

Department. **Monitoring well constructors who have made arrangements for payment of civil penalties and have failed to meet the terms of the agreement, except in certain cases of bankruptcy, may not have their license renewed or a new license issued until all outstanding civil penalties owed to the Department have been paid.**

Stat. Auth.: ORS Ch. 537 & 742

Stats. Implemented: ORS Ch. 537 & 742

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0075

Contracting for Services

Only Oregon licensed and bonded monitoring well constructors may advertise services or enter into a contract, either written or oral, to construct, alter, **convert**, or abandon a monitoring well. Any written bid for a project which includes the construction, alteration, **conversion**, or abandonment of a monitoring well must provide:

(1) A bid or estimate for the work associated with monitoring well construction signed by a monitoring well constructor, who is licensed and bonded in the State of Oregon.

(2) A statement by the **licensed and bonded monitoring well constructor** [~~contractor~~] that the work will be completed in accordance with Oregon Ground Water Law (ORS Chapter 537) and the Rules for the Construction, [and] Maintenance, **Alteration, Conversion, and Abandonment** of Monitoring Wells, **Geotechnical Holes**, and Other Holes in Oregon (OAR Chapter 690, Division 240).

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0080

Monitoring Well Constructor and Landowner Well Bonds or Letters of Credit

(1) The Water Resources Department shall accept bonds only from corporations licensed by the Oregon Department of Insurance and Finance to issue fidelity and surety insurance. The Water Resources Department shall accept irrevocable letters of credit only from a [~~commercial~~] bank as described in ORS 706.00[~~5~~]**8**.

(2) If the issuing corporation cancels a bond, the corporation shall provide notice of cancellation to the Water Resources Department by registered or certified mail. If the issuing [~~commercial~~] bank cancels a letter of credit, the [~~commercial~~] bank shall provide notice of cancellation to the Water Resources Department by registered or certified mail. The cancellation shall not take effect earlier than the 30th day after the date of mailing in accordance with ORS 742.366**(2)**.

(3) When issuing a final enforcement order that may place a bond or **irrevocable** letter [~~or~~] **of** credit in jeopardy, the Director **may** [~~shall~~] mail a copy of the order to the address of record of the surety company issuing the bond, or the [~~commercial~~] bank issuing the **irrevocable** letter of credit.

(4) All monitoring wells shall be constructed under a bond or irrevocable letter of credit.

The bond or letter of credit shall cover construction, alteration, **conversion**, or abandonment for each well under that bond or letter of credit for a period of three years after the date the well report is filed with the commission, whether or not the bond or letter of credit has been subsequently canceled.

(5) Water supply wells and monitoring wells are covered under separate bonds.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0082

Landowner Well Construction Permit, Fee and Bond

(1) The Water Resources Commission requires a permit, permit fee, and bond or irrevocable letter of credit, for each monitoring well constructed, altered, converted, or abandoned by a landowner, unless the landowner is a licensed and bonded monitoring well constructor.

(2) To receive a Landowner Well permit, a person must submit the following to the Director:

(a) A completed application form provided by the Commission, containing, as a minimum:

(A) The property owner's name, address and telephone number;

(B) The surety company's name, address and telephone number;

(C) The proposed location of the well by township, range, section, tax-lot number if assigned, and street address;

(D) The proposed use of the monitor well; and

(E) The type of proposed work.

(b) A properly executed landowner's monitoring well bond or irrevocable letter of credit for \$2000 to the State of Oregon; and

(c) A \$25 permit fee.

(3) Only the owner of record, a member of the immediate family of the owner of record, or a full time employee of the owner of record, (whose main duties are other than the construction of wells), may operate a well drilling machine under a landowner's permit.

Stat. Auth: ORS 183, 536, 537 & 540

Hist.: WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0085

Monitoring Well Drilling Machines

(1) All monitoring well drilling machines being operated, other than under a landowner's permit, shall be plainly marked either with the bonded monitoring well constructor's license number, the name of the bonded monitoring well constructor, or the name of the well drilling business. [or shall have] The markings shall be permanently affixed on each side of

the vehicle, ~~[either the name of the bonded constructor or the name of the monitoring well drilling business.]~~ Good quality paint or commercial decal numbers shall be used in placing ~~[each]~~ **the** identification ~~[number]~~ **information** on the drilling machine. In no case shall the constructor's license number, **name, or business name**, be inscribed with crayon, chalk, marking keel, pencil, or other temporary markings.

(2) In all cases, the license number, **name, or business name**, of the bonded monitoring well constructor shall be removed from the drilling machine immediately upon change of ownership or change of control of the drilling machine.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0090

Monitoring Well Construction Notice Required (Start Card)

(1) Each bonded monitoring well constructor licensed to operate in the State of Oregon **and each landowner holding a landowner's permit** shall provide notice as required in ORS 537.762 before commencing the construction, alteration, ~~[conversion]~~ or abandonment of any monitoring well **or conversion of any other hole, geotechnical hole, or water supply well to a monitoring well**. The **start [notice]** card shall contain **the following information:**

(a) ~~[the]~~ Name and mailing address of the **landowner;** ~~[customer for which work is to be performed, the]~~

(b) Street address **of the well;**

(c) ~~[and]~~ The approximate location of the monitoring well; and ~~[in the case of new construction, conversion or alteration,]~~

(d) The proposed depth, diameter, and ~~[the]~~ purpose or use **if the well is new, altered, or converted.**

(2) All **start cards for [notices of] new [or converted] monitoring wells or conversion of other holes, geotechnical holes, or water supply wells** ~~[constructed]~~ by a licensed and bonded monitoring well constructor shall be submitted with a \$75 **start card [notice]** fee. **A start card fee is not required to abandon a monitoring well. Landowners are exempt from this \$75 start card fee. However, OAR 690-240-0082 shall apply to landowners who construct, alter, convert, or abandon a monitoring well.**

(3) Forms for making these reports and submitting fees shall be furnished by the Water Resources Department.

