080 (4) WAC. Renewing a Drilling License. This provision has theoretical and minor beneficial economic impacts to all licensed drillers that do not renew their license on time. There is now a 30-day suspension period that will allow licensed drillers to submit appropriate paperwork without going through the licensing process (application, fee, and testing) again. Participants are expected to apply for their license on time. The 30-day “grace period” can have minor economic benefits. These benefits are unquantifiable as the small number that could benefit cannot be determined.

3.2 The Costs

The primary costs associated with these rule amendments are the increase in fees for licensing of well contractors and operators. Two additional licenses are proposed. The “Inactive license” and the “Retirement license” will also have a \$75 application fee.

Chapter 173-160-191(16). Design and Construction Requirements for Completing Wells. For wells completed in an unconsolidated formation in which the bore hole extends beyond the casing or screen, the rule amendment requires the driller to backfill that portion of the bore hole that extends more than 10 feet beyond the casing or screen. The backfill shall consist of either bentonite or chlorinated sand or pea gravel. If any portion of the bore hole extension penetrates a clay layer which is greater than 6 feet in thickness, that portion of the bore hole shall be sealed with bentonite. Although there may be some minor costs, compared to previous rule language, there is no way for Ecology to determine how many wells this could affect as it has always been common practice to drill past the end of the casing in search of additional flow. This has been the standard and accepted practice in the industry and will not be analyzed from old rule language.

Chapter 173-160-381(2) WAC and Chapter 173-160-381(4) WAC. Standards for Decommissioning a Well. Defining the correct procedure for decommissioning and sealing wells will have additional costs. Ecology estimates 200-300 wells annually will need to be decommissioned in Washington State. The well program estimates costs of decommissioning a well by backfilling instead of perforating at \$2,000 per well². A lower range of 150 to 250 wells could be decommissioned under the new guidelines. Cost estimates to landowners would be \$300,000- \$500,000 annually.

Chapter 173-160-073 WAC. New Section. Annual Review. This new section requires that Ecology conduct an annual review of the delegated agreements in those counties that have delegated authority to inspect water wells. The costs associated with these inspections will

² Dick Szymarek, Well Drilling lead Dept of Ecology.

be born by Ecology and the delegated counties. Those costs could range from \$12,000 to \$16,000 for Ecology. This is based on a fixed cost of \$50/hour for 2 staff or \$800 per day per county to meet with counties, assemble data, and prepare the reports. The county expenses would range from \$3,000 to \$5,000 per county. These costs include the time spent by the counties to prepare for meetings and to attend the meetings. They are based on \$100/hour for 2 staff to meet with Ecology (meetings last approximately 2 hours).

Chapter 173-162-060 WAC Licensing Fees. Application fees will be increased from \$25 to \$75 for each category of license (water and resource protection) and renewals will increase from \$20 to \$75. Well licenses are in effect for two years. The primary costs associated with this rule amendment are the increase in fees for licensing of well contractors and operators. Two additional licenses are proposed - the “Inactive” license and the “Retirement” license -which will have a \$75 application fee.

License	Old Fee	Proposed Fee	Estimated Annual # licenses	Estimated NET Costs
Water Well Operator (Training)	\$25	\$75	30	\$1,500
Water Well Operator (New)	\$25	\$75	30	\$1,500
Water Well Operator (Renewal)	\$20	\$75	240	\$13,200
Resource Protection Well Operator (Training)	\$25	\$75	30	\$1,500
Resource Protection Well Operator (New)	\$25	\$75	30	\$1,500
Resource Protection Well Operator (Renewal)	\$20	\$75	200	\$11,000
Conditional			1	
Inactive		\$75	2	\$150
Retirement		\$75	2	N/A ³
TOTAL 2 YEAR NET COSTS				\$30,350
TOTAL ANNUAL NET COSTS				\$15,175

Chapter 173-162-085 WAC. Continuing Education. Under this rule amendment, Ecology will no longer be a continuing education provider. An estimated 560 well drillers (out of the 700+ total) annually received their necessary continuing education units from Ecology at a rate of \$25 per the required 7 CEUs. Continuing education would now be available from other providers⁴. One of the primary provider’s costs range from \$75 – 125. An estimated \$28,000 - \$56,000 additional continuing education expenses would be shifted to well drillers of Washington State.

³ Not analyzed. Not required, gives no well drilling privileges.

⁴ Washington State Groundwater Association, NOAA, etc.

4. CONCLUSIONS

The rule amendments for well construction under Chapter 173-160 WAC and driller licensing under Chapter 173-162 WAC are in part required by changes to RCW 18.104, the Well Drilling Statute. The rule amendments maintain consistency with the drilling statute, are current with changes in drilling technology and industry, and clarify the existing rules. These rule amendments provide modest increases to the license application fees as well as changes to continuing education providers.

Ecology has determined that proper well construction and licensing technically competent individuals has enormous health benefits to the people of Washington State and its groundwater resource. Proper well construction plays a significant role in reducing the amount of pollution getting into the ground, and as shown in this analysis, proper decommissioning of wells can have net benefits to property owners of over \$7 million annually.

Although driller licenses were separated in 1998, the fee for each category of license has not been raised for over thirty years. The raising of the license fees to \$75 only marginally offsets the cost of the program to Washington well drillers. Net costs to drillers are estimated to be just over a half a million for the proposed rule changes. We do not analyze how these costs may be passed on to customers. Both these rules will help to improve our ability to manage water and reduce toxic threats by having skilled drillers drilling better wells. Although the overall benefit for having safe wells and well operators cannot completely be quantified, it's clear that the benefits of these rule changes greatly out way the costs.

5. LEAST BURDENSOME ANALYSIS

RCW 34.05.328 (1)(e) requires Ecology to perform a Least Burdensome Analysis to:

“Determine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection.”

These rules directly impact well drillers in Washington and the 14 counties that have delegated authority to inspect wells. Additionally, future well owners, local and state agencies (Health), and consultants/engineers could all have an interest.

The drillers are directly impacted by the changes in the construction rule and the driller licensing rule. Drillers will have a concern regarding the specific construction changes that

will impact how wells are constructed, the changes to the continuing education program and how it will impact their license renewal and licensing fees. Counties will be interested in the new requirement to conduct an annual performance audit as part of the delegation program since it affects them. The audit is intended to identify the level of success each county achieved in their inspection program.

Ecology looked at alternative language for the regulations in the following areas:

Well Construction

- For dug wells under Chapter 173-160-381 WAC, Ecology allowed for additional combinations of sealing materials which will provide more options for decommissioning of hand dug wells.
- For siting of wells adjacent to permitted landfills under Chapter 173-160-171 WAC, Ecology identified the need to measure the distance of the 1,000 foot setback from said permitted landfill to the well site rather than from the property boundary. This has a potential of greatly reduce the need for technical assistance when determining potential impacts.

Licensing.

- Originally, the TAG voted to have licensing fees range from \$100 for a single license to \$300 for a late renewal, however, Ecology decided to set the fees at \$75 rather than increase them to the higher amounts.
- The grading matrix utilized for establishing continuing education unit values was generalized to allow a broader range of subject matter to be included for credit rather than the current grading structure.

APPENDIX

Table 1. Chapter 173-160 WAC—Standards for construction and maintenance of wells

CURRENT LANGUAGE	PROPOSED RULE LANGUAGE	ANALYSIS
WAC 173-160-010 - Purpose of the Regulation		
WAC 173-160-010 (2)(a) Any excavation that is not intended to locate, divert, artificially recharge, observe, monitor, dewater, or withdraw ground water for agricultural, municipal, industrial, domestic, or commercial use except resource protection wells and geotechnical soil borings.	(2)(a) Any excavation that is not intended to locate, divert, artificially recharge, observe, monitor, dewater, or withdraw ground water for agricultural, municipal, industrial, domestic, or commercial use except resource protection wells, <u>ground source heat pump borings, grounding wells,</u> and geotechnical soil borings.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-010 (2)(c) Injection wells regulated in chapter 173-218 WAC.	(2)(c) Injection wells regulated in chapter 173-218 WAC, except for those wells that are used to withdraw groundwater. <u>NOTE EXCEPTION: Injection wells used to withdraw groundwater and remediation wells that are used to inject any substance items to remediate, clean up, or control potential or actual contamination may be are regulated by chapter 173-218 WAC and chapter 173-160 WAC.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-010(2)(d) - Infiltration or exfiltration galleries, trenches, ponds, pits, and sumps.	(2)(d) Infiltration or exfiltration galleries, trenches, ponds, pits, and sumps, <u>except where the Department determines that the intended use of the excavation meets a definition in RCW 18.104.020.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-010(2)(e) – New subsection.	(2)(e) <u>Grounding wells and grounding rods that are installed to a depth of twenty-five feet or less.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-040(2) (2) Well contractors shall be familiar with all state and local well construction requirements for their job sites prior to initiating construction.	(2) Well contractors shall be familiar with all state and local well construction requirements, <u>and existing and approved site plans, to include septic permits,</u> for their job sites prior to initiating construction. <u>Drillers working in counties that have delegated authority to</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv). Will require drillers to contact county offices that have delegation of the well inspection

	<u>inspect wells are reminded to shall check with the county environmental health section for inspection requirements. Drillers are required to obey all county notification and reporting requirements.</u>	program. Placed in rule to give Ecology authority to help counties that do not get notified by drillers.
WAC 173-160- 073 - New Section.	<p><u>The department will, on an annual basis, review each of the local health jurisdictions or counties, interagency agreements. The review shall include an audit of the construction inspections, decommissioning inspections, enforcement activities, variance decisions, training needs, technical assistance, coordination with drillers and other driller interactions that occurred during the year. The review will also address the need to update or otherwise change portions of the delegation agreements.</u></p> <p><u>The department will summarize the reviews into an annual report. The report will be completed no later than April 1 of each year. The completed report will be available to the public upon request and posted on the department’s website.</u></p>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-101 – General Standards that Apply to All Water Wells		
WAC 173-160-101 (1) It is necessary in some cases to construct and decommission wells with additional requirements beyond the minimum standards. Additional requirements may be necessary when the well is constructed or decommissioned in, or adjacent to a known, or potential source of contamination. Examples of sources, or potential sources of contamination are found in the well siting section, WAC 173-160-171.	(1) It is necessary in some cases to construct and decommission wells with additional requirements beyond the minimum standards. Additional requirements may be necessary when the well is constructed or decommissioned in, or adjacent to a known, or potential source of contamination. Examples of sources, or potential sources of contamination are found in the well siting section, WAC <u>173-160-171</u> .	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

WAC 173-160-106 Variance on a Water Well		
WAC 173-160-106(3) New subsection.	<u>(3) At the Department’s discretion, the proponent may be required to provide additional technical information justifying the variance.</u>	May cause drillers extra work to justify variance. Unable to determine impact.
WAC 173-160-111 Definitions		
WAC 173-160-111(1) “Abandoned well” means a well that is unused, unmaintained, and is in such disrepair as to be unusable.	(1) “Abandoned well” means a well that is unused unmaintained, and or <u>is in such disrepair as to be unusable or is a risk to public health and welfare.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (9) New definition.	<u>(9)"Building Drain" means that part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning two (2) feet outside the building wall.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (10) New definition.	<u>(10)"Building Sewer" means that part of the horizontal piping of a drainage system which extends from the end of the building drain and which receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage disposal system, or other point of disposal.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(12) "Casing" is a pipe, generally made of metal or plastic, which is installed in the bore hole to maintain the opening.	(12) "Casing" is a pipe, generally made of metal or plastic, which is installed in the bore hole <u>as part of the drilling process</u> to maintain the opening. <u>Casing may be utilized in either consolidated or unconsolidated formations and must which meet the requirements of WAC 173-160-201.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(12) "Constructing a well" or "construct a well" means: (a) Boring, digging, drilling, or excavating a well; (b) Installing casing, sheeting, lining, or well screens, in a well; or	(12) (14) "Constructing a well" or "construct a well" means: (a) Boring, digging, drilling, or excavating a well; (b) Installing casing, sheeting, lining, or well screens, in a well; or (c) Drilling a geotechnical soil boring.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

(c) Drilling a geotechnical soil boring. "Constructing a well" or "construct a well" includes the alteration of an existing well.	(d) Installing an environmental investigation well. "Constructing a well" or "construct a well" includes the alteration of an existing well.	
WAC 173-160-111(20) New definition	<u>(20) "Design pumping rate" means the maximum pumping rate as determined by the well driller, without exceeding the department's policy on sand and turbidity.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(23) - "Disinfection" or "disinfecting" is the use of chlorine, or other disinfecting agent or process approved by the department, in sufficient concentration and contact time adequate to inactivate coliform or other indicator organisms.	(23) "Disinfection" or "disinfecting" is the use of chlorine, or other disinfecting agent or process approved by the department, in sufficient concentration and contact time adequate to inactivate coliform or other indicator organisms. <u>Disinfection sanitization of a well, pump or piping means to render harmless any micro-biological agents that pose a risk to human health that may come from the construction, installation, development or repair of a well.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC173-160-111 (27) New definition.	<u>(27) "Drilling Log" means a water or resource protection well report.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (32) New definition.	<u>(32) "Ground source heat pump boring" means a vertical boring constructed for the purpose of installing a closed loop heat exchange system for a ground source heat pump.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(27) "Ground water" means and includes ground waters as defined in RCW 90.40.035.	(33) "Ground water" means and includes ground waters as defined in RCW 90.40 <u>44</u> .035.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (33) New definition.	<u>(34) "Grounding well" means a grounding electrode installed in the earth by the use of drilling equipment to prevent buildup of voltages that may result in undue hazards to persons or equipment. Examples are anode and cathode protection wells.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(30) "Liner" means	(37) "Liner" means <u>any device</u> a pipe inserted into a	Clarification

any device inserted into a larger casing, screen, or bore hole as a means of maintaining the structural integrity of the well.	larger casing, screen or bore hole, <u>after the drilling process has occurred</u> , as a means of maintaining the structural integrity of the well. <u>Liners may only be used in consolidated formations and must meet the requirements of WAC 173-160-201.</u>	Exempt: RCW 34.05.328 (5)(b)(iv). Can reduce the amount of wells improperly sealed in gravel zones. Little effect.
WAC 173-160-111 (37) New definition.	(38) " <u>Maximum Pumping Rate</u> " means the maximum pumping rate, as determined by the well driller, without exceeding the department's policy on sand and turbidity."	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (38) New definition.	(39) " <u>Operator</u> " means a person who (a) is employed by a well contractor; (b) is licensed under this chapter; or (c) who controls, supervises, or oversees the construction of a well or who operates well construction equipment.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111 (39) New definition.	(40) " <u>Owner</u> " or " <u>well owner</u> " means the person, firm, partnership, copartnership, corporation, association, other entity, or any combination of these, who owns the property on which the well is or will be constructed or has the right to the well by means of an easement, covenant, or other enforceable legal instrument for the purpose of benefiting from the well.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC173-160-111(36) "PVC" means polyvinyl chloride, a type of thermoplastic casing.	(46) "PVC" means polyvinyl chloride, a type of thermoplastic casing <u>or liner</u> .	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(38) "Temporary surface casing" is a length of casing (at least four inches larger in diameter than the nominal size of the permanent casing) which is temporarily installed during well construction to maintain the annular space.	(48) " <u>Temporary surface casing</u> " is a length of casing (at least four inches larger in diameter than the nominal size of the permanent casing) which is temporarily installed during well construction to maintain an the annular space <u>for later placement of the surface seal as described in WAC 173-160-275, -285, -305, and -315. The temporary surface casing shall be removed at or before well completion.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-111(53) "Water well" means any excavation that is	(53) " <u>Water well</u> " means any excavation that is constructed when the intended use of the well is for the	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

<p>constructed when the intended use of the well is for the location, diversion, artificial recharge, observation, monitoring, dewatering or withdrawal of ground water for agricultural, municipal, industrial, domestic, or commercial use.</p>	<p>location, diversion, artificial recharge, observation, monitoring, dewatering or withdrawal of ground water for agricultural, municipal, industrial, domestic, or commercial use. <u>“Water wells” include ground source heat pump borings and grounding wells.</u></p>	
<p>WAC 173-160-111 (5554) New definition.</p>	<p>(5554) “Water Well Report” means a document that describes how a water well, ground source heat pump, or grounding well was constructed or decommissioned and identifies components per the requirements of WAC 173-160-141. Ground source heat pump borings and grounding wells are reported using Resource Protection Report forms.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-111(57) New definition.</p>	<p>(57) “Well contractor” means a resource protection well contractor and water well contractor licensed and bonded under Chapter 18.27 RCW.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-111(48) "Well" means water wells, resources protection wells, instrumentation wells, dewatering wells, and geotechnical soil borings. Well does not mean an excavation made for the purpose of obtaining or prospecting for oil or natural gas, geothermal resources, minerals, or products of mining, or quarrying, or for inserting media to repressure oil or natural gas bearing formations, or for storing petroleum, natural gas, or other products.</p>	<p>(58).“Well” means water wells, resources protection wells, instrumentation wells, dewatering wells, and geotechnical soil borings. Well does not mean an excavation made for the purpose of obtaining or prospecting for oil or natural gas, geothermal resources, minerals, or products of mining, or quarrying, or for inserting media to repressure oil or natural gas bearing formations, or for storing petroleum, natural gas, or other products.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-111(60) New definition.</p>	<p>(60) “Well Screen” means a device, usually made of plastic or metal that is capable of preventing unconsolidated or poorly consolidated geologic material from entering the well. The size of the material which is prevented from entering the well is predetermined and</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