(4) Each start card ~~[notice of a newly constructed or converted monitoring well requiring a fee]~~ shall be mailed or delivered **during regular business hours** to the Water Resources Department in Salem no later than the day construction, ~~[or]~~ **conversion, alteration, or abandonment** is commenced.

(5) In addition to the **start card [notice]** required under section (4) of this rule, the constructor shall provide ~~[the "Watermaster"]~~ **a legible** copy of the start card to the **Oregon Water Resources Department (OWRD) region** office ~~[of the district watermaster]~~ within which the ~~[water supply]~~ monitoring well is being constructed, altered, converted or abandoned no later than the day work begins, using one of the following options:

(a) By regular mail no later than three **(3)** calendar days (72 hours) prior to commencement of work; or

(b) By hand delivery, during regular office hours, no later than the day work is commenced; or

(c) By facsimile transmission (FAX) no later than the day work is commenced. If this method is used, [~~the original "Watermaster"~~] **a legible** copy of the start card shall also be mailed or delivered to the **appropriate OWRD region** office [~~of the district watermaster~~] no later than the day work is commenced.

NOTE: [~~District Watermaster~~] **Region** office fax and telephone numbers are listed in Table **240-2** [VI]. [~~Watermaster district~~] **Water Resources Department Regional** boundaries are shown in [~~Figure 22.~~] **Figure 240-2.**

(d) The Director or [~~watermaster~~] **region office** may provide an alternate means of notification. If an alternative means of notification is used, the start [~~notice~~] card shall be mailed or delivered to the [~~watermaster~~] **region office** within one week of beginning work on the monitoring well. A monitoring well constructor whose license has been restricted by order shall provide notice as stipulated in the order.

(6) Once received by the Department, the **start** [~~notice~~] card shall be confidential for a period of one year after it is received or until the monitoring well report required by OAR 690-240-0095 is received, whichever is shorter.

(7) The **start** [~~notice~~] card may be used in an administrative enforcement action at any time, including the period of confidentiality. Once the **start** card is used for enforcement reasons, it is no longer confidential.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95 WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0095

Monitoring Well Report Required (Monitoring Well Log)

(1) A monitoring well report [~~(monitoring well log)~~] shall be prepared for each monitoring well constructed, altered, converted, or abandoned including unsuccessful monitoring wells. The log shall be certified as correct by signature of the monitoring well constructor constructing the monitoring well. The completed log shall also be certified by the bonded monitoring well constructor responsible for construction of the monitoring well. A monitoring well report must be submitted by each [~~constructor (if more than one) of each~~] bonded constructor (if drilling responsibility is shifted to a different bonded constructor), showing the work performed by each [~~constructor or~~] bonded constructor.

(2) The log shall be prepared in [~~quadruplicate~~] **triplicate** on forms furnished or previously approved in writing by the Water Resources Department. The original [~~and first copy~~] shall be furnished to the Director, the [~~second~~] **first** copy shall be retained by the monitoring well constructor, and the [~~third~~] **second** copy shall be given to the customer who contracted for the construction of the monitoring well.

(3) The bonded monitoring well constructor shall file the monitoring well log with the Director within 30 day after the completion of the construction, **alteration**, [~~abandonment~~];

conversion, or **abandonment** [~~alteration~~] of the monitoring well.

(4) The trainee or monitoring well constructor operating the monitoring well drilling machine shall maintain a rough log of all geologic strata encountered and all materials used in the construction of the monitoring well. This log shall be available for inspection by the Watermaster or **other** [~~an~~] authorized agent of the Water Resources Department or other delegated agency representative at any time before the monitoring well report is received by the Department. The rough drilling log shall be in handwritten or electronic form, or a voice recording.

(5) In the event a constructor leaves any **drilling equipment or other tools** in a monitoring well [~~the constructor~~] **this fact** shall **be entered** [~~this fact~~] on the monitoring well report.

(6) A copy of any special authorizations or special standards issued by the Director shall be attached to the monitoring well report.

(7) The report of monitoring well construction required in section (1) of this rule shall be recorded on a form provided or previously approved in writing by the Department. The form shall include, as a minimum, the following:

(a) **Name and Address of Landowner** [Project name (as appropriate)];

(b) Started/Completed date;

(c) Location of **the** well by county, township, range, section, **tax lot number if assigned, street address,** and **either the** 1/4, 1/4 section, [~~and either tax lot number, or street address~~] **or Latitude and Longitude as established by a global positioning system (GPS).** [~~If a global positioning system (GPS) is used, the information must be converted to township, range, and section [and 1/4, 1/4 section] and the latitude and longitude measurements must be included;~~]

(d) Start card number [~~(Well identification number)~~];

(e) Well identification label number (well tag number);

~~(e)f~~ Use of well;

~~(f)g~~ Type of work;

~~(g)h~~ Type and amount of sealant used and measured weight of the grout slurry as required in OAR 690-240-0130(1)(g);

(i) temperature of water;

~~(h)j~~ Map showing location of monitoring well on site, must be attached and shall include an approximate scale and a north arrow;

~~(f)k~~ Such additional information as required by the Department.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94 WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0100

Monitoring Well Construction: General

(1) Monitoring well components, including well screens, casings and annular sealant should be selected based on known site characteristics to ensure the well will last for the duration of the monitoring program.

(2) No monitoring well shall be used for domestic, **public water supply**, industrial,

commercial, or agricultural purposes unless it meets the minimum construction standards for water supply wells, OAR 690-200 to 690-230.

(3) No completed monitoring well shall interconnect aquifers, including low yielding aquifers.

(4) The start card number [~~shall be used as the well identification number and~~] shall be permanently attached, stamped or engraved on the outer well casing or permanent protective well cover, not on a removable cap.

(5) No monitoring well shall be constructed as a multiple completion well without prior special standard approval as specified in OAR 690-240-~~0006~~ [0140].

(6) [~~Remediation and~~] Horizontal wells shall **only** be constructed with **prior** special standard approval only as specified in OAR 690-240-~~0006~~ [0140].

(7) The borehole diameter shall be at least four inches larger than the nominal casing diameter except as noted in OAR 690-240-0137 concerning piezometers. If the monitoring well is constructed using a hollow stem auger drilling machine, the inside diameter of the auger must be at least four inches larger than the nominal diameter of the casing to be installed, except as noted in OAR 690-240-0137 concerning piezometers.

~~[(8) Piezometers constructed in areas of known or reasonably suspected contamination or constructed for the purpose of investigating water quality conditions, shall be constructed to meet current monitoring well rules. See OAR 690-240-1327 for special construction standards.]~~

~~[(9)8] Materials which foster or promote undesirable organic growth or have the potential to degrade water quality shall not be employed in the construction of the monitoring well.~~

~~[(10)9] After completion, the landowner is responsible for maintaining the well in an approved condition. If the well is damaged, the well protection system and casing shall be restored as prescribed by these rules. If the well is damaged beyond repair, the well shall be properly abandoned in accordance with OAR 690-240-0135.~~

(10) A well identification label shall be attached to every new well and to every altered or repaired well that does not already have a label. The label must be easily visible on the outside of the casing on an above grade completion and inside the vault of a flush grade monument. (See Appendix 1) In cases where a geotechnical hole or other hole is converted into a monitor well, a well identification label must be attached to the completed well in the same fashion as required for a new or altered well.

(11) Any deviation from these rules requires special standard approval as specified under OAR 690-240-~~0006~~[0140].

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0110

Well Protection

(1) Every monitoring well shall be capped and protected using one of the following methods:

(a) If the well is cased with metal and completed above the ground surface, a lockable cap

with lock shall be attached to the top of the casing;

(b) If the well is [~~not cased with metal and~~] completed above the ground surface, **and is not cased with metal**, a metal protective casing shall be installed around the well. The protective casing shall extend at least six inches above the top of the well casing and at least two feet into the ground. **A cap shall be attached to the top of the well casing and a lockable lid with lock shall be attached to the top of the protective casing ; and**

(c) If the well is completed below ground surface, a lockable, **watertight** cap with **lock shall** be attached to the top of the casing. A **vault or monument** [~~protective cover~~], **designed to be watertight, level with the ground surface, shall be installed to prevent the inflow of surface water.** [~~level with the ground surface, shall be installed with a waterproof seal to prevent the inflow of surface water.~~] The cover must be designed to withstand the maximum expected loadings.

(2) All wells completed above ground shall have a minimum casing height of one foot above finished grade and shall be protected from damage by three metal posts at least three inches in diameter, set in and filled with concrete, [;] **The protective posts** shall be installed in a triangular array around the casing and at least two feet from it. Each post shall extend at least three feet above and **three feet** below the ground surface.

(3) If the well is to be protected by other surface protection methods, the bonded constructor shall obtain special standards from the Department as [~~described~~] **specified** in OAR 690-240-~~0006~~ [0140].

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0115

Casing

(1) The constructor shall consider the following factors when selecting monitoring well casing:

(a) The casing installed shall not be readily reactive with the subsurface environment according to best available knowledge;

(b) The casing installed shall not adversely affect or interfere with the chemical, physical, radiological, or biological constituents of interest according to best available knowledge;

(c) The collapse strength of all casing used in monitoring well construction must be great enough to withstand the pressure exerted by the annular seal during seal placement, including heat of hydration.

(2) All monitoring well casing shall conform to at least 304 or 316 stainless steel, polytetrafluoroethylene PTFE, Schedule 40 PVC casing, or other casing materials rated and approved by ASTM for monitoring well construction.

(3) All casing installed shall be in new or like new condition, being free of pits or breaks, and shall be cleaned of foreign materials and contaminants prior to installation, **unless removed from the manufacturer's packaging on site.**

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0118

Additional Standards for Artesian Monitoring Wells

(1) Monitoring wells penetrating into an artesian aquifer shall have an upper **oversize** drillhole at least four inches greater in diameter than the nominal diameter of the permanent well casing except as noted in OAR 690-240-0137 concerning piezometers. Watertight unperforated casing shall extend and be sealed, according to OAR 690-240-0130, at least five feet into the confining formation immediately overlying the artesian water-bearing zone.

(2) If an artesian monitoring well flows at land surface, the well shall be equipped with a control valve and a watertight mechanical cap, threaded or welded, so that all flow of water from the well can be completely stopped.