	<u>controlled by the screen opening or slot size of the screen. A well screen may include a riser pipe.</u>	
WAC 173-141 – Requirements Regarding Water Well Reports		
WAC 173-160-141(1) Anyone who constructs a well is required to submit a complete report on the construction, alteration, or decommissioning of the well to the department within thirty days after completion of a well, or after the drilling equipment has left the site.	(1) Anyone who constructs <u>or decommissions</u> a well is required to submit a complete report on the construction, alteration, or decommissioning of the well to the department <u>Water Resources Program</u> within thirty days after completion of a well, or after the drilling equipment has left the site. <u>Submission of well report to consulting firms does not meet the well contractor’s obligation of this section.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-141(1)(u) New subsection.	<u>(1)(u) Water right permit or certificate number for all wells that are not exempt under RCW 90.44.050.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-141(4) If a well report is missing, a new report may be generated. This report shall contain all physical components of the well and report all available information in accordance with this section. The report shall be signed by the individual collecting the physical information of the well.	(4) If a well report is missing, a new report may be generated. This report shall contain all physical components of the well and report all available information in accordance with this section. The report shall be signed by the individual collecting the physical information of the well. <u>Submittal of this report does not relieve the person who constructed the well of their obligation to submit a complete well report under part (1) of this section.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-151 – Prior Notice and Fees for Constructing, Reconstructing, or Decommissioning a Water Well		
WAC 173-160-151(3) In an emergency, a public health emergency, or in exceptional instances, the department may allow verbal notification to the appropriate regional office, with a start	(3) In an emergency, a public health emergency, or in exceptional instances, the department may allow verbal notification to the appropriate regional office, with a start <u>and notice of intent</u> written notification follow-up and payment of fee submitted within twenty-four hours. An	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

card written notification follow-up and payment of fee submitted within twenty-four hours. An emergency situation may consist of a failing well, or water quality issues which could result in a public health or safety concern.	emergency situation may consist of a failing well, or water quality issues which could result in a public health or safety concern.	
WAC 173-160-151 (4)(a) The fee for one new water well, other than a dewatering well, with a top casing diameter of less than twelve inches is one hundred dollars.	(4)(a) The fee for one (new) water well, other than a dewatering well, with a top casing diameter of less than twelve inches is (one) <u>two</u> hundred dollars. <u>This fee does not apply to a ground source heat pump boring or a grounding well.</u>	Will have effect. Fee went from \$100 to \$200. Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-151(4)(b) The fee for one new water well, other than a dewatering well, with a top casing diameter of twelve inches or greater is two hundred dollars.	(4)(b) The fee for one (new) water well, other than a dewatering well, with a top casing diameter of twelve inches or greater is (two) <u>three</u> hundred dollars.	Will have effect. Fee went from \$200 to \$300. Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-151(4)(c) New language.	(4)(c) <u>The fee for a ground source heat pump boring or a grounding well is forty dollars for construction of up to four ground source heat pump borings or grounding wells per project and ten dollars for each additional ground source heat pump boring and grounding well constructed on a project with more than four wells. resource protection well, except for an environmental investigation well, a ground source heat pump boring, or a grounding well, is forty dollars for each well.</u>	No change. Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-151(4)(d) New language	(4)(d) <u>The fee for an environmental investigation well in which ground water is sampled or measured is forty dollars for the construction of up to four environmental investigation wells per project, ten dollars for each additional environmental investigation well constructed on a project with more than four wells. There is no fee for soil or vapor sampling purposes.</u>	No change. Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v). Moved WAC 173-160-420.
WAC 173-160-151(4)(e) New language	(4)(e) <u>The fee for a ground source heat pump boring or a</u>	No change. Legislative Mandate,

	grounding well is forty dollars for construction of up to four ground source heat pump borings or grounding wells per project and ten dollars for each additional ground source heat pump boring or grounding well constructed on a project with more than four wells.	Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v). Moved to WAC 173-160-420.
WAC 173-160-151(4)(ge) There is no fee for decommissioning a water well.	(4)(de) There is no fee to for decommissioning a water well is <u>fifty dollars.</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-151(4)(h) New language.	(4)(h) The fee to decommission a resource protection well, except for an environmental investigation well, is twenty dollars. There is no fee to decommission an environmental investigation well or a geotechnical soil boring.	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v). Moved to WAC 173-160-420.
WAC 173-160-151(4)(i) New language.	(4)(i) The fee to decommission a ground source heat pump boring or a grounding well is <u>twenty dollars.</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-151(6) A new notice of intent and fee shall be required on all follow-up construction after the drilling equipment has left the drill site.	(6) A new notice of intent and fee shall be required on all follow-up construction after the drilling equipment has left the drill site. The Department may waive the requirement for a new notice of intent on a case by case basis. The request for the waiver must be made to the Department prior to the removal of the drilling equipment from the site.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-151(7) A refund shall be made on any well that has not been constructed provided, a written request is made by the person who paid the fee and is submitted to the department within twelve months from the date the notice and fee were received by the department. A copy of the notice of	(7) A refund shall be made on any well that has not been constructed provided, a written request <u>on an approved form</u> is made by the person who paid the fee and is submitted to the department within twelve <u>six</u> months from the date the notice and fee were received by the department. A copy of the notice of intent receipt must accompany the request.	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).

intent receipt must accompany the request.		
WAC 173-160-161 – Planning and construction of Water Wells		
WAC 173-160-161(2) Not a conduit for contaminating the ground water nor a means of wasting water:	(2) Clarification Not a conduit for contaminating the ground water <u>or surface water</u> nor a means of wasting water;	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-171 - Requirements for location of the Well Site and Access to the Well		
WAC 173-160-171(3)(b)(i) Five feet from any building projection. Water wells shall not be located in garages or inhabited dwellings.	(3)(b)(i) Five feet from any <u>existing building structure, or building projection</u> . Water wells shall not be located in garages, <u>barns, storage buildings</u> or inhabited dwellings. <u>When locating a non-public water well adjacent to a building, the well location shall be measured from the building sewer and closest building projection.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-171(3)(b)(iii) Fifty feet from building sewers, collection and nonperforated distribution lines.	(3)(b)(iii) Fifty feet from <u>building sewers, public sewers, collection and nonperforated sewer distribution lines except those in or underneath a building, except building drains.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-171(3)(b)(vi) One thousand feet from the property boundary of a solid waste landfill.	(3)(b)(vi) One thousand feet from the property boundary of a <u>permitted or previously permitted (under Chapter 173-304, 173-306, 173-351, or 173-350 WAC) solid waste landfill as defined by the permit; or 1000’ from the property boundary of an unpermitted other solid waste landfills. Except, a variance may be granted if documentation is provided that demonstrates the construction and operation of the well adjacent to the landfill will not further degrade the environment and will not cause a public health risk. by the landowner of the unpermitted solid waste landfill that shows there is no</u>	Clarification. Minor benefits to land owners. Will help Ecology with a variance request.

	solid waste landfill located within one thousand feet from the property boundary.	
WAC 173-160-171 (5)-When a well is located in an area of known or potential contamination, the water well casing and seal shall be impervious to the contaminants.	(5) When a well is located in an area of known or potential contamination, the water well casing and seal shall be impervious to the contaminants	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-191 - Design and Construction Requirements		
WAC 173-160-191(12) Liners may be used in a natural development or gravel packed type construction.	(12) Liners may be used <u>only</u> in a <u>consolidated formation</u> . natural development or gravel packed type construction .	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-191 (15) The alignment of the permanent casing or liner shall be sufficiently plumb and straight to allow the installation of screens, liners, pumps, and pump columns without binding or having adverse affects on the operation of the installed pumping equipment.	(15) The alignment of the <u>borehole</u> , permanent casing, or liner shall be sufficiently plumb and straight to allow the installation of screens, liners, pumps, and pump columns without binding or having adverse affects on the operation of the installed pumping equipment.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-191(15)(b) The diameter of the test section of pipe shall be per Table 1 in WAC 173-160-201.	(15)(b) The diameter of the test section of pipe shall be per Table 1 in WAC <u>173-160-201</u> .	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-191 (16) New subsection.	<u>(16) For wells completed in an unconsolidated formation in which the borehole extends beyond the completed casing or screen depth, the driller must backfill that portion of the borehole that extends more than 10 feet beyond the casing or screen. The backfill shall consist of either bentonite or chlorinated sand or pea gravel. If any portion of the borehole extension penetrates a clay layer which is greater than 6 feet in thickness, that portion of the borehole shall be sealed with bentonite. A Notice of Intent to Decommission a Water Well is not required for</u>	Can have minor effect. Unable to determine how many wells would be affected by this as it is currently a standard industry practice.

	<u>this work.</u>	
WAC 173-160-201 Casing and Liner Requirements		
WAC 173-160-201(2) The casing shall withstand normal forces which act upon it during and after installation. It shall be resistant to the corrosive effects of the surrounding formations, earth, and water.	(2) The casing shall withstand normal forces which act upon it during and after installation. It shall be resistant to the corrosive effects of the surrounding formations, earth, and water <u>and shall be impervious to any contaminants encountered.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WQAC 173-160-201(3) All plastic casing for use in potable water supply wells must be manufactured to conform to National Sanitation Foundation (NSF) Standard 14-84, or the most recent revision.	(3) All plastic casing <u>or liner pipe for</u> used in potable water supply wells must be manufactured to conform to National Sanitation Foundation (NSF) Standard 14-84, or the most recent revision.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(4) Unless prior approval is obtained from the department, materials for well casings must be either steel casing as shown in Table 1 or plastic casing as shown in Table 2.	4) Unless prior approval is obtained from the department, materials for well casings and liner pipes must be <u>made of either steel casing as shown in Table 1 or plastic casing as shown in Table 2.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(5) New language.	<u>(5) Liner pipe must be of sufficient strength to withstand breakage or collapse when the well is pumped and meet ASTM potable water standards.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(6) New language.	<u>(6) When installed, liner pipe shall extend or telescope at least two feet into the lower end of the well casing. If more than one string of liner pipe is installed, each string shall extend or telescope at least eight feet into the adjacent larger diameter liner pipe.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(7) New language.	<u>(7) Liner pipe may not be permanently fixed to a well casing below land surface.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(5) Minimum	(8) Minimum specifications for steel casing and <u>steel</u>	Clarification

specifications for steel casing and pipe for water wells are shown in Table 1.	<u>liner pipe</u> for water wells are shown in Table 1.	Exempt: RCW 34.05.328 (5)(b)(iv).																																																																											
WAC 173-160-201 (6) New section.	<u>(9) Minimum specifications for plastic casing and plastic liner pipe</u> for water wells are shown in Table 2.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).																																																																											
	<p style="text-align: center;">TABLE 1 Minimum Specifications for Steel Casing and <u>Steel Liner</u> Pipe</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">NOMINAL SIZE (inches)</th> <th style="text-align: center;">OUTSIDE DIAMETER (inches)</th> <th style="text-align: center;">WALL THICKNESS (inches)</th> <th style="text-align: center;">WEIGHT PER FOOT (pounds)</th> <th style="text-align: center;">TEST SECTION OUTSIDE DIAMETER (inches)</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">1.25</td><td style="text-align: center;">1.660</td><td style="text-align: center;">0.140</td><td style="text-align: center;">2.27</td><td style="text-align: center;">0.500</td></tr> <tr><td style="text-align: center;">1.5</td><td style="text-align: center;">1.900</td><td style="text-align: center;">0.145</td><td style="text-align: center;">2.72</td><td style="text-align: center;">0.750</td></tr> <tr><td style="text-align: center;">2.0</td><td style="text-align: center;">2.375</td><td style="text-align: center;">0.154</td><td style="text-align: center;">3.65</td><td style="text-align: center;">1.000</td></tr> <tr><td style="text-align: center;">2.5</td><td style="text-align: center;">2.875</td><td style="text-align: center;">0.203</td><td style="text-align: center;">5.79</td><td style="text-align: center;">1.500</td></tr> <tr><td style="text-align: center;">3.0</td><td style="text-align: center;">3.500</td><td style="text-align: center;">0.216</td><td style="text-align: center;">7.58</td><td style="text-align: center;">2.000</td></tr> <tr><td style="text-align: center;">3.5</td><td style="text-align: center;">4.000</td><td style="text-align: center;">0.226</td><td style="text-align: center;">9.11</td><td style="text-align: center;">2.500</td></tr> <tr><td style="text-align: center;">4.0</td><td style="text-align: center;">4.500</td><td style="text-align: center;">0.237</td><td style="text-align: center;">10.79</td><td style="text-align: center;">3.000</td></tr> <tr><td style="text-align: center;">5.0</td><td style="text-align: center;">5.563</td><td style="text-align: center;">0.258</td><td style="text-align: center;">14.62</td><td style="text-align: center;">3.500</td></tr> <tr><td style="text-align: center;">6.0</td><td style="text-align: center;">6.625</td><td style="text-align: center;">0.250</td><td style="text-align: center;">17.02</td><td style="text-align: center;">4.000</td></tr> <tr><td style="text-align: center;">8.0</td><td style="text-align: center;">8.625</td><td style="text-align: center;">0.250</td><td style="text-align: center;">22.36</td><td style="text-align: center;">6.000</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">10.750</td><td style="text-align: center;">0.250</td><td style="text-align: center;">28.04</td><td style="text-align: center;">8.000</td></tr> <tr><td style="text-align: center;">12</td><td style="text-align: center;">12.750</td><td style="text-align: center;">0.250</td><td style="text-align: center;">33.38</td><td style="text-align: center;">10.000</td></tr> <tr><td style="text-align: center;">14</td><td style="text-align: center;">14.000</td><td style="text-align: center;">0.312</td><td style="text-align: center;">45.61</td><td style="text-align: center;">11.000</td></tr> <tr><td style="text-align: center;">16</td><td style="text-align: center;">16.000</td><td style="text-align: center;">0.344<u>0.375</u></td><td style="text-align: center;">57.52</td><td style="text-align: center;">14.000</td></tr> </tbody> </table>	NOMINAL SIZE (inches)	OUTSIDE DIAMETER (inches)	WALL THICKNESS (inches)	WEIGHT PER FOOT (pounds)	TEST SECTION OUTSIDE DIAMETER (inches)	1.25	1.660	0.140	2.27	0.500	1.5	1.900	0.145	2.72	0.750	2.0	2.375	0.154	3.65	1.000	2.5	2.875	0.203	5.79	1.500	3.0	3.500	0.216	7.58	2.000	3.5	4.000	0.226	9.11	2.500	4.0	4.500	0.237	10.79	3.000	5.0	5.563	0.258	14.62	3.500	6.0	6.625	0.250	17.02	4.000	8.0	8.625	0.250	22.36	6.000	10	10.750	0.250	28.04	8.000	12	12.750	0.250	33.38	10.000	14	14.000	0.312	45.61	11.000	16	16.000	0.344 <u>0.375</u>	57.52	14.000	No change in Table 1. Clarification Exempt: RCW 34.05.328 (5)(b)(iv) in Table 2.
NOMINAL SIZE (inches)	OUTSIDE DIAMETER (inches)	WALL THICKNESS (inches)	WEIGHT PER FOOT (pounds)	TEST SECTION OUTSIDE DIAMETER (inches)																																																																									
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18	18.000	0.375	70.59	16.000
20	20.000	0.375	78.60	18.000
24	24.000	0.375	94.62	20.000
30	30.000	0.375	118.65	24.000

TABLE 2

Minimum Specifications for Plastic Casing and Plastic Liner Pipe

<u>NOMINAL CASING DIAMETER (inches)</u>	<u>MINIMUM THICKNESS (inches)</u>	<u>SDR</u>
<u>2.0</u>	<u>0.13324</u>	<u>21</u>
<u>2.5</u>	<u>0.13724</u>	<u>21</u>
<u>3.0</u>	<u>0.16724</u>	<u>21</u>
<u>3.5</u>	<u>0.19024</u>	<u>21</u>
<u>4.0</u>	<u>0.21424</u>	<u>21</u>
<u>4.5</u>	<u>0.23624</u>	<u>21</u>
<u>5.0</u>	<u>0.26524</u>	<u>21</u>
<u>6.0</u>	<u>0.31624</u>	<u>21</u>
<u>8.0</u>	<u>0.41024</u>	<u>21</u>
<u>10</u>	<u>0.51124</u>	<u>21</u>
<u>12</u>	<u>0.60624</u>	<u>21</u>

WAC 173-160-201(7) All steel casing materials must be new or, in like new condition, and be structurally sound.	<p align="center"><u>STEEL CASING AND STEEL LINER</u></p> <p>(11) All steel casing <u>and steel liner materials</u> must be new or, in like new condition, and be structurally sound.</p>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(7)(a) Casing that has been exposed to a contaminant shall not be used in well construction unless	(11)(a) Casing <u>or liner</u> that has been exposed to a contaminant shall not be used in well construction unless	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

the contamination can be entirely removed.	the contamination can be entirely removed.	
WAC 173-160-201(7)(b) All steel well casing shall meet or exceed the minimum American Society for Testing and Materials (ASTM) A-53 A or B specification for steel pipe.	(11)(b) All steel well casing <u>or liner</u> shall meet or exceed the minimum American Society for Testing and Materials (ASTM) A-53 A or B specification for steel pipe.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(7)(ii) All steel well casing shall meet or exceed the minimum American Society for Testing and Materials (ASTM) A-53 A or B specification for steel pipe.	(11)(ii) All steel well casing <u>or liner</u> shall meet or exceed the minimum American Society for Testing and Materials (ASTM) A-53 A or B specification for steel pipe.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(8)) Plastic, fiberglass, PVC, SR, ABS, or other type of nonmetallic well casing must be manufactured and installed to conform with ANSI/ASTM F 480-81, Standard Dimension Ratio (SDR) 21 or the most recent revision.	<u>PLASTIC CASING AND PLASTIC LINER</u> (12) Plastic, fiberglass, PVC, SR, ABS, <u>CPVC</u> or other type of nonmetallic well casing <u>or liner</u> must be manufactured and installed to conform with ANSI/ASTM F 480-81, Standard Dimension Ratio (SDR) 21 or the most recent revision.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(8)(b)) SDR 21 is the minimum requirement; higher pressure rated pipe may be used.	(12)(b) SDR 21 is the minimum requirement (<u>Class 200</u>); higher pressure rated pipe may be used.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(8)(c) All plastic casing must be installed only in an oversized drill hole without driving. The oversized hole must be a diameter of at least 4 inches larger than the outside diameter of the plastic casing or coupling hubs, whichever is larger.	(12)(c) All plastic casing must be installed only in an oversized drill hole without driving. The oversized hole must be a diameter of at least 4 inches larger than the outside diameter of the plastic casing or coupling hubs, whichever is larger. <u>Plastic casing and liner must be of sufficient strength to withstand breakage or collapse when installed and while the well is pumped. Plastic casing and liner must meet ASTM potable water standards.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-201(8)(d) All plastic casing must be new or, in like new	(12)(d) All plastic casing <u>or liner</u> must be new or, in like new condition and clearly marked by the manufacturer	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