(3) All flowing artesian monitoring wells shall be equipped with a pressure gauge placed on a dead-end line. A petcock valve shall be placed between the gauge and well casing.

(4) All flowing artesian monitoring wells shall be tested for artesian shut-in pressure in pounds per square inch and rate of flow in cubic feet per second, or gallons per minute, under free discharge conditions. This data shall be reported on the well report.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0120

Cleaning

(1) All drill cuttings and fluids from drilling, cleaning and development shall be properly managed during construction, alteration or abandonment to protect ground water from contamination.

(2) The landowner or the landowner's agent is responsible for management of drill cuttings and fluids left on site after well construction, alteration or abandonment is completed.

(3) To prevent cross-contamination between wells, the drill rig and all drilling equipment shall be cleaned before and after well construction by one of the following methods:

- (a) Detergent washing and rinsing with potable water;
- (b) High pressure hot water cleaning;
- (c) Steam cleaning; or
- (d) Other [~~appropriate~~] methods as approved by the Water Resources Department.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0126

Monitoring Well Screen, [and] Filter Pack, and Filter Pack Seal

(1) The screen and filter pack, when properly designed and installed, allows a water quality sample to be collected that is representative of water in the formation.

(2) The well screen shall:

(a) Be commercially fabricated and constructed of material that is not knowingly readily reactive with the subsurface environment;

(b) Have a collapse strength great enough to withstand the pressures exerted during construction and development of the monitoring well;

(c) Be in new or like new condition, being free of pits or breaks;

(d) Be cleaned using methods outlined in OAR 690-240-0120(3) **unless removed from the manufacturer's packaging on site**; and

(e) Be centered in the borehole.

(3) The use of lead packers with the screen sections is prohibited.

(4) A bottom cap or end plug shall be attached to **[each] the bottom of the well casing or well screen**.

(5) The filter pack shall:

(a) Consist of clean, chemically inert, well rounded material;

(b) Not extend more than three feet above the top or one foot below the bottom of the well screen; and

(c) Be placed in such a manner as to ensure placement opposite the well screen without bridging or size segregation.

(6) The filter pack seal shall consist of:

(a) A two foot thick layer of fine grained sand above the filter pack if a grout or grout slurry is used; and/or

(b) A minimum of a three foot thick layer of dry bentonite. If a grout slurry is to be used as the annular seal, the bentonite shall be adequately hydrated prior to placement of the annular seal to prevent grout infiltration into the filter pack.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0130

Well Seals

(1) Proper seal placement is essential to minimize the potential for movement of water and contaminants from the surface, or other waterbearing zones, into the monitoring well.

Appropriate sealing materials may vary depending on the site characteristics and the substances being monitored. Well seals shall consist of a physically and chemically stable hydrated grout slurry composed of: **[either]**

(a) Neat cement[;]; **or**

(b) Sodium bentonite[;]; or

(c) A cement-bentonite **grout** mixture containing no more than five percent bentonite by dry weight; or

(d) [~~of~~] Sodium bentonite granules, pellets or chips placed in an unhydrated state, and subsequently hydrated downhole.

([~~1~~2]) Grout slurries shall be mixed in the proper proportions and placed in the bore hole in such a manner as to prevent excessive shrinkage, water loss, chemical breakdown, bridging or invasion into the filter pack. The following procedures shall be utilized if a grout slurry is to be the sealing material:

(a) Neat cement used for grouting shall be American Petroleum Institute Class A or B, or ASTM C-150 Type I or II neat cement with no additives, mixed in the proportion of 5.2 gallons of water per standard 94 pound sack and having a mud weight of approximately 15.6 pounds per gallon;

(b) Bentonite used as a slurry for grouting shall be a high solids granular sodium bentonite mixed according to the manufacturer's directions, having a minimum mud weight of at least 9.5 pounds per gallon, and containing at least 20 percent solids. Mixing methods should be used which prevent the slurry from being excessively lumpy;

(c) When a mixture of cement and bentonite is used as a slurry for grouting, the cement shall be American Petroleum Institute Class A or B, or ASTM C-150 Type I or II neat cement. The slurry shall be no more than five percent, by dry weight of cement, sodium bentonite gel powder (3.75 pounds of bentonite per sack of cement). For each pound of bentonite added, up to an additional 0.7 gallons of water shall be added to the original neat cement mix. The water and bentonite shall be mixed first, and **then** the cement added to the bentonite slurry. The cement-bentonite mixture shall have a mud weight of approximately 14.1 pounds per gallon;

(d) Prior to placing grout in the annular space, the grout slurry weight shall be measured by ASTM Test Method D-4380-84. Grout slurry shall not be placed in the annular space until the grout slurry weight is within ten percent of the weight specified in subsection ([~~1~~2])(a), (b) or (c) of this rule;

(e) Grout slurries shall be placed from the bottom of the annular space upward in such a manner as to completely fill the sealing interval. Grout slurries shall begin at the top of the filter pack seal overlying the filter pack and extend to the bottom of the surface seal. If the grout slurry is intended to serve as the surface seal, it shall extend to land surface;

(f) Grout slurries shall be placed through a side discharge [~~tremie~~] **grout** pipe by gravity flow or by pumping to ensure positive placement without bridging or wash-out of previously placed annular materials. The discharge end of the [~~tremie~~] **grout** pipe shall remain submerged in the grout throughout the sealing operation;

(g) Prior to discontinuing placement of grout in the annular space, grout slurry returns from the annular space shall be measured by ASTM Test Method D-4380-84. Placement of grout slurry in the annular space shall continue until the returns are within ten percent of the weight specified in subsection ([~~1~~2])(a), (b) or (c) of this rule.