<p>condition and clearly marked by the manufacturer showing nominal size, type of plastic material, SDR, ASTM designation, and have a National Sanitation Foundation (NSF) seal of approval for use in potable water supplies.</p>	<p>showing nominal size, <u>class</u>, type of plastic material, SDR, ASTM designation, and have a National Sanitation Foundation (NSF) seal of approval for use in potable water supplies.</p>																															
<p>WAC 173-160-201(8)(e) Casing that has been exposed to a contaminant shall not be used in well construction unless the construction can be entirely removed.</p>	<p>(12)(e) Casing <u>or liner</u> that has been exposed to a contaminant shall not be used in well construction unless the construction <u>contaminant can be</u> is entirely removed.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>																														
<p>WAC 173-160-201(8)(f) Plastic casing joints must be watertight.</p>	<p>(12)(f) Plastic casing <u>or liner</u> joints must be watertight.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>																														
<p>WAC 173-160-201(8)(g) Table 2 is the manufacturer's recommendations for specifications of plastic casing.</p>	<p>(12)(g) Table 2 is the manufacturer's recommendations for specifications of plastic casing and liner.</p> <p style="text-align: center;">TABLE 2 Minimum Specifications for Plastic Casing</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">NOMINAL CASING DIAMETER (inches)</th> <th style="text-align: center;">MINIMUM THICKNESS (inches)</th> <th style="text-align: center;">SDR</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">2.0</td><td style="text-align: center;">0.1332</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">2.5</td><td style="text-align: center;">0.1372</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">3.0</td><td style="text-align: center;">0.1672</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">3.5</td><td style="text-align: center;">0.1902</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">4.0</td><td style="text-align: center;">0.2142</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">4.5</td><td style="text-align: center;">0.2362</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">5.0</td><td style="text-align: center;">0.2652</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">6.0</td><td style="text-align: center;">0.3162</td><td style="text-align: center;">21</td></tr> <tr><td style="text-align: center;">8.0</td><td style="text-align: center;">0.4102</td><td style="text-align: center;">21</td></tr> </tbody> </table>	NOMINAL CASING DIAMETER (inches)	MINIMUM THICKNESS (inches)	SDR	2.0	0.1332	21	2.5	0.1372	21	3.0	0.1672	21	3.5	0.1902	21	4.0	0.2142	21	4.5	0.2362	21	5.0	0.2652	21	6.0	0.3162	21	8.0	0.4102	21	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv). Table deleted - no effect.</p>
NOMINAL CASING DIAMETER (inches)	MINIMUM THICKNESS (inches)	SDR																														
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	10 12	0.51121 0.60621	21 21	
WAC 173-160-201(9) Liner pipe must consist of steel, in new or like new condition, free of pits or breaks; or polyvinyl chloride (PVC), CPVC, type 1120, with SDR 21 (Class 200) or greater wall thickness. All PVC must be clearly marked to identify the type, class, and SDR.	LINER PIPE (9) Liner pipe must consist of steel, in new or like new condition, free of pits or breaks; or polyvinyl chloride (PVC), CPVC, type 1120, with SDR 21 (Class 200) or greater wall thickness. All PVC must be clearly marked to identify the type, class, and SDR.			Clarification Exempt: RCW 34.05.328 (5)(b)(iv). Deletion – no effect.
WAC 173-160-201(9)(a) Liner pipe must be of sufficient strength to withstand breakage or collapse when the well is pumped and meet ASTM potable water standards.	(9)(a) Liner pipe must be of sufficient strength to withstand breakage or collapse when the well is pumped and meet ASTM potable water standards.			Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
173-160-201(9)(b) When installed, liner pipe shall extend or telescope at least two feet into the lower end of the well casing. If more than one string of liner pipe is installed, each string shall extend or telescope at least eight feet into the adjacent larger diameter liner pipe.	(9)(b) When installed, liner pipe shall extend or telescope at least two feet into the lower end of the well casing. If more than one string of liner pipe is installed, each string shall extend or telescope at least eight feet into the adjacent larger diameter liner pipe.			Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
173-160-201(9)(c) Liner pipe may not be permanently fixed to a well casing below land surface.	(9)(c) Liner pipe may not be permanently fixed to a well casing below land surface.			Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-221 Standards for Sealing Materials				
WAC 173-160-221(2)(c) Concrete sealants consist of clean, hard and durable aggregate with not less than five sacks (ninety-four pounds per sack) of portland cement per cubic yard of concrete sealant.	(2)(c) Concrete sealants consist of clean, hard and durable aggregate with not less than five sacks (ninety-four pounds per sack) of portland cement per cubic yard of concrete sealant <u>and water.</u>			Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

WAC 173-160-221(2)(c)(iii) New subsection	<u>(2)(c)(iii) The quantity of water used for each batch of cement sealant shall not exceed manufacturers recommendation.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-221 (2)(e) New subsection	<u>(2)(e) Controlled Density Fill (CDF) or Fly Ash shall not be used in any well construction or decommissioning.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-221(2)(f) New subsection	<u>(2)(f) All cement sealants shall be mechanically mixed prior to placing in the well or borehole.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-221 (5) New subsection	<u>(5) Sealing materials shall be impervious to any contaminants encountered.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC173-160-231 Standards for Surface Seals		
WAC 173-160-231(1)(c) The surface seal must extend from land surface to a minimum depth of eighteen feet. Except, when the minimum surface seal requirements for driven, jetted, and some dug wells are less than eighteen feet. See the appropriate section for these wells for a detailed description of their sealing requirements.	(1)(c) The surface seal must extend from land surface to a minimum depth of eighteen feet. Except, when the minimum surface seal requirements for driven, jetted, <u>dewatering</u> and some dug wells are less than eighteen feet. See the appropriate section for these wells for a detailed description of their sealing requirements.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-231(4) After the permanent casing has been set in final position, the annular space shall be filled to land surface with bentonite or cement grout or neat cement. Leaving voids for future installation of equipment such as a pitless adapter is prohibited.	(4) After the permanent casing has been set in final position, the annular space shall be filled to land surface with bentonite or <u>neat</u> cement grout or neat cement. Leaving voids for future installation of equipment such as a pitless adapter is prohibited.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-231(5)) A temporary casing with a minimum length of eighteen feet and a minimum nominal diameter of four inches greater than the	(5) A temporary <u>surface</u> casing with a minimum length of eighteen feet and a minimum nominal diameter of four inches greater than the permanent casing shall be used in all unconsolidated formations such as in gravels, sands,	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)..

<p>permanent casing shall be used in all unconsolidated formations such as in gravels, sands, or other unstable conditions when the use of drilling fluid or other means of keeping the bore hole open are not employed.</p>	<p>or other unstable conditions when the use of drilling fluid or other means of keeping the bore hole open are not employed. <u>Except driven and jetted wells shall utilize a temporary surface casing with a minimum length of six feet and a minimum nominal diameter of four inches greater than the permanent casing shall be used in all unconsolidated formations such as in gravels, sands, or other unstable conditions when the use of drilling fluid or other means of keeping the bore hole open are not employed.</u></p>	
<p>WAC 173-160-241 Requirements for Formation Sealing</p>		
<p>WAC 173-160-241(1) Unconsolidated formation sealing - Without significant clay beds or other confining formations - Drilled wells that penetrate an aquifer overlain by unconsolidated formations such as sand and gravel without significant clay beds (at least six feet thick) or other confining formations shall be sealed in accordance with the surface sealing requirements of WAC 173-160-231. See Figure 1.</p>	<p>(1) Unconsolidated formation sealing - Without significant clay beds or other confining formations - Drilled wells that penetrate an aquifer overlain by unconsolidated formations such as sand and gravel without significant clay beds (at least six feet thick) or other confining formations shall be sealed in accordance with the surface sealing requirements of WAC <u>173-160-231</u>. See Figure 1.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-241(2)(a) A drill hole at least four inches greater in diameter than the nominal size of the permanent well casing shall extend from the land surface into the clay bed or other confining formation located directly above the aquifer to be developed. The annular space shall be filled with bentonite (slurry or unhydrated), cement grout, or neat cement to form a watertight seal between the casing and</p>	<p>(2)(a) A drill hole at least four inches greater in diameter than the nominal size of the permanent well casing shall extend from the land surface into the clay bed or other confining formation located directly above the aquifer to be developed. The annular space shall be filled with bentonite (slurry or unhydrated), neat cement grout, or <u>neat cement</u> to form a watertight seal between the <u>permanent</u> casing and all significant confining formations encountered during drilling. If bentonite slurry, <u>neat</u> cement grout, or neat cement is used to seal the annular space it must be placed by either pumping or</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

<p>all significant confining formations encountered during drilling. If bentonite slurry, cement grout, or neat cement is used to seal the annular space it must be placed by either pumping or tremmying the seal material from the lowest clay bed or other confining formation of significance encountered, to land surface. The drill hole shall be kept open through the use of a temporary casing or any other drilling method that stabilizes the bore hole wall. See Figure 1.</p>	<p>tremmying the seal material from the lowest clay bed or other confining formation of significance encountered, to land surface. The drill hole shall be kept open through the use of a temporary casing or any other drilling method that stabilizes the bore hole wall. See Figure 1.</p>	
<p>WAC 173-160-241(3)(a) Procedure one - An upper drill hole at least four inches greater in diameter than the nominal size of the permanent well casing shall extend from land surface into a sound, unfractured, consolidated formation. Unperforated permanent casing shall be installed to extend to this same depth, and the lower part of the casing shall be driven and sealed into the consolidated formation to establish a watertight seal between the formation and the casing. The remainder of the annular space to land surface shall be filled with cement grout, neat cement, or bentonite.</p>	<p>(3)(a) Procedure one - An upper drill hole at least four inches greater in diameter than the nominal size of the permanent well casing shall extend from land surface into a sound, unfractured, consolidated formation. <u>An unperforated permanent casing shall be installed to extend to this same depth, and the lower part of the casing shall be driven and sealed into the consolidated formation and sealed in a manner that establishes a watertight seal between the formation and the casing.</u> The remainder of the annular space to land surface shall be filled with <u>neat</u> cement grout, neat cement, or bentonite.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-241(3)(a)(ii)) If cement grout, neat cement, or bentonite slurry is placed by pumping to seal the entire annulus from the bottom up to land surface, the upper drill hole may be a minimum of two inches larger than the</p>	<p>(3)(a)(ii) If <u>neat</u> cement grout, neat cement, or bentonite slurry is placed by pumping to seal the entire annulus from the bottom up to land surface, the upper drill hole may be a minimum of two inches larger than the outside diameter of the permanent casing.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

outside diameter of the permanent casing.		
WAC 173-160-261 Sealing Dug Wells		
<p>WAC 173-160-261 The surface seal of all dug wells shall be constructed to effectively seal the annular space between the undisturbed native material of the upper well hole and the well curbing, which may consist of (concrete tile, steel pipe or liner). The seal depth shall be at least eighteen feet from land to surface or to within three feet of the bottom in dug wells that are less than twenty-one feet in depth. Dug wells may be sealed with cement, neat cement, bentonite, or cement grout. A cap shall be placed on all dug wells. Except during maintenance, the cap shall remain in place. The cap shall prevent entry of pollutants, insects, and mammals into the well. See Figure 3.</p>	<p>The surface seal of all dug wells shall be constructed to effectively seal the annular space between the undisturbed native material of the upper well hole and the well curbing, which may consist of (concrete tile, steel pipe or liner). The seal depth shall be at least eighteen feet from land to surface or to within three feet of the bottom in dug wells that are less than twenty-one feet in depth. Dug wells may be sealed with cement, neat cement, bentonite, or <u>neat</u> cement grout. A cap shall be placed on all dug wells. Except during maintenance, the cap shall remain in place. The cap shall prevent entry of pollutants, insects, and mammals into the well. See Figure 3.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
WAC 173-160-271 Special Sealing Standards for Driven Wells, Jetted Wells and Dewatering Wells		
<p>WAC 173-160-271(1)) Driven wells - An upper hole at least four inches greater in diameter than the permanent casing shall extend a minimum of six feet below land surface. The annular space between the upper oversized drill hole and the permanent casing must be kept at least one-half full with bentonite or bentonite slurry throughout all driving of the pipe. The remaining</p>	<p>(1) Driven wells - An upper hole at least four inches greater in diameter than the permanent casing shall extend a minimum of six feet below land surface. The annular space between the upper oversized drill hole and the permanent casing must be kept at least one-half full with bentonite or bentonite slurry throughout all driving of the pipe. The remaining annular space to land surface shall be filled with <u>neat</u> cement grout, neat cement, or bentonite. See Figure 4.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

annular space to land surface shall be filled with cement grout, neat cement, or bentonite. See Figure 4.		
WAC 173-160-271(3)(a) – Permanent dewatering wells shall be sealed to a depth of eighteen feet or within three feet of the bottom of the well for wells less than twenty-one feet deep. The minimum annular space requirements, sealing material, and decommissioning procedures of this chapter apply to all permanent dewatering wells.	3(a) Permanent dewatering wells shall be sealed to a depth of eighteen feet or within three feet of the bottom of the well for wells less than twenty-one feet deep. The minimum annular space requirements, sealing material, and decommissioning procedures of this chapter apply to all permanent dewatering wells. <u>in one of the following manners:</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(a)(i) New subsection.	<u>(i) For wells in which the top of the screen interval is greater than 21 feet below land surface then the minimum sealing depth shall be eighteen feet.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(a)(ii) New subsection.	<u>(ii) If the top of the screen interval is 21 feet or less below the land surface, the seal shall be within three feet of the top of the screen. In no instance shall the seal be less than ten feet in depth.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(a)(iii) New subsection.	<u>(iii) All permanent dewatering wells shall be constructed to prevent interconnection of separate aquifers penetrated by the well, and provide casing stability.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(b) Temporary dewatering wells - Dewatering wells that are in place less than eighteen months and are less than eighteen feet deep are exempt from the sealing requirements of this chapter. Temporary wells that are installed over eighteen months and that are deeper than eighteen feet, must have a minimum of eighteen feet of surface seal and meet the minimum annular	(3)(b) Temporary dewatering wells – Dewatering wells that are in place less than eighteen months and are less than eighteen feet deep are exempt from the sealing requirements of this chapter. Temporary wells that are installed over eighteen months and that are deeper than eighteen feet, must have a minimum of eighteen feet of surface seal and meet the minimum annular space requirements and sealing materials authorized under this chapter.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

space requirements and sealing materials authorized under this chapter.		
WAC 173-160-271(3)(b) New subsection.	<u>(b) Temporary Dewatering wells are wells in place less than twelve months.</u>	Clarification. Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(b)(i) New subsection.	<u>(3)(b)(i) Temporary dewatering wells shall have a minimum of a 3 foot surface seal.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(b)(iii) New subsection.	<u>(ii) Temporary dewatering wells that connect different aquifers, allowing waters to commingle, must have a dewatering plan will be required that addresses and mitigates for potential inter-aquifer transfer and cross-contamination.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(b)(iv) New subsection.	<u>(iii) All temporary dewatering wells must be decommissioned or reconstructed to meet standards for permanent dewatering wells after within twelve months from the date of installation.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-271(3)(c) New subsection	<u>(3)(c)The minimum annular space requirements, sealing material, and decommissioning procedures of this chapter apply to all dewatering wells. This includes wells that have been cut down, altered or damaged during the dewatering process. Temporary dewatering wells located within an area to be excavated for construction are exempt from these sealing requirements but are required to be decommissioned in accordance with this chapter.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-291 Standards for the Upper Terminal of Water Wells		
WAC 173-160-291(5) A pitless adapter, or similar device is permitted on water wells if it is made with fittings approved by the department of health. The connection must be above static water level.	<u>(5) A pitless adapter, or similar device is permitted on water wells if it is made with fittings approved by the department of health. The use and installation of pitless adapters must meet manufacturer’s standards. The connection must be above static water level <u>except for adapters specifically designed for installation below static water level.</u></u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

<p>WAC 173-160-291(6) Any person who removes any part of a surface seal to install a pitless adapter shall repair the seal so that the it is brought up to land surface.</p>	<p>(6) Any person who removes any part of a surface seal to install a pitless adapter shall <u>be responsible to have the seal repaired by a licensed or otherwise qualified person</u> so that the seal it is brought up to land surface.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-311 Well Tagging Requirements</p>		
<p>WAC 173-160-311(1) It shall be the operator's responsibility to place a well identification tag with a unique identification number on every well that they construct, alter, or reconstruct.</p>	<p>(1) It shall be the operator's responsibility to place a well identification tag with a unique identification number on every well that they construct, alter, or reconstruct <u>within 30 days of completion of the well. The original unique identification number shall be used on all subsequent work and documentation.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-311(2) It shall be the well owner's responsibility to place a well identification tag with a unique identification number on every well they own.</p>	<p>(2) It shall be the well owner's responsibility to place a well identification tag with a unique identification number on every well they own, <u>unless the well has been previously tagged.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-321 Well Testing</p>		
<p>WAC 173-160-321(1) Well authorized by appropriation permit - Before being put to use, each well shall be test pumped for yield and draw down. Reports of the test pumping shall be submitted as required in chapter 90.44 RCW. The driller shall be familiar with and meet all testing procedures outlined in the water right permit. The well shall be test pumped at rates equal to, or greater than, are expected from the well during its normal usage. The test pump</p>	<p>(1) Well authorized by appropriation permit - Before being put to use, each well shall be test pumped for yield and draw down. Reports of the test pumping shall be submitted as required in chapter 90.44 RCW. The driller shall be familiar with and meet all testing procedures outlined in the water right permit. The well shall be test pumped at rates equal to, or greater than, are expected from the well during its normal usage. The test pump for public water supply wells shall be operated continuously for a minimum of four hours, or longer if required by the department of health. The yield and draw down shall be determined following at least four hours of <u>stabilized</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

<p>for public water supply wells shall be operated continuously for a minimum of four hours, or longer if required by the department of health. The yield and draw down shall be determined following at least four hours of stabilized water level observation. Periodic water level observation should be made during draw down and subsequent recovery periods. Periods of observation shall be more frequent during the onset of the draw down and may decrease in frequency as the draw down or recovery proceeds toward stabilization. A bailer test is not an acceptable substitute for testing wells under permit or for public water supply wells.</p>	<p>water level observations <u>constant rate pumping</u>. Periodic water level observation should be made during draw down and subsequent recovery periods. Periods of observation shall be more frequent during the onset of the draw down and may decrease in frequency as the draw down or recovery proceeds toward stabilization. A bailer test is not an acceptable substitute for testing wells under permit or for public water supply wells.</p>	
<p>WAC 173-160-321(2) Wells not requiring appropriation permit - Testing of a well that does not require an appropriation permit shall be conducted for a period of at least one hour. The last twenty minutes of the test shall be conducted at a constant rate of withdrawal to achieve a stabilized pumping level. Test pumping under this section can be either by bailer, air lift, or with a pump.</p>	<p>(2) Wells not requiring appropriation permit - Testing of a well that does not require an appropriation permit shall be conducted <u>at a constant rate</u> for a period of at least one hour <u>or longer if required by Department of Health</u>. The last twenty minutes of the test shall be conducted at a constant rate of withdrawal to achieve a stabilized pumping level. Test pumping under this section can be either by bailer, air lift, or with a pump.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-321(3) Test data shall be reported to the department on the water well report.</p>	<p>(3) Test data shall be reported to the department on the water well report <u>by the operator at the time the report is submitted</u>.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-371 Standards for</p>		