([~~2~~3]) Bentonite used in an unhydrated form shall be sodium bentonite granules, pellets or chips. **Unhydrated bentonite shall be specifically designed for sealing wells and be within industry tolerances for dry western sodium bentonite. Bentonite shall be free of polymers that promote bacterial growth.** The following procedures shall be [~~followed~~] **adhered to** if dry bentonite [~~will be~~] **is** used for sealing:

(a) Dry, poured bentonite seals shall only be used if the depth to the bottom of the seal is less than fifty feet and the standing water column in the bore hole or annular space is less than

twenty-five feet deep at the time of seal placement. Only sodium bentonite chips **manufactured to be greater than 1/4 inch** or **tablets** ~~[pellets]~~ shall be used below the water level in the sealing interval;

(b) Pour rate shall be three minutes or slower per 50 pound sack in the water-filled portion of the annulus;

(c) A sounding or tamping tool shall be **used** ~~[run]~~ in the bore hole or annular space during pouring to measure fill~~[up]~~ rate and to break up possible bridges or cake formation;

(d) Care shall be taken to minimize the introduction of bentonite dust into the sealing interval;

~~[(d)]e~~ In a dry sealing interval, bentonite shall be ~~[installed in individual lifts with a maximum thickness of two feet. Hydrate the dry bentonite in each lift]~~ **hydrated** with potable water **in two foot lifts** to ensure activation.

~~[(3)]4~~ The estimated and actual volume of sealing material used shall be calculated and reported to the Department.

Stat. 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0131

Monitoring Well Development

(1) The monitoring well development shall not affect the integrity of the casing or seal. Monitoring well development shall not occur prior to 24 hours after annular seal placement if cement grout or a bentonite grout slurry is used, or 12 hours after annular seal placement if dry bentonite is used. **The well may be developed prior to placement of the annular sealing material.**

(2) The monitoring well development should:

(a) Remove any water or drilling fluid introduced into the well during drilling;

(b) Stabilize the filter pack and formation materials opposite the well screen;

(c) Minimize the amount of fine-grained sediment entering the well; and

(d) Maximize well efficiency.

(3) As long as the well is not altered, the monitoring well development may be performed by other than a licensed and bonded monitoring well ~~[contractor]~~ **constructor**.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0132

Completion of Monitoring Wells

(1) A monitoring well constructor **or permitted landowner constructing their own well** shall not remove the drilling machine from a monitoring well site, unless it is immediately replaced by another monitoring well drilling machine in operating condition, prior to completion

or abandonment of the **monitoring** well in compliance with ~~[administrative rules]~~ OAR 690-240-0005 through 690-240-0140. ~~[and installation of a watertight seal, or threaded or welded cap on the well.]~~

(2) Installation of the protective metal posts does not require a monitoring well constructor's license, providing the surface seal is not disturbed.

(3) Installation of the protective posts described in OAR 690-240-0110 shall be completed within one week of placement of the seal.

(4) If installation of the protective measures as described in OAR 690-240-0110 are not completed within 24 hours of seal placement, the monitoring well shall be marked using one of the following methods:

- (a) Placement of three stakes around the well connected with fluorescent survey tape;
- (b) Placement of construction barricades around the well; or
- (c) Use of other protective measures as approved by the Water Resources Department.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0135

Abandonment of Monitoring Wells

Proper abandonment of monitoring wells will prevent both vertical movement of water within the well bore and infiltration of surface water into the well:

(1) In areas where ground water contamination has been identified, **except as described in number (4) below**, abandonment shall require the borehole to be completely redrilled to a minimum of the original diameter. All casing, screen, annular sealing material, drill cuttings, debris, and filter pack material shall be removed prior to sealing.

(2) In areas where ground water contamination has not been identified, if it can be verified that the monitoring well was constructed in accordance with these rules, it shall be abandoned by filling the well from the bottom up with an approved sealant as described in OAR 690-240-0130. The casing shall then be removed below grade, as compatible with local **site conditions and land practices**. ~~[land use.]~~ . The following are acceptable methods of original well construction verification:

- (a) A well report in accordance with OAR 690-240-0095;
- (b) Well construction information submitted to the Oregon Department of Environmental Quality;
- (c) Information obtained through down-hole geophysical logging; or
- (d) Other information as approved by the Water Resources Department.

(3) In areas where ground water contamination is not present, **and** if the monitoring well construction cannot be verified by means listed in section (2) of this rule, the well shall be abandoned according to section (1) of this rule.

(4) In contaminated areas where remediation has occurred, an approved special standard is required to abandon a well unless it is abandoned according to section (1) of

this rule. Abandonment procedures will be considered on a case by case basis. The Department will consult with the state or federal agency that supervised the remediation in determining the appropriate abandonment method. In cases where there was no agency oversight, the Department will consider any information supplied by the licensed and bonded monitor well driller in determining the appropriate abandonment procedure.

~~[(4)]~~**(5)** Grout slurries shall be placed from the bottom up by a ~~[tremie tube]~~ **grout pipe** to avoid segregation or dilution of the sealant. The discharge end of the ~~[tremie tube]~~ **grout pipe** shall be submerged in the grout to avoid breaking the seal while filling the annular space. Grout slurries used to abandon monitoring wells shall conform to the requirements of OAR 690-240-0130.