Chemical Conditioning		
WAC 173-160-371 The use of detergents, chlorine, acids or other chemicals in wells for the purpose of increasing or restoring yield, shall be used according to manufacturer's recommendations. Except for routine maintenance and cleaning, a well drilling license is required for all chemical conditioning that alters the condition of the water well.	The use of detergents, chlorine, acids or other chemicals in wells for the purpose of increasing or restoring yield, shall be used according to manufacturer's recommendations. <u>Within a consolidated formation the placement or use of packers and subsequent pressurization within the bore hole or casing while cleaning or hydrofracturing shall not damage the seal at the drive shoe.</u> Except for <u>disinfection and cleaning of wells</u> , routine maintenance and cleaning , a well drilling license is required for all <u>other</u> chemical conditioning that alters the condition of the water well.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381 Standards for Decommissioning a Well		
WAC 173-160-381(1) Cased wells. Cased water wells that were not constructed in accordance with these regulations, or wells which are decommissioned to allow the placement of potential sources of contamination within one hundred feet of the well, or for which a drilling report required under WAC 173-160-141 is missing, shall be decommissioned in one of the following ways:	(1) Cased wells. <u>Remove all liners, debris, and obstructions from the well casing, except well screens and packers.</u> All cased water wells that were not constructed in accordance with these regulations, or wells which are decommissioned to allow the placement of potential sources of contamination within one hundred feet of the well, or for which a drilling report required under WAC 173-160-141 is missing, shall be decommissioned in one of the following ways:	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(1)(a) New subsection	(a) Remove all liners, debris, and obstructions from the well casing. Perforate the casing from the bottom to within five feet of land surface and pressure seal grout the casing.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(1)(a)(i) Perforations shall be at least four equidistant cuts per row, and one row per foot. Each cut	(1)(b)(i) Perforations shall be at least four equidistant cuts per row, and one row per foot. Each cut shall be at least one and one half inches long. <u>The perforations</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

shall be at least one and one-half inches long.	<u>must be sufficient enough to allow grout neat cement grout, or neat cement, or bentonite slurry to migrate outside the casing and effectively prevent the vertical movement of water.</u>	
WAC 173-160-381(1)(a)(iii) The remainder of the casing shall be filled with cement grout, neat cement, or bentonite slurry.	(1)(b)(iii) The remainder of the casing shall be filled <u>completely</u> with <u>neat cement grout, neat cement, or bentonite slurry.</u> <u>The screen and up to five feet of riser pipe may be filled with chlorinated sand, pea gravel or unhydrated bentonite.</u> <u>The remainder of the riser pipe must be removed.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(1)(a)(iv)	(1)(b)(iv) <u>The casing may be cut off at a maximum of five feet below land surface. A steel cap shall be welded on the casin, or;</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(1)(b) Withdraw the casing and fill the bore hole with cement grout, neat cement, or bentonite as the casing is being withdrawn.	(1)(c) Withdraw the casing and fill the bore hole with <u>neat cement grout, neat cement, or unhydrated bentonite,</u> bentonite <u>slurry</u> as the casing is being withdrawn.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(2) If it can be verified through a field examination and review of the drilling report that a water supply well was constructed in accordance with these regulations, and it is not being decommissioned to allow the siting of potential sources of contamination within one hundred feet of the well, it shall be decommissioned by the casing removal, or casing perforation methods described in subsection (1)(a) or (b) of this section or by:	(2) If it can be verified through a field examination and review of the drilling report that a water supply well was constructed in accordance with these regulations, and it is not being decommissioned to allow the siting of potential sources of contamination within one hundred feet of the well, it shall be decommissioned by the casing removal, or casing perforation methods described in subsection (1)(a) or (b) of this section or by:	Will have a moderate to large cost effect on well owner.
WAC 173-160-381(2)(a) Filling the casing from bottom to within five feet of land surface with bentonite, cement	(2)(a) Filling the casing from bottom to within five feet of land surface with bentonite, cement grout, or neat cement.	Will have a moderate to large cost effect on well owner.

grout, or neat cement.		
WAC 173-160-381(2)(b) The casing may be cut off at a maximum of five feet below land surface.	(b) The casing may be cut off at a maximum of five feet below land surface.	Will have a moderate to large cost effect on well owner.
WAC 173-160-381(3) Uncased wells - Backfill uncased wells with concrete, cement grout, neat cement, or bentonite.	(2) <u>Uncased wells - Remove all liners, debris, and obstructions. Seal Backfill</u> uncased wells with concrete, neat cement grout, neat cement, or bentonite.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4) Dug wells	(3)(a) Dug wells - <u>The following criteria are required for the decommissioning of all dug wells:</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4)(a) New numbering Remove all debris and obstructions that impede decommissioning or that may contaminate the aquifer from within the dug well. Install clean chlorinated sand or pea gravel to a point two feet above static water level. Fill the remainder of the well with concrete or bentonite to the land surface.	(3)(a)(i) <u>Remove all debris and obstructions that impede decommissioning or that may contaminate the aquifer from within the dug well. Install clean chlorinated sand or pea gravel to a point two feet above static water level. Fill the remainder of the well with concrete or bentonite to the land surface.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4)(b) New subsection.	(3)(a)(ii) <u>Dug wells may have a maximum of three foot of soil cover from top of sealing material to land surface.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4)(c) New subsection.	(3)(a)(iii) <u>All dug wells shall be sealed with either unhydrated bentonite, neat cement, neat cement grout, or concrete. The use of Controlled Density Fill (CDF), bentonite slurry, or Fly Ash is prohibited.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381 (4)(c) New subsection.	(3)(a)(iv) <u>Dug wells that are not cast-in-place must have a minimum of three foot of sealing material in contact with native soil below land surface. Bentonite slurry shall not be used to decommission dug wells.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4)(b) New subsection.	(b) <u>Dug wells that are dry at any time during the year and that are less than twenty feet in depth shall be sealed from bottom to within three foot of land surface.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(4)(c). Dug wells	(c) <u>Dug wells that have static water levels of five ten</u>	Clarification

<p>with static levels below twenty feet from land surface, may be decommissioned by placing chlorinated sand or pea gravel to the static level and then placing alternating layers of sealing material and chlorinated sand or pea gravel to within twenty feet of land surface. The alternating layers of sand or pea gravel must be a maximum of five feet thick. The minimum thickness of the sealing material layers must be five feet. The remainder of the dug well to a maximum of two feet below land surface shall be filled with bentonite, neat cement, cement grout, or concrete. Bentonite slurry shall not be used to decommission dug wells.</p>	<p><u>feet from land surface or less and a depth of less than twenty feet shall may be decommissioned by installing clean chlorinated sand or pea gravel to a maximum depth of ten feet below land surface. Otherwise, the remainder of the well shall be filled with either unhydrated bentonite, neat cement, neat cement grout, or concrete.</u></p>	<p>Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-381(4)(d) New subsection.</p>	<p><u>(d) Dug wells that have a static water level over ten feet and a depth of less than twenty feet from land surface may be decommissioned by installing clean chlorinated sand and pea gravel to the static level. Otherwise, the well shall be filled with either unhydrated bentonite, neat cement, neat cement grout, or cement.</u></p>	<p>May have minimal impact. Unable to determine.</p>
<p>WAC 173-160-381(4)(e) New subsection.</p>	<p><u>(e) Dug wells with static levels twenty feet or less from land surface and that are greater than twenty feet deep may be decommissioned by placing chlorinated sand or pea gravel to twenty feet below land surface. Otherwise, the remainder of the dug well, to a maximum of three feet below land surface, shall be filled with unhydrated bentonite, neat cement, neat cement grout or concrete.</u></p>	<p>May have a minimal impact. Unable to determine.</p>
<p>WAC 173-160-381(4) Dug wells with static levels below twenty feet from land surface, may be decommissioned by placing chlorinated sand or pea gravel to</p>	<p><u>(4)(f iii) Dug wells with static levels below twenty feet from land surface, may be decommissioned by placing chlorinated sand or pea gravel to the static level and then placing alternating layers of sealing material and</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

<p>the static level and then placing alternating layers of sealing material and chlorinated sand or pea gravel to within twenty feet of land surface. The alternating layers of sand or pea gravel must be a maximum of five feet thick. The minimum thickness of the sealing material layers must be five feet. The remainder of the dug well to a maximum of two feet below land surface shall be filled with bentonite, neat cement, cement grout, or concrete. Bentonite slurry shall not be used to decommission dug wells.</p>	<p>chlorinated sand or pea gravel to within twenty feet of land surface. The alternating layers of sand or pea gravel must be a maximum of five feet thick. The minimum thickness of the sealing material layers must be five feet. Otherwise, t <u>The remainder of the dug well to a maximum of two three feet below land surface shall be filled with unhydrated bentonite, neat cement, neat cement grout, or concrete to a maximum of three feet below land surface. On all dug wells that are not cast in place, the first four feet of curbing shall be removed a <u>minimum of one foot of sealing material must come into contact with native soil below land surface. Bentonite slurry shall not be used to decommission dug wells.</u></u></p>	
<p>WAC 173-160-381(4). New subsection.</p>	<p><u>(4) Flowing artesian wells that are not leaking on the outside of the casing shall be decommissioned by pressure grouting with neat cement or weighted high solids bentonite slurry from the bottom of the well bore to land surface. If the well is leaking on the outside of the casing or if leaking develops while decommissioning method above is employed, then the casing must be perforated and pressure grouted to replace all confining layers and stop leakage.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-381(5) New language.</p>	<p><u>(5) Placement of sealing material.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-381(5)(a) Sealing material placed below the static water level shall be piped directly to the point of application or placed by means of a dump bailer or tremie tube. If cement, cement grout, or neat cement is used to seal below the static water level in the well, the material shall be placed from the bottom up by methods that avoid</p>	<p>(a) Sealing material placed below the static water level shall be piped directly to the point of application or placed by means of a dump bailer or <u>pumped through a tremie tube. As the sealing material is placed, the existing well tile may be encapsulated into the seal material. If concrete cement, neat cement grout, bentonite, bentonite slurry, or neat cement is used to seal below the static water level in the well, the material shall be placed from the bottom up by methods that avoid</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

segregation or dilution of the material. When used to place grout, the discharge end of the tremie tube shall be submerged in the grout to avoid breaking the seal while filling the annular space.	segregation or dilution of the material. When used to place <u>concrete, neat cement, neat cement grout, or bentonite slurry</u> the discharge end of the tremie tube shall be submerged in the <u>sealing material</u> grout to avoid breaking the seal while filling the annular space.	
WAC 173-160-381(5)(b) New language.	(b) <u>All authorized sealing material placed above the static water level or into the dewatered portion of the well may be hand poured provided it does not dilute, segregate, and must the resultings in a seal free of voids.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-381(5)(c) New language.	(5)(c) When decommissioning uncased wells or wells with all casing removed, that were originally constructed without casing, un-hydrated bentonite chips or pellets may be hand placed, provided it forms a continuous seal.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-400 Minimum Standards for Resource Protection Wells and Geotechnical Soil Borings		
WAC 173-160-400 The following minimum standards shall apply to all resource protection wells and geotechnical soil borings constructed in the state of Washington. It is the responsibility of the resource protection well operator, resource protection well contractor, and the property owner to take whatever measures are necessary to guard against waste and contamination of the ground water resource.	The following minimum standards shall apply to all resource protection wells and geotechnical soil borings constructed in the state of Washington. It is the responsibility of <u>the resource</u> protection well operator, resource protection well contractor, and the property owner to take whatever measures are necessary to guard against waste and contamination of the ground water resource.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-410 Definitions		
WAC 173-160-410 This section specifically defines words associated with resource protection wells and geotechnical soil borings. To find the	This section specifically defines words associated with resource protection wells and geotechnical soil borings. To find the definitions of other words, see WAC <u>173-160-111</u> .	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

definitions of other words, see WAC 173-160-111.		
WAC 173-160-410(1) New definition.	<u>(1) "Environmental investigation well" means a cased hole intended or used to extract a sample or samples of ground water, vapor, or soil from an underground formation and which is decommissioned immediately after the sample or samples are obtained. An environmental investigation well is typically installed using direct push technology or auger boring and uses the probe, stem, auger, or rod as casing. An environmental investigation well is not a geotechnical soil boring.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-410(2) "Geotechnical information" means subsurface engineering properties used for the purpose of designing structures such as bridges, buildings, highways, pipelines, or for assessing slope stability samples to ascertain structural properties of the subsurface.	(15) "Geotechnical information" means subsurface engineering properties used for the purpose of designing structures such as bridges, buildings, highways, pipelines, or for assessing slope stability samples to ascertain structural properties of the subsurface.	Deletion. New definition on "structural properties" to replace this definition. Exempt: RCW 34.05.328(5)(b)(iv)
WAC 173-160-410(2)"Geotechnical soil boring" or "boring" means a well drilled for the purpose of obtaining soil samples to ascertain structural properties of the subsurface. Geotechnical soil boring includes auger borings, rotary borings, cone penetrometer probes and vane shear probes, or any other uncased ground penetration for geotechnical information.	(2)"Geotechnical soil boring" or "boring" means a well drilled for the purpose of obtaining soil samples to ascertain structural properties of the subsurface. Geotechnical soil boring includes auger borings, rotary borings, cone penetrometer probes and vane shear probes, or any other uncased ground penetration for geotechnical information.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-410(4) "Instrumentation well" means a well in which pneumatic or electric geotechnical or hydrological instrumentation is permanently or	(5) Instrumentation well" means a well in which pneumatic or electric geotechnical or hydrological instrumentation is permanently or periodically installed to measure or monitor subsurface strength and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

<p>periodically installed to measure or monitor subsurface strength and movement. Instrumentation well includes bore hole extensometers, slope indicators, pneumatic or electric pore pressure transducers, and load cells.</p>	<p>movement. Instrumentation well includes bore hole extensometers, slope indicators, pneumatic or electric pore pressure transducers, <u>vibrating wire piezometers</u>, and load cells.</p>	
<p>WAC 173-160-410(5) "Lysimeter" means a well used to withdraw soil water or pore samples from subsurface soil or rock above the water table for chemical, physical, or biological testing.</p>	<p>(5) "Lysimeter" means a well used to withdraw soil water or pore water samples from subsurface soil or rock above the water table for chemical, physical, or biological testing.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-410(6) "Nested well" means the installation of more than one cased resource protection well in one bore hole. This does not preclude casing reductions.</p>	<p>(7) Nested well" means the installation of more than one cased resource protection well in one bore hole. This does not preclude casing reductions <u>or installation of vibrating wire piezometers.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-410(9) "Remediation well" means a well used to withdraw ground water or inject water, air (for air sparging), or other solutions into the subsurface for the purpose of remediating, cleaning up, or controlling potential or actual ground water contamination.</p>	<p>(8) Remediation well" means a well used to withdraw ground water or inject water, air (for air sparging) or other solutions into the subsurface for the purpose of remediating, cleaning up, or controlling potential or actual ground water contamination. <u>means a well intended or used to withdraw ground water or inject water, air (for air sparging), or other solutions into the subsurface for the purpose of remediating, cleaning up, or controlling potential or actual ground water contamination.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-410(10) "Resource protection well" means a cased boring used to determine the existence or migration of pollutants within an underground formation. Resource protection wells include monitoring wells, observation wells, piezometers,</p>	<p>(11) "Resource protection well" means a cased boring <u>intended or used to collect subsurface information or to</u> determine the existence or migration of pollutants within an underground formation. Resource protection wells include monitoring wells, observation wells, piezometers, spill response wells, <u>remediation wells, environmental investigation wells, vapor extraction</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

spill response wells, vapor extraction wells, and instrumentation wells.	wells, <u>ground source heat pump borings, grounding wells, environmental investigation wells, remediation wells, and instrumentation wells.</u>	
WAC 173-160-410(13). New definition.	(13) <u>“Resource protection report” or “Geotechnical soil boring report” means a document that describes how a resource protection well or geotechnical soil boring, ground source heat pump boring and grounding well was constructed or decommissioned and identifies its components per the requirements of WAC 173-160-420.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-410(15) New definition	(15) <u>“Structural properties” means subsurface engineering properties or geotechnical information used for the purpose of designing structures such as bridges, buildings, highways, pipelines, or for assessing slope stability samples.</u>	Clarification. Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-410 (13) "Vapor extraction well" means a well used to withdraw gases or vapors from soil, rock, landfill, or ground water for the purpose of remediating soil and/or ground water contamination.	(136) "Vapor extraction well" means a well used to withdraw gases or vapors from soil, rock, landfill, <u>backfill</u> or ground water for the purpose of <u>investigating and/or remediating soil and/or ground water contamination or managing gases or vapors.</u> Vibrating wire piezometer for the purposes of this WAC as an instrumentation well.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-420 General Construction Requirements for Resource Protection Wells		
WAC 173-160-420(1) No resource protection well or soil boring excavation may be used for domestic, industrial, municipal, commercial, or agricultural purposes.	(1) No resource protection well or soil boring excavation may be used to <u>withdraw or inject water</u> for domestic, industrial, municipal, commercial, or agricultural purposes.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-420(5)(a) It shall be the driller's responsibility to place a well identification tag with a unique	(5)(a) Resource protection wells that remain in the ground less than 72 hours are exempt from these well tagging requirements. All other well construction and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

<p>identification number on every resource protection well that they construct or alter. Uncased geotechnical soil borings are exempt from the tagging requirements of this chapter.</p>	<p>decommissioning requirements shall apply. It shall be the driller's responsibility to place a well identification tag with a unique identification number on every resource protection well that they construct <u>or alter within 30 days of completion of the well</u> that remain in the ground longer than 72 hours. Uncased geotechnical soil borings <u>and environmental investigation wells</u> are exempt from the tagging requirements of this chapter.</p>	
<p>WAC 173-160-420(6) All resource protection wells will be sealed in accordance with this chapter regardless of the method of installation. Except, resource protection wells that are properly decommissioned prior to the removal of any drilling equipment from the well location are exempted from the surface sealing requirements of this chapter. Provided the decommissioning process includes the removal of any conduit, tubing, probe, or other items inserted into the ground.</p>	<p>(6) All resource protection wells will be sealed in accordance with <u>WAC 173-160-450</u> this chapter regardless of the method of installation. Except, resource protection wells that are properly decommissioned prior to the removal of any drilling equipment from the well location are exempted from the surface sealing requirements of this chapter. Provided the decommissioning process includes the removal of any conduit, tubing, probe, or other items inserted into the ground.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-420(9)and (9)(a) A notice of intent to construct or decommission a resource protection well and a geotechnical soil boring shall be filed with the department a minimum of seventy-two hours prior to initiating construction or decommissioning of the well(s) or boring(s). A fee must accompany each notice of intent to construct a resource protection well.</p>	<p>(9) A notice of intent to construct or decommission a resource protection well and a geotechnical soil boring shall be filed with the department a minimum of seventy-two hours prior to initiating construction or decommissioning of the well(s) or boring(s). A fee must accompany each notice of intent to construct <u>or decommission</u> a resource protection well.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-420(9)(a) The fee for constructing, altering, or reconstructing each resource protection well is forty</p>	<p>(9)(a) the fee for constructing, altering, or reconstructing each <u>a resource protection well, except for an environmental investigation well, a ground source</u></p>	<p>Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).</p>

dollars.	<u>heat pump boring, or a grounding well, is forty dollars for each well.</u>	
WAC 173-160-420(9)(b) New subsection.	<u>(9)(b) The fee for an environmental investigation well in which ground water is sampled or measured is forty dollars for construction of up to four environmental investigation wells per project, ten dollars for each additional environmental investigation well constructed on a project with more than four wells. There is no fee for soil or vapor sampling purposes.</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-420(9)(c) New subsection.	<u>(9)(c) The fee for a ground source heat pump boring or a grounding well is forty dollars for construction of up to four ground source heat pump borings or grounding wells per project and ten dollars for each additional ground source heat pump boring or grounding well constructed on a project with more than four wells.</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-420(9)(d) New subsection.	<u>(9)(d) The fee to decommission a resource protection well, except for an environmental investigation well, is twenty dollars. There is no fee to decommission an environmental investigation well or a geotechnical soil boring.</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).
WAC 173-160-420(9)(e) The fee for constructing, altering, or reconstructing each resource protection well is forty dollars. Geotechnical soil borings are EXEMPT from all fees. Geotechnical soil borings are EXEMPT from all fees. Under some circumstances, it may be necessary to construct more resource protection wells or geotechnical soil borings than originally anticipated. When additional resource protection wells are constructed on a site for which a notice of intent and fee were	<u>(9)(e) the fee to decommission a ground source heat pump boring or a grounding well is twenty dollars. The fee for constructing, altering, or reconstructing each resource protection well is forty dollars. Geotechnical soil borings are EXEMPT from all fees. Geotechnical soil borings are EXEMPT from all fees. Under some circumstances, it may be necessary to construct more resource protection wells or geotechnical soil borings than originally anticipated. When additional resource protection wells are constructed on a site for which a notice of intent and fee were submitted, a second notice and fee shall be submitted within twenty-four hours after all wells have been completed or as soon as the final number of wells to be constructed is determined,</u>	Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).

<p>submitted, a second notice and fee shall be submitted within twenty-four hours after all wells have been completed or as soon as the final number of wells to be constructed is determined, whichever is sooner. When additional geotechnical soil borings are needed, the borings may be completed. A follow-up notice of intent shall be submitted to the department within twenty-four hours after all borings are constructed. Notification to construct multiple wells or geotechnical soil borings within the same quarter/quarter section, township, and range may be submitted on one notice form. A fee of forty dollars per well must be attached to each notice. Example: Six resource protection wells identified on one notice of intent would be submitted along with a two hundred forty dollar fee.</p>	<p>whichever is sooner. When additional geotechnical soil borings are needed, the borings may be completed. A follow-up notice of intent shall be submitted to the department within twenty-four hours after all borings are constructed. Notification to construct multiple wells or geotechnical soil borings within the same quarter/quarter section, township, and range may be submitted on one notice form. A fee of forty dollars per well must be attached to each notice. Example: Six resource protection wells identified on one notice of intent would be submitted along with a two hundred forty dollar fee.</p>	
<p>WAC 173-160-420(10)(a)) Every well contractor is required to submit a complete report on the construction, alteration, or decommissioning of all resource protection wells and geotechnical soil borings they construct. Reports must be submitted to the department within thirty days after completion of construction, alteration, or decommissioning.</p>	<p>(10)(a) Every well contractor is required to submit a complete report on the construction, alteration, or decommissioning of all resource protection wells and geotechnical soil borings they construct. Reports must be submitted to the department<u>Water Resources Program</u> within thirty days after completion of construction, alteration, or decommissioning. <u>Submission of well report to consulting firms does not meet the well contractor's obligation of this section.</u></p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>
<p>WAC 173-160-420(15) If the well is damaged, the well protection measures and casing shall be repaired to meet the</p>	<p>(15) If the well is damaged, the well protection measures and casing shall be repaired to meet the requirements of this chapter. If the well is damaged beyond repair, it shall</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv).</p>

requirements of this chapter. If the well is damaged beyond repair, it shall be decommissioned in accordance with WAC 173-160-460.	be decommissioned in accordance with WAC <u>173-160-460</u> .	
WAC 173-160-430 Minimum Casing Standards		
WAC 173-160-430 The casing may not effect or interfere with the chemical, physical, radiological, or biological constituents of interest. All resource protection well casing shall conform to ASTM Standards, or at least 304 or 316 stainless steel, PTFE, or Schedule 40 PVC casing.	The casing may not effect or interfere with the chemical, physical, radiological, or biological constituents of interest. <u>The casing shall also withstand normal forces which act upon it during and after installation.</u> All resource protection well casing shall conform to ASTM Standards, or at least 304 or 316 stainless steel, PTFE, or Schedule 40 PVC casing.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-450 Well Sealing Requirements		
WAC 173-160-450(1) When drilling in known or potential areas of contamination, steam clean the drill rig derrick and all drilling equipment on site before and after well construction. If the equipment is used to drill in radioactive areas, you must develop a decontamination plan and the department must approve that plan prior to the equipment being removed from the drill site.	All resource protection wells constructed shall have a continuous seal, which seals the annular space between the bore hole and the permanent casing. The seal shall be constructed to prevent interconnection of separate aquifers penetrated by the well, and shall provide casing stability. <u>Except for environmental investigation wells, the seal shall have a minimum diameter of four inches larger than the nominal size of the permanent casing, and shall extend from land surface to the top of the filter pack. The filter pack shall be no less than one foot or greater than 5 feet above the screen interval. See figure 7. Wells that are installed using direct push technology will follow the sealing guidelines of WAC 173-160-451.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-450(4)(b)(iii) Concrete sealants consist of clean, hard and durable aggregate with not less than five sacks (ninety-four pounds per sack) of	(4)(b)(iii) Concrete sealants consist of clean, hard and durable aggregate with not less than five sacks (ninety-four pounds per sack) of Portland cement per cubic yard or concrete sealant <u>and water.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

Portland cement per cubic yard or concrete sealant.		
WAC 173-160-452 New Section on Direct Push Resource Protection Wells.	<p><u>What are the minimum standards for Direct Push Resource Protection Wells? (1) Resource protection wells that are installed using direct push technology shall comply with the applicable standards in these rules for reporting, casing, screening, development, surface protection, cleaning, tagging, and completion. (2) Resource protection wells that are installed using direct push technology shall also comply with the following standards: (a) Prepacked or sand packed screens shall be used. The sand pack or filter pack shall not extend more than three feet above the top or one foot below the bottom of the well screen; and (b) The outside diameter of the borehole shall be a minimum of one inch greater than the outside diameter of the well casing; and (c) Granular bentonite shall not be used in the sealed interval below the static water level. Prepacked or slurry sealant is required below static level. Any sealing method used must result in a continuous and effective seal meeting the minimum sealing standards of this chapter.(d) Direct push wells shall not be constructed through more than one water bearing formation and the seal shall be from the top of the sand pack to land surface. Direct push wells shall not be greater than 25 feet in depth unless a variance is obtained. A request for a variance must be accompanied by a site-specific plan. (e) If the total probe depth exceeds the depth of the bottom of the screen it must be properly decommissioned to the bottom of the screen.</u></p>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-454 New Section on Ground Source Heat Pump Borings.	<p><u>What are the minimum standards for construction of ground source heat pump borings? (1) General requirements.(a) Applicability of minimum standards. The minimum standards set forth herein apply to all</u></p>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv). Uncertain as to how many wells or what the effect this will have.

ground source heat pump borings as defined in WAC 173-160-111, constructed by a licensed operator. (b) Prohibition against other uses. Ground source heat pump borings cannot be used for any purpose other than heat exchange. After completion, ground source heat pump borings shall not be converted to any other type of well except by written approval by the department. The operator shall ensure that the ground source heat pump boring is constructed according to this chapter. (2) Location of ground source heat pump borings. (a) A ground source heat pump boring shall not be located within 100 feet from any water supply well. (b) The setback from public water supply wells for ground source heat pump borings must comply with applicable department of health sanitary control zone regulations for the public water supply wells. Where the sanitary control zone is greater than 100ft the set back should reflect the expanded distance. (c) Variances to the standard setback for water supply wells can be obtained when: (i) The approved sanitary control zone for the public supply well is less than 100ft. Notification and concurrence is required from the department of Health to insure that the new set back is consistent with the approved public water supply well sanitary control zone. Variances for public supply wells will be issued by the local or state health authority. (ii) The water supply well is not a public water supply well and the reduced set back is adequate to protect against encroachment on the well and can provide adequate protection against potential contamination. The reduced set back shall be no more than 75 ft. (d) No Variance shall be approved for a set back less than the approved sanitary control zone for a water supply well, unless it can be demonstrated that the water supply well is hydrogeologically protected from

any potential threat posed by the closed loop heat system.

(3) Construction standards for ground source heat pump borings. Site specific conditions shall be assessed to determine the best method and materials to be used for sealing the well annulus to protect the groundwater. (a) Casing material. If permanent casing is needed in a ground source heat pump boring, it must meet standards set out in WAC 173-160-201 for steel and for plastic.(b) In a closed-loop ground source heat pump boring, the material used to make up the heat exchange loop that is placed into the ground must be able to withstand the normal forces which act upon it during and after construction. It shall be resistant to the corrosive effects of the surrounding formations, earth, water, and heat exchange fluids within the pipe. (c) Pressure testing. Pressure testing will be done in accordance with manufacturer recommended specifications. The closed loop assembly pipe within the borehole shall not leak or cause contamination to the groundwater.(d) All fluids used in the construction and testing of ground source heat pump borings will be handled and utilized in a manner that does not contaminate the ground or surface waters of the state. (e) Borehole size. The hole size for ground source heat pump borings must be of sufficient size to allow placement of the heat exchange loop and, tremie pipe, but in no case shall the borehole diameter be less than six (6) inches when one (1) inch loop pipe is installed. When a loop pipe greater than one (1) inch is utilized, the size of the bore hole will be determined by Ecology. (f) Grouting of an uncased borehole. Grouting (sealing) the borehole of a ground source heat pump boring must be completed immediately after the heat exchange loop is installed to avoid cave-in of the uncased hole. The near surface area where the ground source heat pump borings

will be connected to a manifold to connect it to the closed loop system may be filled with earth materials. (i) Sealing must be done with n active solids content bentonite grout slurry (minimum 20% active solids by weight) per WAC 173-160-221. Use of Controlled Density Fill (CDF) is prohibited. (ii) Sealing material placed in the borehole shall be uncontaminated; drilling fluids must be purged from the borehole during the installation of the sealing material. Neither cuttings from the drilling process nor drilling fluid shall be used as borehole sealing material.(iii) Slurry mixes of bentonite grout shall be installed by pumping through a tremie pipe in a continuous operation using a positive displacement method. Polymer additives designed to retard swelling are acceptable for use with the bentonite grout per WAC 173-160-221(1)(a). The tremie pipe will extend the full depth of the borehole before pumping begins. Minimum slurry volume used must be equal to or exceed the calculated annulus volume of the borehole. Grouting material shall surround all pipes remaining in the borehole to land surface.(g) Grouting of a permanently cased borehole. Grouting of cased boreholes shall be sealed in accordance with this chapter. EXCEPT: when the casing is perforated from bottom to land surface and is pressure grouted in accordance with WAC 173-160-381(1)(a). (h) Unsuccessful installation of a ground source heat pump boring. If grouting is not successful, the department must pre-approve an alternate completion of the ground source heat pump boring. If an alternate completion is not approved, the well must be properly decommissioned. (i) An open loop system must meet the construction standards of a water well. If the withdrawal of ground water exceeds the exemption requirements of RCW 90.44.050, a water right permit is required. (j) It

	<p><u>shall be the responsibility of the driller to properly construct the bore hole, pressure test the loop pipe, install the loop pipe, and grout the bore hole.</u></p>	
<p>WAC 173-160-458 What are the minimum standards for construction of grounding wells? - New Section.</p>	<p>New Section <u>WAC 173-160- What are the minimum standards for construction of grounding well?</u></p> <ol style="list-style-type: none"> (1) <u>General requirements. Grounding wells (cathodic protection wells or anode wells) - These wells must be constructed in accordance with the provisions of Part One – General Requirements For Water Well Construction, Chapter 173-160 WAC.</u> (2) <u>Grounding wells shall be designed by an engineer, licensed in Washington State, trained in the design of corrosion protection wells.</u> (3) <u>The internal materials used and size of element installed shall meet all industry standards for cathodic protection and anode wells.</u> (4) <u>Grounding wells shall not pollute the waters of the state.</u> (5) <u>If constructed within 100 feet of a potential source of contamination, sealing is required to a minimum depth of 50 feet or the first significant confining layer, whichever is deeper, in accordance with WAC 173-160-241.</u> (6) <u>Where the well construction regulations cannot be met, a variance may be requested.</u> (7) <u>Grounding wells 25 feet in depth or less are exempt from these regulations, however, commingling of aquifers is still prohibited.</u> (8) <u>Driven grounding rods installed to a depth of 25 feet or less are exempt from these</u> 	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv). Uncertain as to how many wells or what the effect this will have.</p>

	<u>regulations.</u>	
WAC 173-160-460 Decommissioning Process for Resource Protection Wells and Geotech Soil Borings		
WAC 173-160-460(1) Resource protection wells borings that were not constructed in accordance with these regulations, or for which a drilling report required under this section is missing, shall be decommissioned in one of the following ways:	(1) Resource protection wells <u>and geotech soil borings</u> that were not constructed in accordance with these regulations, or for which a drilling report required under this section is missing, shall be decommissioned in one of the following ways:	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-460(1)(a)(iii) The remainder of the casing shall be filled with cement grout, neat cement, or bentonite slurry.	(1)(a)(iii) The remainder of the casing shall be filled with cement grout, neat cement, or bentonite slurry; or	Clarification. Exempt: RCW 34.05.328(5)(b)(iv).
WAC 173-160-460(1)(b) Withdraw the casing and fill the bore hole with cement grout, neat cement, or bentonite as the casing is being withdrawn	(1)(b) Withdraw the casing and fill the bore hole with cement grout, neat cement, or bentonite as the casing is being withdrawn	Clarification. Exempt: RCW 34.05.328(5)(b)(iv).
WAC 173-160-460(2) If it can be verified through a field examination and review of the drilling report that the resource protection well was constructed in accordance with these regulations, it shall be decommissioned by:	(2) ((If it can be)) <u>Wells with an inside casing diameter equal to or greater than one inch and constructed in accordance with these regulations as</u> If it can be verified through a field examination and review of the drilling report that the resource protection well was constructed in accordance with these regulations, it shall be decommissioned by:	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-460(2)(a) Filling the casing from bottom to land surface with bentonite, cement grout, or neat cement; and	(2) ((F)) filling the casing from bottom to land surface with bentonite, cement grout, or neat cement.	Clarification. Exempt: RCW 34.05.328(5)(b)(iv).
WAC 173-160-460(3) New Subsection.	(3) <u>Wells with an inside casing diameter less than 1”</u>	Clarification

	<u>shall be decommissioned by pressure grouting the entire casing length.</u>	Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-460(4) New Subsection.	<u>(4) Vibrating wire piezometers installed per WAC 173-160-450 are exempt from these decommissioning procedures.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-460(5) New Subsection.	<u>(5) Direct push wells shall be decommissioned according to WAC 173-160-450(1) and (2) above in accordance with this section..</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).
WAC 173-160-460(6) New Subsection.	<u>(6) Geotechnical soil borings, or boring, shall be decommissioned by sealing from bottom to land surface with bentonite, bentonite slurry, cement grout, or neat cement. Sealing material placed below the static water level shall be piped directly to the point of application or placed by means of a dump bailer or pumped through a tremie tube. If cement, neat cement grout, or neat cement is used to seal below the static water level in the well, the material shall be placed from the bottom up by methods that avoid segregation or dilution of the material. When used to place grout, the discharge end of the tremie tube shall be submerged in the grout to avoid breaking the seal while filling the annular space. Provided the material does not dilute or segregate and the resulting seal is free of voids, sealing material may be hand poured above the static water level.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv).