~~[(5)]~~**(6)** The abandonment procedure shall be recorded on a form provided by or previously approved in writing by the Department. The form shall include, as a minimum, **all the requirements as listed in OAR 690-240-0095**, plus ~~[the following]~~:

- ~~[(a) Owner/Project name (as appropriate);~~
- ~~— (b) Started/Completed date;~~
- ~~— (c) Location of well by county, township, range, section and 1/4, 1/4 section and either tax lot or street address. If a global positioning system is used, the information must be converted to township, range, section and 1/4, 1/4 section and the latitude and longitude measurements included;~~
- ~~— (d) Start card number (Well identification number);~~
- ~~— (e) Type of work;]~~
- ~~[(f) a] Method of abandonment;~~
- ~~[(g) Type and amount of sealant used and measured weight of the grout slurry as required in OAR 690-240-0130(1)(g);~~
- ~~— (h) A map showing location of the monitoring well on site must be attached and shall include an approximate scale and north arrow;~~
- ~~— (i) Such additional information as required by the department.]~~

(b) If assigned, the well identification number, original start card number, and owner's well number of the abandoned well.

~~[(6) The well abandonment shall be recorded and reported to the Department within thirty days of abandonment.]~~

(7) When abandoning artesian monitoring wells, in addition to sections (1) - (6) of this rule, the flow shall be confined or restricted by cement grout applied under pressure, or by the use of a suitable well packer, or a **wooden** plug placed at the bottom of the confining formation immediately above the artesian water bearing zone. An approved sealant shall be used to fill the well to land surface as specified in OAR 690-240-0130.

(8) Monitoring wells that were constructed under special standards will require the abandonment method to be approved by the Department.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0137

Piezometers

~~[(1) If a piezometer is constructed]~~ **It is prohibited to construct a piezometer** in an area of known or reasonably suspected contamination. ~~[or if the purpose of the investigation is to assess water quality conditions, it shall be constructed to meet current monitoring well rules.]~~

NOTE: The Water Resources Department and the Department of Environmental Quality have information sources to use in determining if contaminants are present. Customary drilling practice as conducted by licensed professional must be included as part of the appropriate inquiry to determine if contaminants are present or reasonably suspected.

~~[(2)]~~ Piezometers shall be constructed to meet current monitoring well rules except for the following:

(a) Borehole size with depth requirements:

(A) For piezometers with a sealing depth less than 50 feet deep, the borehole diameter shall be at least two and one half inches (2.5") larger than the nominal casing diameter. If the piezometer is constructed using a hollow stem auger drilling machine, the inside diameter of the auger must be at least 2.5 inches larger than the nominal diameter of the casing to be installed;

(B) For piezometers with a sealing depth greater than 50 feet deep, the borehole diameter shall be at least three inches larger than the nominal casing diameter. If the piezometer is constructed using a hollow stem auger drilling machine, the inside diameter of the auger must be at least 3 inches larger than the nominal diameter of the casing to be installed.

(b) Surface Completion:

(A) If the piezometer is completed above ground, it shall have a minimum casing height of one foot above finished grade and a lockable cap **with lock** shall be attached to the top of the casing. If vulnerable to damage, the piezometer shall be protected as described in OAR 690-240-0110;

(B) If the piezometer is completed below ground surface, a **lockable, watertight cap, with lock**, shall be attached to the top of the casing. **A vault or monument [protective cover] designed to be watertight, level with the ground surface, shall be installed to prevent the inflow of surface water.** ~~[level with the ground surface, shall be installed with a waterproof seal to prevent the inflow of surface water.]~~ The cover must be designed to withstand the maximum expected loadings.

(c) If an artesian piezometer flows at land surface, it shall be equipped with a control valve or a watertight mechanical cap, so that all flow of water from the well can be completely stopped. Flowing artesian piezometers are not required to be equipped with a pressure gauge placed on a dead-end line or a petcock valve;

(d) The special cleaning and drill cutting storage requirements in OAR 690-240-0120 shall not apply to piezometers because they ~~[are]~~ **may not be** constructed in areas of known or reasonably suspected contamination. However, all equipment and materials used in the construction of a piezometer shall be free of foreign materials and contaminants prior to entry into the well;

(e) Use of commercially fabricated screens are not required for piezometers. The screens installed shall be in new or like new condition, being free of pits or breaks, and shall be free of foreign materials and contaminants prior to installation;

(f) The filter pack [~~and filter pack seal~~] requirements of OAR 690-240-0126(5) [~~and (6)~~] shall not apply to piezometers because they are not constructed in areas of known or reasonably suspected contamination; ~~f.~~]

(g) A minimum three foot annular seal is required. If a grout slurry is used, the filter pack seal requirements of 690-240-0126 (6) apply. If a piezometer is completed with a flush monument, the annular seal shall extend a minimum of three feet below the monument seal.

Stat. 537.780

Stats. Implemented: ORS

Hist.: WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0139

Direct Push Monitoring Wells and Piezometers

(1) Monitoring wells and piezometers that are installed using direct push technology shall comply with the applicable standards in these rules for reporting, casing, screening, filter pack, filter pack placement, filter pack seal, development, surface seal, cleaning, protection, marking, and completion.

(2) Monitoring wells and piezometers that are installed using direct push technology shall also comply with the following standards:

(a) Only prepacked screens shall be used; 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; and,

(d) Wells and piezometers shall not be constructed through more than one water bearing formation and shall not be greater than 50 feet in depth unless a special standard is obtained.