Table 2. Chapter 173-162 WAC – Regulation and licensing of well contractors and operators

CURRENT LANGUAGE	PROPOSED NEW LANGUAGE	ANALYSIS
173-162-030 - Definitions		
WAC 173-162-030(1) – “Abandoned well” means a well that is unused, unmaintained, or is in such disrepair as to be unusable	(1) "Abandoned well" means a well that is unused, unmaintained, or is in such disrepair as to be unusable.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(2) "Access port" is a 1/2- to 2-inch tapped hole or tube equipped with a screw cap, which provides access to the inner casing, for measurement of the depth to water surface. An access port also means a removable wellcap.	(10) "Access port" is a 1/2- to 2-inch tapped hole or tube equipped with a screw cap, which provides access to the inner casing, for measurement of the depth to water surface. An access port also means a removable wellcap.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(3) "Annular space" is the space between the surface or outer casing and the inner casing, or the space between the wall of the drilled hole and the casing. New Definition	(3) "Annular space" is the space between the surface or outer casing and the inner casing, or the space between the wall of the drilled hole and the casing.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(5) "Artesian well" is a well tapping an aquifer bounded above and below by confining or impermeable rock or soil layers, or rock or soil layers of distinctly lower permeability than the aquifer itself. The water will rise in the well above the point of initial penetration (above the bottom of the confining or impermeable layer overlying the aquifer). This term includes both flowing and nonflowing wells.	(5) "Artesian well" is a well tapping an aquifer bounded above and below by confining or impermeable rock or soil layers, or rock or soil layers of distinctly lower permeability than the aquifer itself. The water will rise in the well above the point of initial penetration (above the bottom of the confining or impermeable layer overlying the aquifer). This term includes both flowing and nonflowing wells.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(6) "Artificial gravel	(6) "Artificial gravel pack" is a mixture of gravel or sand	Deletion – Definition redundant and

<p>pack" is a mixture of gravel or sand placed in the annular space around the liner, perforated pipe, or well screen. A gravel pack is used to reduce the movement of finer material into the well and provide lateral support to the screen in unstable formations.</p>	<p>placed in the annular space around the liner, perforated pipe, or well screen. A gravel pack is used to reduce the movement of finer material into the well and provide lateral support to the screen in unstable formations.</p>	<p>found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-030(7) "Artificial recharge" is the addition of water to an aquifer by activities of man, such as irrigation or induced infiltration from streams, or injection through wells, trenches, pits, and ponds.</p>	<p>(7) "Artificial recharge" is the addition of water to an aquifer by activities of man, such as irrigation or induced infiltration from streams, or injection through wells, trenches, pits, and ponds.</p>	<p>Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-030(8) "Bentonite" is a mixture of swelling clay minerals, predominantly sodium montmorillonite.</p>	<p>(8) "Bentonite" is a mixture of swelling clay minerals, predominantly sodium montmorillonite.</p>	<p>Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-030(11) "Capped well" is a well that is not in use and has a watertight seal or cap installed on top of the casing.</p>	<p>(9) "Capped well" is a well that is not in use and has a watertight seal or cap installed on top of the casing.</p>	<p>Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-030(10) "Casing" is a pipe, generally made of metal or plastic, which is installed in the bore hole to maintain the opening.</p>	<p>(10) "Casing" is a pipe, generally made of metal or plastic, which is installed in the bore hole to maintain the opening.</p>	<p>Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-030(13) "Consolidated formation" means any geologic formation in which the earth materials have become firm and cohesive through natural rock forming processes. Such rocks commonly found in Washington include basalt, granite, sandstone, shale, conglomerate, and limestone. An uncased bore hole will normally remain</p>	<p>(11) "Consolidated formation" means any geologic formation in which the earth materials have become firm and cohesive through natural rock forming processes. Such rocks commonly found in Washington include basalt, granite, sandstone, shale, conglomerate, and limestone. An uncased bore hole will normally remain open in these formations.</p>	<p>Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)</p>

open in these formations.		
WAC 173-162-030 New language	See other definitions under chapter 173-160 WAC	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(12) "Constructing a well" or "construct a well" means: (a) Boring, digging, drilling, or excavating a well; (b) Installing casing, sheeting, lining, or well screens, in a well; or (c) Drilling a geotechnical soil boring. "Constructing a well" or "construct a well" includes the alteration of an existing well.	(1) "Constructing a well" or "construct a well" means: (a) Boring, digging, drilling, or excavating a well; (b) Installing casing, sheeting, lining, or well screens, in a well; or (c) Drilling a geotechnical soil boring; <u>or</u> (d) <u>Installing an environmental investigation well.</u> "Constructing a well" or "construct a well" includes the alteration of an existing well.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030 – New definition	(2) <u>"Continuing education provider" is any person, organization, school or other entity involved in education that has received approval from the department for their continuing education plan and curriculum.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(15) "Curbing" is a liner or pipe made of concrete, precast tile or steel installed in dug wells to provide an annular space between the well bore and the liner or pipe for sealing.	(15) "Curbing" is a liner or pipe made of concrete, precast tile or steel installed in dug wells to provide an annular space between the well bore and the liner or pipe for sealing.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(20) "Disinfection" or "disinfecting" is the use of chlorine, or other disinfecting agent or process approved by the department, in sufficient concentration and contact time adequate to inactivate coliform or other indicator organisms.	(20) "Disinfection" or "disinfecting" is the use of chlorine, or other disinfecting agent or process approved by the department, in sufficient concentration and contact time adequate to inactivate coliform or other indicator organisms.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(22) "Draw down" is	(22) "Draw down" is the measured difference between	Deletion – Definition redundant and

the measured difference between the static ground water level and the ground water level induced by pumping.	the static ground water level and the ground water level induced by pumping.	found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(23) "Drilled well" is a well in which the hole is usually excavated by mechanical means such as rotary, cable tool, or auger drilling equipment.	23) "Drilled well" is a well in which the hole is usually excavated by mechanical means such as rotary, cable tool, or auger drilling equipment.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC173-162-030(26) "Filter pack" means clean, well rounded, smooth, uniform, sand or gravel, which is placed in the annulus of the well between the bore hole wall and the liner, perforated pipe, or well screen to prevent formation material from entering the well.	(26) "Filter pack" means clean, well rounded, smooth, uniform, sand or gravel, which is placed in the annulus of the well between the bore hole wall and the liner, perforated pipe, or well screen to prevent formation material from entering the well.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC173-162-030(30) "Formation" means an assemblage of earth materials grouped together into a unit that is convenient for description or mapping.	(27) "Formation" means an assemblage of earth materials grouped together into a unit that is convenient for description or mapping.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030 - New Definition	<u>(30) "Environmental investigation well" means a cased hole intended or used to extract a sample or samples of ground water, vapor, or soil from an underground formation and which is decommissioned immediately after the sample or samples are obtained. An environmental investigation well is typically installed using direct push technology or auger boring and uses the probe, stem, auger, or rod as casing. An environmental investigation well is not a geotechnical soil boring.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(12) – “Geotechnical Information” means subsurface engineering properties used for the purpose of designing structures such as	<u>(26) “Structural properties Geotechnical Information” means subsurface engineering properties or geotechnical information used for the purpose of designing structures such as bridges, buildings,</u>	Clarification Exempt: RCW 34.05.328(5)(b)(iv)

bridges, buildings, highways, pipelines, or for assessing slope stability.	highways, pipelines, or for assessing slope stability.	
WAC 173-162-030(29) - "Geotechnical soil boring" or "boring" means an uncased well drilled for the purpose of obtaining soil samples to ascertain structural properties of the subsurface. Geotechnical soil boring includes auger borings, rotary borings, cone penetrometer probes and vane shear probes, or any other uncased ground penetration for geotechnical information.	(12) "Geotechnical soil boring" or "boring" means an uncased well drilled for the purpose of obtaining soil samples to ascertain structural properties of the subsurface. ((Geotechnical soil boring includes auger borings, rotary borings, cone penetrometer probes and vane shear probes, or any other uncased ground penetration for geotechnical information.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030 – New Definition	(13) <u>“Ground source heat pump boring” means a vertical boring constructed for the purpose of installing a closed loop heat exchange system for a ground source heat pump.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(31) (31) "Grout" is a fluid mixture of cement, bentonite, and water used to seal the annular space around or between well casings, or to decommission wells.	(31) "Grout" is a fluid mixture of cement, bentonite, and water used to seal the annular space around or between well casings, or to decommission wells.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-0162-030(32) "Impermeable" is a descriptive term for earth materials which have a texture or structure that does not permit fluids to perceptibly move into or through its pores or interstices.	(32) "Impermeable" is a descriptive term for earth materials which have a texture or structure that does not permit fluids to perceptibly move into or through its pores or interstices.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC173-162-030(16) - New definition.	(15) <u>“Grounding well” means a grounding electrode installed in the earth by the use of drilling equipment to prevent buildup of voltages that may result in undue hazards to persons or equipment. Examples are anode and cathode protection wells.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)

WAC 173-162-030(34) "Liner" means any device inserted into a larger casing, screen, or bore hole as a means of maintaining the structural integrity of the well	(34) "Liner" means any device inserted into a larger casing, screen, or bore hole as a means of maintaining the structural integrity of the well.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(35) "Lysimeter" means a well used to withdraw soil water or pore samples from subsurface soil or rock above the water table for chemical, physical, or biological testing.	(35) "Lysimeter" means a well used to withdraw soil water or pore samples from subsurface soil or rock above the water table for chemical, physical, or biological testing.)	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(37) "Nested well" means the installation of more than one cased resource protection well in one bore hole. This does not preclude casing reductions.	(37) "Nested well" means the installation of more than one cased resource protection well in one bore hole. This does not preclude casing reductions.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(40) "Permeability" is a measure of the ease of which liquids or gas move through a porous material. (a) For water, this is usually expressed in units of centimeters per second or feet per day. Hydraulic conductivity is a term for water permeability. (b) Soils and synthetic liners with a water permeability of 1×10^{-7} cm/sec or less may be considered impermeable.	(40) "Permeability" is a measure of the ease of which liquids or gas move through a porous material. (a) For water, this is usually expressed in units of centimeters per second or feet per day. Hydraulic conductivity is a term for water permeability. (b) Soils and synthetic liners with a water permeability of 1×10^{-7} cm/sec or less may be considered impermeable.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(41) "Piezometer" means a well designed to measure water level elevation at a specific depth beneath the water table.	41) "Piezometer" means a well designed to measure water level elevation at a specific depth beneath the water table.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(42) "Pollution" has the meaning provided in RCW	(42) "Pollution" has the meaning provided in RCW 90.48.020.	Deletion – Definition redundant and found in WAC 173-160-111.

90.48.020.		Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(43) "Pressure grouting" is a method of forcing grout into specific portions of a well for sealing purposes.	(43) "Pressure grouting" is a method of forcing grout into specific portions of a well for sealing purposes.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(44) "PTFE" means polytetrafluoroethylene casing materials such as teflon. The use of the term teflon is not an endorsement for any specific PTFE product.	(44) "PTFE" means polytetrafluoroethylene casing materials such as teflon. The use of the term teflon is not an endorsement for any specific PTFE product.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030 – New Definition.	(20) "Owner" or "well owner" means the person, firm, partnership, copartnership, corporation, association, other entity, or any combination of these, who owns the property on which the well is or will be constructed or has the right to the well by means of an easement, covenant, or other enforceable legal instrument for the purpose of benefiting from the well.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(46) - "PVC" means polyvinyl chloride a type of thermoplastic casing.	(46) "PVC" means polyvinyl chloride a type of thermoplastic casing.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(47) Remediation well" means a well used to withdraw ground water or inject water, air (for air sparging), or other solutions into the subsurface for the purpose of remediating, cleaning up, or controlling potential or actual ground water contamination.	(22) "Remediation well" means a well <u>intended or used</u> to withdraw ground water or inject water, air (for air sparging), or other solutions into the subsurface for the purpose of remediating, cleaning up, or controlling potential or actual ground water contamination.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(48) "Resource protection well" means a cased boring used to determine the existence or migration of pollutants within an underground formation. Resource	(23) "Resource protection well" means a cased boring <u>intended or used to collect subsurface information or to</u> determine the existence or migration of pollutants within an underground formation. Resource protection wells include monitoring wells, observation wells,	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)

protection wells include monitoring wells, observation wells, piezometers, spill response wells, vapor extraction wells, and instrumentation wells.	piezometers, spill response wells, <u>remediation wells</u> , <u>environmental investigation wells</u> , vapor extraction wells, <u>ground source heat pump boring</u> , <u>grounding wells</u> , and instrumentation wells.	
WAC 173-162-030(51) "Static water level" is the vertical distance from the surface of the ground to the water level in a well when the water level is not affected by withdrawal of ground water.	(51) "Static water level" is the vertical distance from the surface of the ground to the water level in a well when the water level is not affected by withdrawal of ground water.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(52) "Temporary surface casing" is a length of casing (at least four inches larger in diameter than the nominal size of the permanent casing) which is temporarily installed during well construction to maintain the annular space.	(52) "Temporary surface casing" is a length of casing (at least four inches larger in diameter than the nominal size of the permanent casing) which is temporarily installed during well construction to maintain an ((the)) annular space.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(54) - "Tremie tube" is a small diameter pipe used to place grout, filter pack material, or other well construction materials in a well.	(54) "Tremie tube" is a small diameter pipe used to place grout, filter pack material, or other well construction materials in a well.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(55) "Turbidity" means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.	(55) "Turbidity" means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(56) "Unconsolidated formation" means any naturally occurring, loosely cemented or poorly consolidated earth material including such materials as uncompacted gravel, sand, silt and clay. Alluvium, soil, and overburden are terms frequently used to describe such formations.	(56) "Unconsolidated formation" means any naturally occurring, loosely cemented or poorly consolidated earth material including such materials as uncompacted gravel, sand, silt and clay. Alluvium, soil, and overburden are terms frequently used to describe such formations.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(58) "Water well"	<u>(29)</u> "Water well" means any excavation that is	Clarification

means any excavation that is constructed when the intended use of the well is for the location, diversion, artificial recharge, observation, monitoring, dewatering or withdrawal of ground water .	constructed when the intended use of the well is for the location, diversion, artificial recharge, observation, monitoring, dewatering or withdrawal of ground water. <u>Water well includes ground source heat pump borings and grounding wells.</u>	Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(61) "Well completion" means that construction has progressed to a point at which the drilling equipment has been removed from the site, or a point at which the well can be put to its intended use.	(61) "Well completion" means that construction has progressed to a point at which the drilling equipment has been removed from the site, or a point at which the well can be put to its intended use.	Deletion – Definition redundant and found in WAC 173-160-111. Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(62) "Well contractor" means a resource protection well contractor and a water well contractor.	<u>(32) "Well contractor" means a resource protection well contractor and a water well contractor licensed and bonded under chapter 18.27 RCW.</u>	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(63) "Well driller(s)" or "driller(s)" is synonymous with "operator(s)."	(33) "Well driller(s)" or "driller(s)" (is synonymous with "operator(s) means a resource protection well contractor or operator and a water well contractor or operator."	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(64) "Well" means water wells, resources protection wells, instrumentation wells, dewatering wells, and geotechnical soil borings. Well does not mean an excavation made for the purpose of obtaining or prospecting for oil, natural gas, geothermal resources, minerals, or products of mining, or quarrying, or for inserting media to repressure oil or natural gas bearing formations, or for storing petroleum, natural gas, or other products.	(34) "Well" means water wells, resources protection wells, ((instrumentation wells,) dewatering wells, and geotechnical soil borings. Well does not mean an excavation made for the purpose of obtaining or prospecting for oil, natural gas, geothermal resources, minerals, or products of mining, or quarrying, or for inserting media to repressure oil or natural gas bearing formations, or for storing petroleum, natural gas, or other products.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-055 What types of		

operator licenses are available?		
<p>WAC 173-162-055 Five types of drilling licenses are available:</p> <p>(1) Water well operator training license.</p> <p>(2) Resource protection well operator training license.</p> <p>(3) Resource protection well operator license.</p> <p>(4) Water well operator license.</p> <p>(5) Conditional licenses for water or resource protection well drilling.</p>	<p>Five <u>Seven</u> types of drilling licenses are available:</p> <p>(1) Water well operator training license.</p> <p>(2) Resource protection well operator training license.</p> <p>(3) Resource protection well operator license.</p> <p>(4) Water well operator license.</p> <p>(5) Conditional licenses for water or resource protection well drilling.</p> <p><u>(6) Retirement license for water and/or resource protection well drilling.</u></p> <p><u>(7) Inactive license for water and/or resource protection well drilling.</u></p>	<p>Economic impact on drillers wishing to apply for the new category of license due to application fees.</p>
WAC 173-162-060 How do you qualify for each license?		
<p>WAC 173-162-060(1)(a)(i) Submit a completed application to the department on forms provided by the department and pay the department a twenty-five dollar application fee; and</p>	<p>(1)(a)(i) Submit a completed application to the department on forms provided by the department and pay the department a twenty-five <u>seventy-five</u> dollar application fee; and</p>	<p>Application fee will be increased from twenty five to seventy five dollars for each category of license (water and resource protection).</p>
<p>WAC 173-162-060 (1)(b)(iii) The work documented and initialed in the drilling log may be used in your application for a license under the training program completed, licensing category of this chapter.</p>	<p>(1)(b) (iii) The work documented and initialed in the drilling log (may) <u>shall</u> be used in your application for a license under the training program completed, licensing category of this chapter.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-060 (1)(b)(v) A trainee may apply and qualify for only one type (resource protection or water well drilling) of training license at a time.</p>	<p>(1)(b)(v) A trainee may apply and qualify for only one type <u>both a resource protection or and a water well drilling or training license at a time, provided they meet the provisions of WAC 173-162-060(1)(a) for each license they apply for.</u></p>	<p>Minor beneficial impact on those applicants who apply for both categories of licenses. The applicant will only need to go through the application process once (instead of twice) which theoretically could translate into more time spent on the</p>

		job making a salary.
WAC 173-162-060(2)(a)(i) Applicants who have never held a well operator license and whose qualifying drilling experience was started after the effective date of this regulation qualify if they:	(2)(a)(i) Applicants who have never held a well operator license and whose qualifying drilling experience was started after the effective date of this regulation qualify if they:	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-060(2)(A) Submit a completed application to the department on forms provided by the department and pay the department a twenty-five dollar application fee; and	(2)(a)(i) Submit a completed application to the department on forms provided by the department and pay the department a ((twenty-five)) <u>seventy-five</u> dollar application fee; and	Application fee increases from twenty five to seventy five dollars for each category of license (water and resource protection).
WAC 173-162-060(2)(B) Submit proof that they have acquired five thousand four hundred hours of drilling experience under the direct supervision of a licensed well operator; and	(2)(a)(i) Submit proof that they have acquired five thousand four hundred hours of drilling experience under the direct supervision of a licensed well operator. <u>Experience gained as a licensed trainee may be applied towards the experience requirements of this subsection;</u> and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-030(2)(a)(v). The department shall evaluate and approve all qualifying experience and educational training. If your qualifying drilling experience under (a)(i)(B) of this subsection is from another state, the department may require an on-site examination.	(2)(a)(v) The department shall evaluate and approve all qualifying experience and educational training. If your qualifying drilling experience under (a)(i)(B) (ii) of this subsection is from another state, the department may require an on-site examination.	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-060(2)(v)(ii) Applicants who have never held a well operator license and who have obtained at least twelve months of qualifying drilling experience before the effective date of this regulation qualify to receive a license if they:	(2)(v)(ii) Applicants who have never held a well operator license and who have obtained at least twelve months of qualifying drilling experience before the effective date of this regulation qualify to receive a license if they: —— (A) Submit a complete application to the department; and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)

<p>(A) Submit a complete application to the department; and</p> <p>(B) Pay a twenty-five dollar fee; and</p> <p>(C) Pass a written exam; and</p> <p>(D) Show proof that they have completed a total of twenty-four months of drilling experience under a licensed operator. Your proof must show that you started working towards a drilling license prior to the effective date of this regulation, and that you have been diligently and continuously working towards obtaining a drilling license since you started. Proof shall consist of tax records, pay statements, or other documentation showing that you were under the supervision of a licensed operator.</p> <p>(E) The department shall evaluate and approve all qualifying drilling experience. If your drilling experience under (a)(ii)(D) of this subsection is from another state, the department may require an on-site examination.</p> <p>(iii) Individuals who have been working towards obtaining a drilling license but have acquired less than twelve months of qualifying drilling experience prior to the effective date of this chapter, may apply their education and experience towards the requirements of a training license.</p>	<p>———— (B) Pay a twenty-five dollar fee; and</p> <p>———— (C) Pass a written exam; and</p> <p>———— (D) Show proof that they have completed a total of twenty-four months of drilling experience under a licensed operator. Your proof must show that you started working towards a drilling license prior to the effective date of this regulation, and that you have been diligently and continuously working towards obtaining a drilling license since you started. Proof shall consist of tax records, pay statements, or other documentation showing that you were under the supervision of a licensed operator.</p> <p>———— (E) The department shall evaluate and approve all qualifying drilling experience. If your drilling experience under (a)(ii)(D) of this subsection is from another state, the department may require an on-site examination.</p> <p>———— (iii) Individuals who have been working towards obtaining a drilling license but have acquired less than twelve months of qualifying drilling experience prior to the effective date of this chapter, may apply their education and experience towards the requirements of a training license.)</p>	
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WAC 173-162-060(2)(b)(i) Submit a completed application to the department on forms provided by the department and pay the department a twenty-five dollar application fee; and	(2)(b)(i) Submit a completed application to the department on forms provided by the department and pay the department a (twenty-five) <u>seventy-five</u> dollar application fee; and	Application fee increases from twenty five to seventy five dollars for each category of license (water and resource protection).
WAC 173-162-060(2)(c)(i)(A). Submit a completed application to the department on forms provided by the department and pay the department a twenty-five dollar application fee; and	(2)(c)(i)(A). Submit a completed application to the department on forms provided by the department and pay the department a (twenty-five) <u>seventy-five</u> dollar application fee; and	Application fee increases from twenty five to seventy five dollars for each category of license (water and resource protection).
WAC 173-162-060(2)(c)(i)(C). Have obtained thirty-two continuing educational units as approved by the department; and	(2)(c)(i)(C) Have obtained thirty-two continuing (educational) <u>education</u> units as approved by the department; and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-060(2)(c)(i)(F)(ii) Individuals, other than trainees, whose Washington operator license has been suspended, revoked, or whose license has expired may apply for a new license. These individuals qualify to receive a license if:	(2)(c)(i)(F)(ii) Individuals, other than trainees, whose Washington operator license has been suspended, revoked, <u>expired</u> or whose license <u>status</u> has (expired) <u>changed to retired or inactive</u> may apply for a new license. These individuals qualify to receive a license if:	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)
WAC 173-162-060(2)(c)(i)(F)(ii)(B) They submit a completed application to the department on forms provided by the department and pay the department a twenty-five dollar application fee; and	(2)(c)(i)(F)(ii)(B) They submit a completed application to the department on forms provided by the department and pay the department a ((twenty-five)) <u>seventy-five</u> dollar application fee; and	Economic impact to all drillers that apply for an active license. Application fee increases from twenty-five to seventy-five dollars for each category of license (water and resource protection).
WAC 173-162-060(2)(c)(i)(F)(ii)(C) They have obtained seven continuing educational units for each year or portion of a year the license has been revoked, suspended, or expired; and	(2)(c)(i)(F)(ii)(C) They have obtained seven continuing educational <u>education</u> units for each year or portion of a year the license has been revoked, suspended, <u>inactive</u> , <u>retired</u> , or expired; and	Clarification Exempt: RCW 34.05.328 (5)(b)(iv)

<p>WAC 173-162-060(3) Individuals who received an operator license for either water well or resource protection well drilling after the effective date of these regulations are qualified to receive the other license if they:</p>	<p>(3) Individuals who received an operator license for either water well or resource protection well drilling (after the effective date of these regulations) are qualified to receive the other license if they:</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-060(3)(a) Currently hold a valid well operator license under one of the categories in subsection (2) of this section. The license must have been issued by the department after the effective date of these regulations; and</p>	<p>(3)(a) Currently hold a valid well operator license under one of the categories in subsection (2) of this section The license must have been issued by the department after the effective date of these regulations; and</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>(b) Submit a completed application to the department on forms provided by the department and pay a twenty-five dollar application fee; and</p>	<p>(b) Submit a completed application to the department on forms provided by the department and pay a twenty-five <u>seventy-five</u> dollar application fee; and</p>	<p>Economic impact to all applicants that add either the water or resource protection well category of license to an existing license. Application fee increases from twenty-five to seventy-five dollars.</p>
<p>WAC 173-162-060(5) – New Section.</p>	<p><u>(5) Retirement license.</u> <u>(a) A person shall be qualified to receive a retirement license if you meet the following requirements.</u> <u>(i) Submit a completed application to the department on forms provided by the department and pay the department a seventy-five dollar application fee; and</u> <u>(ii) Hold a current active license for a minimum of 10 years; and</u> <u>(iii) Have no outstanding enforcement actions.</u> <u>(b) The holder of a retirement license may not engage in any licensed activities. The holder of a retirement license may apply for a new license under 173-162-060(2).</u></p>	<p>Nobody is required to obtain a Retirement license and provides no benefits to engage in well drilling activities. No impact</p>

<p>WAC 173-162-060(6) – New Section.</p>	<p><u>(6) Inactive license.</u> <u>(a) A person shall be qualified to receive an inactive license if you meet the following requirements.</u> <u>(i) Submit a completed application to the department on forms provided by the department and pay the department a seventy-five dollar application fee; and</u> <u>(ii) Show proof of inactive status based on military documents, hospitalization records, out of country drilling or other extraordinary circumstances as determined by the department; and</u> <u>(iii) Hold a current active license; and</u> <u>(iv) Have no outstanding enforcement actions.</u> <u>(b) Extraordinary circumstances does not include failure to notify the department of a change of address; postal service error and domestic disputes (divorce or separation).</u> <u>(c) The holder of an inactive license must re-submit an application to extend inactive license status at the end of each two year period.</u> <u>(iv) The holder of an inactive license may not engage in any licensed activities. The holder of an inactive license may apply for a new license under 173-162-060(2).</u></p>	<p>Economic benefit to those licensed drillers that want to become eligible for an inactive license. This allows them to reapply for an active license without having to go through training requirements.</p>
<p>WAC 173-162-070. What application fees are required?</p>	<p>.</p>	
<p>Application fees are twenty-five dollars for each operator or training license.</p>	<p>Application fees are twenty-five <u>seventy-five</u> dollars for each operator or training license</p>	<p>Economic impact to all applicants and licensed drillers. Application fees increase for operator and training licenses from twenty-five to seventy-five dollars.</p>
<p>WAC 173-162-075 How often do I need to renew my license?</p>		
<p>(2) A training license shall be valid for a</p>	<p>(2) A training license shall be valid for a period of two</p>	<p>Theoretical and minor benefit to</p>

<p>period of two years from the time it was originally issued. A training license cannot be renewed. However, a one-time extension may be granted upon show of good cause by the trainee. The limit of the extension shall be no longer than twenty-four months and will be evaluated on a case-by-case basis. A twenty-five dollar fee will be charged for the extension.</p>	<p>years from the time it was originally issued. A training license cannot be renewed. However, a one-time extension may be granted upon show of good cause by the trainee. The limit of the extension shall be <u>for no longer than twenty-four months. The trainee will be required to earn seven continuing education units for each year or portion of a year the license is held. The department may waive the continuing education requirement of this subsection.</u> Each request and will be evaluated on a case-by-case basis. A twenty-five <u>seventy-five</u> dollar fee will be charged for the extension.</p>	<p>trainees that qualify for extension.</p>
<p>WAC 173-162-080 What are the conditions and cost of renewing a drilling license?</p>		
<p>WAC 173-162-080(2) (a) Submit a completed application on forms provided by the department; and</p>	<p>(2)(a) Submit a completed application on forms <u>approved</u> provided by the department; and</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-080(2)(b) Except as provided in subsection (3) of this section, show proof that they successfully completed fourteen continuing education units during the past twenty-four months of the license term; and</p>	<p>(2)(b) Except as provided in subsection (3) of this section, Show proof that they successfully completed fourteen continuing education units during the past twenty-four months of the license term. <u>A minimum of two continuing education units out of the fourteen required units must be about Washington State drilling or licensing regulations;</u> and</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-080(2)(c) Pay a twenty-dollar renewal fee for each license they wish to renew.</p>	<p>(2)(c) Pay a twenty <u>seventy-five</u> dollar renewal fee for each license they wish to renew.</p>	<p>Economic impact to all licensed drillers that renew a water and/or resource protection license. Renewal fee increases from twenty to seventy-five dollars.</p>
<p>(3) If you currently hold a valid operator license that was issued prior to the effective date of this regulation, you may renew that license and receive a</p>	<p>(3) If you currently hold a valid operator license that was issued prior to the effective date of this regulation, you may renew that license and receive a water well operator license and/or a resource protection well operator license</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>

<p>water well operator license and/or a resource protection well operator license without meeting the requirements for continuing education until you apply for license renewal in the year 2000.</p>	<p>without meeting the requirements for continuing education until you apply for license renewal in the year 2000.)</p>	
<p>WAC 173-162-080(5) If your license has expired, you must apply for a new license as provided in this chapter.</p>	<p>(4) If your license has expired, <u>you will have thirty days in which to renew it. The thirty day extension period is intended to be used only to submit a late application and fee. It is not to be used to gain continuing education units. You must not engage in any licensed activities during this time. If you fail to submit your renewal application, fee, and proof of continuing education after the extension period has expired, you must apply for a new license as provided in this chapter.</u></p>	<p>Legislative Mandate, Senate Bill 5831. Exempt: RCW 34.05.328 (5)(b)(v).</p>
<p>WAC 173-162-085 Continuing education.</p>		
<p>(1) What is continuing education? Continuing education is your opportunity to gain additional knowledge into subjects that directly relate to the drilling profession. It is designed to enhance your drilling skills, keep you informed on technological advances, and keep you informed on current state and local regulations. The ultimate goal is to ensure the highest quality of professional drilling. Continuing education is required of every person applying for an operator license and for every driller renewing an operator license. (2) How do I obtain the required continuing education credit? (a) Continuing education may be</p>	<p>(1) What is continuing education? Continuing education is your opportunity to gain additional knowledge into subjects that directly relate to the drilling profession. It is designed to enhance your drilling skills, keep you informed on technological advances, and keep you informed on current state and local regulations. The ultimate goal is to ensure the highest quality of professional drilling. Continuing education is required of every person applying for an operator license and for every driller renewing an operator license. (2) How do I obtain the required continuing education credit? (a) Continuing education may be obtained from a number of sources. The department as well as other state and local agencies may provide continuing education classes. Additionally, private organizations or individuals may also present approved classes for credit.</p>	<p>This chapter has been deleted and replaced with a new chapter.</p>

<p>obtained from a number of sources. The department as well as other state and local agencies may provide continuing education classes. Additionally, private organizations or individuals may also present approved classes for credit.</p> <p>(b) The primary ways to receive credits will be:</p> <p>(i) Attend and/or successfully complete classes, courses, workshops, or seminars that have been preapproved for credit; and/or</p> <p>(ii) Have the class, course, workshop, or seminar you plan on attending or have attended evaluated by the technical advisory group and approved by the department for credit; and/or</p> <p>(iii) Completion of correspondence courses will be considered and evaluated on a case-by-case basis.</p> <p>(3) How will credit be assigned?</p> <p>(a) The technical advisory group shall evaluate all courses, classes, workshops, or seminars and recommend assignment of continuing education credits. Their evaluation shall be reviewed by the department for approval.</p> <p>(b) The following criteria shall be utilized to evaluate and assign credit:</p> <p>(i) Course agenda and how well</p>	<p>_____ (b) The primary ways to receive credits will be:</p> <p>_____ (i) Attend and/or successfully complete classes, courses, workshops, or seminars that have been preapproved for credit; and/or</p> <p>_____ (ii) Have the class, course, workshop, or seminar you plan on attending or have attended evaluated by the technical advisory group and approved by the department for credit; and/or</p> <p>_____ (iii) Completion of correspondence courses will be considered and evaluated on a case-by-case basis.</p> <p>_____ (3) How will credit be assigned?</p> <p>_____ (a) The technical advisory group shall evaluate all courses, classes, workshops, or seminars and recommend assignment of continuing education credits. Their evaluation shall be reviewed by the department for approval.</p> <p>_____ (b) The following criteria shall be utilized to evaluate and assign credit:</p> <p>_____ (i) Course agenda and how well the subject relates to the business, technical, and/or regulatory aspects of well drilling and to the knowledge, skills, and abilities required in the well drilling profession.</p> <p>_____ (ii) Subject(s) difficulty.</p> <p>_____ (iii) Instructor qualifications.</p> <p>_____ (iv) Student course evaluations may be utilized to assign credit to courses.</p> <p>_____ (c) Course sponsors may have their courses preapproved by submitting a request to the department on forms provided by the department.</p> <p>_____ (d) Individuals planning on attending or who have attended classes, courses, workshops, or seminars that were not preapproved for credit must request a course evaluation and credit approval through the department on forms provided by the department.</p>	
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the subject relates to the business, technical, and/or regulatory aspects of well drilling and to the knowledge, skills, and abilities required in the well drilling profession.

(ii) Subject(s) difficulty.

(iii) Instructor qualifications.

(iv) Student course evaluations may be utilized to assign credit to courses.

(c) Course sponsors may have their courses preapproved by submitting a request to the department on forms provided by the department.

(d) Individuals planning on attending or who have attended classes, courses, workshops, or seminars that were not preapproved for credit must request a course evaluation and credit approval through the department on forms provided by the department.

(e) All courses, classes, workshops, or seminars must be open to anyone who wants to attend. This does not preclude a provider from imposing reasonable requirements for attendees such as fees and providing their own safety equipment.

(4) What types of general topics, workshops or seminars will be accepted?

(a) General subject areas include: Occupational health and safety; business and office skills;

~~———— (e) All courses, classes, workshops, or seminars must be open to anyone who wants to attend. This does not preclude a provider from imposing reasonable requirements for attendees such as fees and providing their own safety equipment.~~

~~———— (4) **What types of general topics, workshops or seminars will be accepted?**~~

~~———— (a) General subject areas include: Occupational health and safety; business and office skills; interpersonal skills; technical aspects associated with drilling; and other subject areas approved by the department.~~

~~———— (b) Workshops, seminars, classes, or courses conducted by professional associations, governmental agencies, private businesses, and individuals, may be accepted, provided the subject(s) meets the provisions of this chapter.~~

~~———— (5) **How do I get credit for participating in a continuing education program?**~~

~~———— (a) A person is qualified to receive continuing education credit upon showing proof of attendance at an approved class, course, workshop, or seminar.~~

~~———— (b) Proof includes: Certificates of completion; transcripts; attendance rosters; diplomas; or other documents approved by the department.~~

~~———— (6) **General information on continuing education:**~~

~~———— (a) Credits received during a renewal period that are in excess of the requirements cannot be used for any succeeding years. EXAMPLE: A driller earning 20 continuing educational credits during their two-year renewal period cannot apply the six credits towards a future renewal.~~

~~———— (b) Credits shall not be assigned to courses, workshops, classes, or seminars attended prior to July 1,~~

<p>interpersonal skills; technical aspects associated with drilling; and other subject areas approved by the department.</p> <p>(b) Workshops, seminars, classes, or courses conducted by professional associations, governmental agencies, private businesses, and individuals, may be accepted, provided the subject(s) meets the provisions of this chapter.</p> <p>(5) How do I get credit for participating in a continuing education program?</p> <p>(a) A person is qualified to receive continuing education credit upon showing proof of attendance at an approved class, course, workshop, or seminar.</p> <p>(b) Proof includes: Certificates of completion; transcripts; attendance rosters; diplomas; or other documents approved by the department.</p> <p>(6) General information on continuing education:</p> <p>(a) Credits received during a renewal period that are in excess of the requirements cannot be used for any succeeding years. EXAMPLE: A driller earning 20 continuing educational credits during their two-year renewal period cannot apply the six credits towards a future renewal.</p> <p>(b) Credits shall not be assigned</p>	<p>1993.</p> <p>———— (c) It is the operator's/trainee's responsibility to track and maintain records of their continuing education credits.</p> <p>———— (d) Continuing education units will not be required to renew an operator license prior to January 1, 2000.</p> <p>———— (e) A person licensed for both water well and a resource protection well construction need only obtain fourteen continuing educational units per renewal period.</p> <p>———— (f) A person applying to receive both a water well and resource protection well operator license need only meet the continuing education unit requirements for one license.</p>	
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<p>to courses, workshops, classes, or seminars attended prior to July 1, 1993.</p> <p>(c) It is the operator's/trainee's responsibility to track and maintain records of their continuing education credits.</p> <p>(d) Continuing education units will not be required to renew an operator license prior to January 1, 2000.</p> <p>(e) A person licensed for both water well and a resource protection well construction need only obtain fourteen continuing educational units per renewal period.</p> <p>(f) A person applying to receive both a water well and resource protection well operator license need only meet the continuing education unit requirements for one license.</p>		
<p>WAC 173-162-085 – New Chapter</p>	<p>(1) <u>What is continuing education?</u></p> <p><u>Continuing education is your opportunity to gain additional knowledge into subjects that directly relate to the well drilling profession. It is designed to enhance your knowledge, drilling skills, and keep you informed on technological advances, as well as keeping you informed on current state and local regulations. The ultimate goal is to ensure the highest quality of professionalism in the well drilling industry. Continuing education is required of every person applying for an operator's license and for every licensed operator renewing their license. Continuing Education Units (CEUs) are earned by attending continuing educational programs.</u></p>	<p>Economic impact to licensed drillers because availability of continuing education providers will be reduced. Ecology no longer offers core Continuing Education Units at a reduced rate.</p>

Continuing education programs consist of approved training, classes, courses, workshops, offerings, correspondence instructions, or other means of providing instruction.

(2) How do I obtain required continuing education units?

(a) Except as provided for in this chapter, continuing education units will only be obtained from an approved continuing education provider (A continuing education provider is: any person, organization, school or other entity involved in education and have received approval from the department for their continuing education plan and curriculum.

(b) The department shall maintain a current list of all continuing education providers and programs. This list will be available on the department's web page and/or by request.

(c) In order to receive continuing education units you must successfully complete continuing education programs. You must be present throughout the entire instructional period in order to be eligible to receive full credit.

(3) How do I become an approved continuing education provider?

Persons, organizations, schools, and other entities that provide training and education must submit a continuing education plan to the department for approval. Upon approval of the plan, the requestor becomes an approved continuing education provider. The department may waive the requirement to have a continuing education plan for colleges, universities, or other entities that have an accreditation

requirement of their own.

(a) What are the required elements of a continuing education plan?

A continuing education plan must contain the following required elements:

(i) Contact information.

Name of the person, organizations, schools, and other entities applying to become an approved continuing education provider. Their mailing address, telephone number(s), and e-mail address. Names of a contact person(s), their mailing address, telephone number(s), and e-mail address.