Stat. 536.090 & 537.505 - 537.795

Hist.: WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0140

[Special Standards

~~— (1) Specific site conditions may require design, construction, and abandonment procedures to adapt to the existing local geologic and ground water conditions to fully utilize every natural protection to the state's ground water. Specific site conditions may require different design, construction, or abandonment standards than required by the Monitoring Well or Geotechnical Hole construction rules. Alternate technologies not addressed in these rules may also exist which could be utilized in the construction or abandonment of a monitoring well or geotechnical hole. The constructor must request in writing, and receive, written approval from the Director to use methods or materials that do not meet monitoring well or geotechnical hole construction standards prior to completion or abandonment of the well or hole. The proposed methods or materials shall prevent or eliminate contamination or waste or ground water or loss of artesian~~

pressure:

- ~~— (2) The written request shall include:~~
- ~~— (a) The purpose of well or hole [construction or abandonment];~~
- ~~— (b) Location of well or hole by township, range and section;~~
- ~~— (c) Name and address of the project site;~~
- ~~— (d) The distance to the nearest well or hole and septic drain field;~~
- ~~— (e) The reasons that conformance to the rules and regulations for monitoring wells or geotechnical holes cannot be met;~~
- ~~— (f) A diagram showing the proposed monitoring well or geotechnical holes design, construction, or abandonment; and~~
- ~~— (g) The startcard well identification number of monitoring wells.~~

~~— Stat. 536.090 & 537.505 - 537.795~~

~~— Stats. Implemented: ORS 536.090 & 537.505 - 537.795~~

~~— Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95]~~

690-240-0145

Evidence of Failure

Evidence of failure to comply with the requirements of OAR 690-240, special standards as described in OAR 690-240-~~0006~~ [0140], or those standards of a state agency to which the Director has delegated direct responsibility under OAR 690-240-0016 [5] shall include, but not be limited to, the following:

- (1) A specific standard to which the Director has agreed is violated.
- (2) Evidence that contamination is occurring as a result of a monitoring well, **geotechnical hole**, or other hole construction.
- (3) Evidence that **a monitoring well, geotechnical hole, or other hole, due to its construction, is causing or contributing to the loss of artesian pressure within an aquifer.** [wasteful use of ground water is occurring.]

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0150

Investigation of Alleged Violations

(1) The Water Resources Director, upon the Director's own initiative, or upon complaint alleging violation of statutes, standards or rules governing licensing **of monitoring well constructors and/or**, construction, alteration, **conversion, maintenance,** or abandonment of monitoring wells, geotechnical holes or other holes may cause an investigation to determine whether a violation has occurred. If the investigation indicates that a violation has occurred, the Director shall notify the persons believed responsible for the violation including but not limited

to:

- (a) [(+)] Any monitoring well constructor involved; [-]
 - (b) [(2)] The landowner, if the violation involves construction, alteration, **conversion, maintenance**, operation or abandonment of a well, **geotechnical hole, or other hole**; [-]
 - (c) [(3)] The agency that has been delegated authority over a particular class of wells, **geotechnical holes, or other holes** and/or
 - (d) [(4)] Any registered geologist or civil engineer in construction, alteration, or abandonment of a geotechnical hole.
- (2) Enforcement and civil penalty assessment for “other than well constructors” is described in OAR 690-260.**

Stat. 536.090 & 537.505 - 537.7952

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95, cert. ef. 7-1-95; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0155

Enforcement Actions

(1) If, after notice and opportunity for hearing under ORS 183.310 to 183.550 the Director determines that one or more violations have occurred, the Director may impose one or more of the following:

- (a) Provide a specified time for remedy;
- (b) Assess a civil penalty in accordance with the schedule of civil penalties in OAR 690-240-0180;
- (c) Suspend, revoke, or refuse to renew the license(s) [s] when one or more persons responsible for the violation hold a monitoring well constructor's license;
- (d) Require that a person whose license has been refused renewal pass the monitoring well constructor [test] **examination** before a new license is issued **or the current license is renewed**;
- (e) Impose any reasonable conditions on the monitoring well constructor's license to [insure] **ensure** correction of the violation and future compliance with the law. These conditions may include but are not limited to:
 - (A) Fulfilling any outstanding obligations which are the result of administrative action before the constructor can offer any services or construct, alter, convert, or abandon any monitoring well;
 - (B) Requiring additional advance notice to be given to the [watermaster] **Department** of construction, alteration or abandonment of any monitoring well;
 - (C) Requiring a seal placement notice be given to the [watermaster] **Department** [24] **up to 72** hours in advance of placing the seal; or
 - (D) Any other conditions the Director [~~feels are~~] **deems** appropriate.
 - (f) Order the landowner to repair or meet other conditions on use of the well, **or** order discontinuance of the use [or] **and** order proper abandonment pursuant to ORS 537.775;
 - (g) Make demand on the monitoring well constructor's bond **or the landowner's bond**. This may occur only if the Director has given the notice required in OAR 690-240-0150 to the persons

responsible for the violation within three years after the date the monitoring well report is filed with the Department. If no monitoring well report has been filed, the three year limitation shall not apply until such time as a well report is filed; or

(h) Take any other action authorized by law.

(2) An order may specify a schedule of escalating or cumulative sanctions to be assessed on specified dates until the violation has been satisfactorily corrected.