(ii) Statement of Qualifications.

A statement of qualifications consists of a summary of the providers experience in providing educational programs; references; and lists of any licenses they hold and/or membership in any professional organizations.

(iii) Statement of Resources.

A statement of resources shall identify the location(s) of the continuing educational program and the number of individuals required to put on the program.

(iv) Statement of Organization.

A statement of organization consists of a summary of how the courses will be advertised; number and frequency of classes offered during the year; a description of the method to be used to evaluate courses; a description of how attendance will be verified and reported to

	<p><u>Ecology; a description of the type of proof of completion to be awarded to each student; and a cancellation policy.</u></p> <p>(v) <u>Statement of Accountability.</u> <u>The statement of accountability shall justify the cost of the class and include a statement assuring delivery of courses by the provider.</u></p> <p>(b) <u>As provided for in this chapter, the department in consultation with the Technical Advisory Group created in RCW 18.104.190 may waive the requirement for a provider to have a continuing educational plan consistent with the goals of this WAC.</u></p> <p>(4) <u>How do I get credit for participating in a continuing education program and report units to the department?</u></p> <p>(a) <u>A person is qualified to receive continuing education units after the program has been evaluated and upon showing proof of attendance and completion of an approved continuing education program. Each continuing education provider is required to provide their students with documentation, approved by the department, showing successful completion of the program.</u></p> <p>(b) <u>All operators/trainees must report their continuing education units to the department prior to their license renewal date.</u></p> <p>(c) <u>The department will keep a record of the licensees' continuing education units as they are submitted. You may access your record through the department's web site or request a copy of your record.</u></p> <p>(d) <u>It is the individual's responsibility to track</u></p>	
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	<p><u>and maintain records of their continuing education units.</u></p> <p><u>(5) General information on continuing education:</u></p> <p><u>(a) Continuing education units received during a renewal period that are in excess of the requirements cannot be used for any succeeding years. EXAMPLE: A driller earning 20 continuing education units during their two year renewal period cannot apply the six extra units towards any future renewal.</u></p> <p><u>(b) New applicants may have continuing education units assigned for courses, workshops, classes, or seminars attended no more than five years prior to their application date.</u></p> <p><u>(c) An individual licensed for both water well and resource protection well construction need only obtain 14 continuing education units per renewal period.</u></p> <p><u>(d) An individual applying for a new license for both a water well and resource protection well operator's license need only meet the continuing education unit requirements for one license.</u></p> <p><u>(e) For new applicants or currently licensed individuals, two continuing education units must cover Washington State Department of Ecology Laws and Regulations provided by the Department or their designee.</u></p> <p><u>(6) What topics will be approved for continuing education programs?</u></p> <p><u>(a) General topics include: Occupational health and safety; business and office skills; interpersonal skills; technical aspects associated with well</u></p>	
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design, construction, development, maintenance, and testing; geology and groundwater sciences, safety, welding, HAZMAT training, first aid; and other topics relating directly to well construction and the groundwater industry as approved by the department. The department may also request approved continuing education providers to cover certain topics in their continuing education plan based on trends or observations from department compliance officers.

(7) How will continuing educational units be assigned?

(a) The following criteria shall be utilized when evaluating programs and assign continuing education units.

(i) The subjects' relevance to the business, technical, and/or regulatory aspects of well drilling;

(ii) How well the subject will enhance the knowledge, skills, and abilities required in the well drilling profession;

(iii) Length of program; and

(iv) Final group selection.

The program syllabus must be reviewed in order to address these criteria.

(b) A program syllabus shall contain the following:

(i) Course title.

(ii) Instructor name(s).

(iii) Instructor qualifications.

(iv) Course length.

(v) Course outline, detailing specific subject material to be taught and testing schedule.

(vi) A statement regarding how the

	<p><u>course pertains to the business, technical, regulatory, and safety aspects of well construction.</u></p> <p><u>(vii) A statement regarding the goals and objectives of each class.</u></p> <p><u>(viii) A statement that the class will be open to all who desire to attend.</u></p> <p><u>(ix) Admission cost.</u></p> <p><u>(x) A description of textbooks, supplemental readings, or materials such as safety equipment, calculators, or other items the attendee will need to provide.</u></p> <p><u>(xi) The date and time of the course and driving directions.</u></p> <p><u>(c) Based on the syllabus review, each continuing educational program will be categorized into one of seven groups:</u></p> <p><u>(i) Group One - Subjects that directly relate to the business, technical, regulatory, and safety aspects of well construction; and Subjects that enhance ground water protection and increased professionalism within the drilling community.</u></p> <p><u>A. Washington well construction and licensing statutes and regulations.</u></p> <p><u>B. Construction methodology, well design, development, maintenance, and testing.</u></p> <p><u>C. Protection of the ground water resource.</u></p> <p><u>D. Hydrogeology and ground water science.</u></p> <p><u>E. Equipment operation and maintenance.</u></p> <p><u>F. Computer skills.</u></p>	
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	<p><u>G. Welding</u></p> <p><u>H. Business management and office skills.</u></p> <p><u>I. Interpersonal skills</u></p> <p><u>J. Occupational health and safety.</u></p> <p><u>K. Map reading skills.</u></p> <p><u>L. Local and State Health regulations.</u></p> <p><u>M. DOT regulations.</u></p> <p>(ii) <u>Group Two- Subjects that will improve the industries knowledge and understanding of subjects related to ground water.</u></p> <p>(iii)<u>Group Three - Subjects not covered under Group One or Two, but benefit the driller in their professional development.</u></p> <p><u>A. Vender specific product/sales courses</u></p> <p><u>B. Pumps</u></p> <p>(iv) <u>Group Four - Miscellaneous courses</u></p> <p><u>A. College courses</u></p> <p><u>B. Correspondence courses</u></p> <p><u>C Trade school courses that do not fall into another group.</u></p> <p>(v) <u>Group Five - Attending conventions (trade show).</u></p> <p><u>A. Washington Ground Water Association</u></p> <p><u>B. National Ground Water Association</u></p> <p><u>C. Pacific Northwest Expo</u></p> <p><u>D. Other state recognized conventions</u></p> <p>(vi) <u>Group Six - Pre approved classes</u></p> <p><u>A. OSHA HAZWOPPER 40 hour basic course - 20 credits</u></p>	
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	<p><u>B. OSHA HAZWOPPER 8 hour refresher - 4 credits</u></p> <p><u>C. Red Cross 8 hour first aid/cpr - 4 credits</u></p> <p><u>D. Others as approved by the department</u></p> <p><u>(vii) Group Seven - Programs for which no credits are assigned.</u></p> <p><u>(e) A program will be assigned continuing educational unit(s) based on the group that best describes the training session and the published length of the training session.</u></p> <p><u>The following is a unit value for each group:</u></p> <p><u>Group One - One unit per hour</u></p> <p><u>Group Two - One half unit per hour</u></p> <p><u>Group Three - One quarter unit per hour</u></p> <p><u>Group Four - Unit value equal to the educational credit, not to exceed four continuing education units per license renewal period or trainee applicant. No more than eight for all other applicants.</u></p> <p><u>Group Five -One unit per convention</u></p> <p><u>Group Six -As listed</u></p> <p><u>Group Seven-No unit value</u></p> <p><u>(f) Operators/trainees who have attended continuing education programs that were not previously approved may receive continuing education units by providing an application to become a provider and class syllabus form to the department.</u></p> <p><u>(g) Individuals may receive continuing education units for preparing and presenting classes as follows:</u></p> <p><u>(i) No continuing education units will be</u></p>	
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	<p><u>assigned for class preparation/presentation to non-drilling audiences.</u></p> <p><u>(ii) One continuing education unit per hour of presentation and 1 CEU per hour of preparation time. Continuing education units allowed for preparation time are limited to no more than twice the time it took to present the course. Example- 1hour class, no more than 2 hours preparation time allowed. Total 3 CEU's</u></p> <p><u>(h) All continuing education programs must be open to anyone who wants to attend. This requirement does not preclude a provider from imposing reasonable requirements for attendees such as, but not limited to fees, space limitations and providing their own safety equipment.</u></p> <p><u>8. What is the department's role in providing continuing education?</u></p> <p><u>a. The department shall approve all continuing education programs and assign continuing educational units required by this chapter. The technical advisory group shall assist the department in their evaluation by reviewing continuing education programs and recommending assignment of continuing education units on classes referred to them by the department.</u></p> <p><u>b. The department will provide technical support including those meeting the requirements in 5(e), in the form of speakers and materials for use in continuing education programs to approved continuing education providers upon request and at their sole discretion.</u></p>	
<p>WAC 173-162-090 Examination – Notification of Examinations</p>		

<p>WAC 173-162-090. Upon receipt of a properly completed application, the department shall notify the applicant of the date, time and place of the next scheduled examination. All incomplete application forms will be returned for completion. The applicant should notify the department if the examination schedule cannot be met and the reasons therefore.</p>	<p>Upon receipt of a properly completed application, the department shall notify the applicant of the date, time and place of the next scheduled examination. All incomplete application forms will be returned for completion. The applicant should notify the department if the examination schedule cannot be met and the reasons therefore therefore.</p>	<p>This section was removed from the proposed rule since there was no change in the wording from the underlined to the strikeout so, hence, will not be evaluated.</p>
<p>WAC 173-162-095 What should I know about the written and on-site examinations?</p>		
<p>WAC 173-162-095(3)(b) Upon receipt of a completed application package, the department shall notify you of the date, time and place of the next scheduled written examination. You shall notify the department if you cannot meet the examination schedule. Your notice shall include the reason(s) why you cannot meet the schedule.</p>	<p>(3)(b) Upon receipt of a completed application package, the department shall notify you of the date, time and place of the next scheduled written examination. You shall notify the department <u>at least twenty-four hours prior to your scheduled exam date</u> if you cannot meet the examination schedule. Your notice shall include the reason(s) why you cannot meet the schedule. <u>If you fail to notify the department, or fail to reschedule your exam within thirty days of your initial exam date, you will forfeit your application and fee. You must submit a new application and fee in accordance with WAC 173-162-060 if you wish to take the exam.</u></p>	<p>Theoretical minor economic costs for those applicant's that fail to take the written or on-site exam on the required date. Unable to quantify how many may not schedule exam within 30 day window.</p>
<p>WAC 173-162-095(3)(c) Following the receipt of your test results, you will be responsible to select an authorized on-site advisor. The advisor will assist you and the department with coordinating the on-site examination. A list of the on-site advisors will be included with your test results.</p>	<p>(3)(c) (Following the receipt of your test results, you will be responsible to select an authorized on-site advisor. The advisor will assist you and the department with coordinating the on-site examination. A list of the on-site advisors will be included with your test results.)</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>

<p>WAC 173-162-095(3)(d) You, the advisor, and the department will schedule a mutually agreed upon time and place for the on-site exam. RCW 18.104.080 requires that examinations be held within thirty days after a completed application is filed with the department. If this is not practical, you must notify the department and request an extension to the testing schedule. Your request shall include:</p>	<p>(d) You, the advisor, and the department will schedule a mutually agreed upon time and place for the on-site exam. RCW 18.104.080 requires that examinations be held within thirty days after a completed application is filed with the department. If this is not practical, you must notify the department and request an extension to the testing schedule. Your request shall include:</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-095(4)(d)(i) The reason(s) why you cannot meet the schedule.</p>	<p>(4)(d)(i) The reason(s) why you cannot meet the schedule.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-095(4)(d)(ii) Acceptable reasons for rescheduling exams may include: Weather; availability of advisors or department staff; or health problems.</p>	<p>(4)(d)(ii) Acceptable reasons for rescheduling exams may include: Weather; availability of advisors or department staff; or health problems.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-095(4)(e) Failure to complete the on-site exam within ninety days may result in having to reapply and reschedule another on-site exam.</p>	<p>(4)(e) Failure to complete the on-site exam within ninety days may result in having to reapply and reschedule another on-site exam.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-095(4)(f) You and the on-site advisor will arrange for all the equipment, materials, and location for the on-site examination.</p>	<p>(4)(f) You (and the on-site advisor will) shall arrange for all the equipment, materials, and location for the on-site examination.</p>	<p>Clarification Exempt: RCW 34.05.328 (5)(b)(iv)</p>
<p>WAC 173-162-140 What are the requirements to become an on-site testing advisor? (1) To qualify to be an on-site testing advisor you must: (a) Be a Washington state licensed operator in good standing; and</p>	<p>((WAC 173-162-140 What are the requirements to become an on-site testing advisor? (1) To qualify to be an on-site testing advisor you must: (a) Be a Washington state licensed operator in good standing; and (b) Have held that Washington state operator</p>	<p>Because permanent Ecology staff give on-site exams instead of an independent on-site testing advisor, this theoretically could lead to a minor and negligible benefit to applicants and drilling companies,</p>

<p>(b) Have held that Washington state operator license for a period of five years; and</p> <p>(c) Not have been issued an order or penalty under chapter 18.104 RCW, except for failure to renew a license; and</p> <p>(d) Pass a written evaluation of your drilling expertise and an oral interview provided by the department; and</p> <p>(e) Enter a written agreement with the department which will describe the scope, duties, and responsibilities of the on-site testing advisor.</p> <p>(2) All agreements will be evaluated on an annual basis and renewed upon approval of the department.</p>	<p>license for a period of five years; and</p> <p>(c) Not have been issued an order or penalty under chapter 18.104 RCW, except for failure to renew a license; and</p> <p>(d) Pass a written evaluation of your drilling expertise and an oral interview provided by the department; and</p> <p>(e) Enter a written agreement with the department which will describe the scope, duties, and responsibilities of the on-site testing advisor.</p> <p>(2) All agreements will be evaluated on an annual basis and renewed upon approval of the department.</p>	<p>since the staff person is required to set a date, time and location that is most convenient for the applicant. Benefit unquantifiable.</p>
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Table 3. Potential Sources of Contamination

(Environmental Protection Agency)

Code	Description	Risk [GW]	Risk [SW]
ABS	Body Shop/Paint Shop	3	3
AFH	Animal Feeding Area / Pens - High Risk	3	3
AFL	Animal Feeding Area / Pens - Low Risk	1	1
AFM	Animal Feeding Area / Pens - Medium Risk	2	2
AGR	Agriculture Chemical - Formulation/Distribution (pesticides)	3	3
AIR	Airport	2	2
ALS	Airport / Landing Strip	2	2
ASP	Asphalt Plant	1	1
AST	Above Ground Storage Tank (non-water)	3	3
ATT	Animal Dipping Vat	3	3
AWS	Alternate Water Source	1	1
AWW	Abandoned/Improperly Constructed Water Well	3	1
BAT	Battery Recyclers	3	3
C1I	Class I Injection Well (Industrial & Hazardous)	3	3
C2I	Class II Injection Well (Produced Brine)	2	2
C3I	Class III Injection Well (Mining)	3	3
CEM	Cemetery	1	1
CHP	Chemical Plant	3	3
CIP	Commercial / Industrial Property	3	3
CPD	Cesspool - domestic	3	2
CRC	CERCLA Site	3	3
CTP	Chlorine Treatment for Water Supply Well	0	0
CVC	Class V - High Capacity Cesspools	3	3
CVI	Class V - Industrial Waste Disposal Well	3	3
CVM	Class V - Motor Vehicle Waste Disposal Well	3	3
CVO	Class V - Other	1	3
CVS	Multiple family septic system	2	1
CWA	Car Wash	1	1
CWW	Commercial Water Well	1	1
DCL	Dry Cleaner / Laundromat	3	3
DST	Distribution Box for PWS	0	0
DWW	Domestic Water Well	2	1
ENG	Auto/Boat/Tractor/Small Engine Shop	3	3
FNR	Funeral Home	1	1
FST	Furniture Stripping	2	2
GLF	Golf Course	2	2
HOS	Hospital	1	1

IAW	Inactive Water Well	2	1
IHW	Interstate Highway	3	3
IPW	Inactive Alternate Public Water Source	1	1
IRR	Irrigation Well	1	1
JKY	Junk Yard (domestic)	2	1
LFR	Sanitary Landfill - Regulated	2	1
LFU	Sanitary Landfill - Unregulated	3	2
LMB	Lumber Mill	1	1
MIF	Military Facility	3	3
MPW	Metal Plating / Metal Working	2	3
MTW	Monitoring or Test Well	2	1
NRS	Plant Nursery	2	2
NUC	Nuclear Plant	1	1
ODA	Oil/Gas Well / Associated Drilling Activities (Including Impoundments)	3	2
OLH	Other Line Source - High Risk	3	3
OLL	Other Line Source - Low Risk	2	2
OLM	Other Line Source - Low Risk	1	1
OPH	Other Point Source - High Risk	3	3
OPL	Other Point Source - Low Risk	1	1
OPM	Other Point Source - Medium Risk	2	2
OUH	Other Land Use Source- High Risk	3	3
OUL	Other Land Use Source - Low Risk	1	1
OUM	Other Land Use Source - Medium Risk	2	2
OUT	Outhouse	3	2
OXP	Waste Water Oxidation Pond	3	3
PCS	Pipeline Compressor Stations	1	1
PDP	Promiscuous Dump	2	2
PGR	Paved/Gravel Local Road	1	1
PPL	Pipeline	3	3
PPR	Paper Mill	1	2
PRF	Pasture/Range/Forest Land	1	1
PRK	Parking Lot	2	3
PRN	Printing Shops	1	1
PWP	Power Plant	1	1
PWS	Public Water Supply Well	0	0
RCA	RCRA Site	3	2
RCC	Recycling Center	1	1
RCR	Row Crop	3	3
RRL	Railroad	3	3
RSR	Residential/Recreational	2	2
RYL	Railroad Yard - Loading and Offloading	2	2
RYM	Railroad Yard - Maintenance	2	2
SEP	High Capacity Septic System	3	3

SET	Single Family Septic System	2	1
SEW	Sewer Lift Station	2	2
SGP	Sand/Gravel Pit	1	1
SHT	Sewage Holding Tank	1	1
SHW	State/Federal Highway	2	2
SLV	Salvage Yard (automotive / scrap)	3	3
SPC	Shopping Center	2	1
SPR	Spring	0	0
SRB	Storm water run-off infiltration basin	2	1
SSS	Road Salt Storage Area	1	1
STP	Sewer Treatment Plant	2	1
SWW	State Water Supply Well	0	0
TRT	Truck Terminal	3	3
TSD	Transfer Station / Dumpster	2	2
UST	Underground Storage Tank	3	3
WAA	Waste Application Area	2	2
WPP	Wood Preserving Plant	3	3
WST	Storage Tanks for PWS	0	0