(3) Any monitoring well constructor whose license is suspended or revoked shall **be considered not licensed during the period of suspension or revocation. The appropriate provisions of OAR 690-240 shall apply.** [~~not contract for monitoring well construction services or operate monitoring well drilling machines in the State of Oregon during the suspension or revocation period~~].

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0160

Multiple Violations and Consolidation of Proceedings

In cases of multiple or continuing violations, each occurrence of substantially the same activity and each [~~day's~~] **days** continuance of a violation after the responsible party has been notified is a separate and distinct violation. Administrative enforcement proceedings for multiple violations may be consolidated into a single proceeding.

Stat. Auth.: ORS Ch. 537 & 742

Stats. Implemented: ORS Ch. 537 & 742

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0165

Factors Affecting Selection of Type and Degree of Enforcement

In selecting the appropriate type and degree of enforcement, the Director may consider the following factors:

(1) Whether the constructor's file demonstrates a pattern of prior similar violations; [-]

(2) Whether the respondent has cooperated in attempting correction of any violation in a timely fashion; [-]

(3) The gravity and magnitude of the violation, including whether there is an immediate or long-term threat to human health or the ground water resource; [-]

(4) Whether the damage to the ground water resource is reversible; [-]

(5) Whether the violation in the instances cited was repeated or continuous; [-]

(6) Whether a cause of the violation was an unavoidable accident; [-]

(7) The opportunity and degree of difficulty to correct the violation; [-]

(8) The cost to the Department, except for travel costs **and** [~~after~~] the initial field investigation, **in** attempting to gain voluntary compliance of the cited violation. The costs may be

considered until the Department receives respondent's answer to the written notice and opportunity for hearing; **and** [-]

(9) Any other relevant factor.

Stat. Auth.: ORS Ch. 537 & 742

Stats. Implemented: ORS Ch. 537 & 742

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0170

Change in Enforcement Status

(1) In the interest of achieving compliance, the Director at any time may reevaluate the status of the violation(s)[s] and take appropriate action, including reduction of the enforcement level or remission of all or part of any civil penalties assessed.

(2) The Director may terminate proceedings against a monitoring well constructor if the constructor provides acceptable evidence that:

(a) The landowner does not permit the constructor to be present at any inspection made by the Director; or

(b) That the constructor is capable of complying with recommendations made by the Director, but the landowner does not permit the constructor to comply. In such cases, the landowner is responsible for bringing the well into compliance pursuant to ORS 537.535, and if the landowner was not a party to the original enforcement proceeding the Director may initiate a proceeding to ensure that the landowner does so.

Stat. Auth.: ORS Ch. 537 & 742

Stats. Implemented: ORS Ch. 537 & 742

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 9-2001, f. & cert. ef. 11-15-01

690-240-0175

Assessment of Civil Penalties

Under OAR 690-240-0155(1) the Director may at any time select the most appropriate enforcement tool, including assessment of civil penalties, to gain compliance. However, the Director shall not impose a civil penalty if compliance has been achieved in another manner prior to final decision in the proceeding.

Stat. Auth.: ORS Ch. 537 & 742

Stats. Implemented: ORS Ch. 537 & 742

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90

690-240-0180

Schedule of Civil Penalties

(1) The amount of civil penalty shall be determined consistent with the following schedule:

(a) Not less than \$25 nor more than \$250 for each occurrence defined in these rules as a minor violation;

(b) Not less than \$50 nor more than \$1,000 for each occurrence defined in these rules as a major violation;

(c) First occurrence, in a calendar year, of a missing or late start card fee shall be \$150;

(d) Second occurrence, in a calendar year, of a missing or late start card fee shall be \$250; and

(e) Third [~~occurrence~~], and ~~each~~ [~~all~~] subsequent, occurrence[s], in a calendar year, of a missing or late start card fee shall be \$250 and may include suspension of the monitoring well constructor's license, and any other action authorized by law.

(2) For purposes of assessing a civil penalty, the start card fee referred to in subsections (1)(c), (d), and (e) of this rule shall not be considered late if it is received in the Salem office of the Water Resources Department within five days of the receipt of the start card, provided the start card ~~was~~ [~~is~~] submitted in a timely manner as defined in OAR 690-240-0090.

(3) Table [~~H~~]**240-3** lists minor violations related to [~~of~~] **monitoring** well construction and geotechnical holes. All other violations are declared to be major.

Stat. 536.090 & 537.505 - 537.795

Stats. Implemented: ORS 536.090 & 537.505 - 537.795

Hist.: WRD 14-1990, f. & cert. ef. 8-9-90; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 9-2001, f. & cert. ef. 11-15-01

TABLE 240-1

TABLE 240-2
(OAR 690-240)

Region Office Fax and Telephone Numbers

<u>Region</u>	<u>Office Location</u>	<u>Fax Number</u>	<u>Telephone Number</u>
<u>Eastern</u>	<u>Baker City</u>	<u>(541) 523-7866</u>	<u>(541) 523-8224</u>
<u>North Central</u>	<u>Pendleton</u>	<u>(541) 278-0287</u>	<u>(541) 278-5456</u>
<u>Northwest</u>	<u>Salem</u>	<u>(503) 378-6203</u>	<u>(503) 378-8455</u>
<u>South Central</u>	<u>Bend</u>	<u>(541) 388-5101</u>	<u>(541) 388-6669</u>
<u>Southwest</u>	<u>Grants Pass</u>	<u>(541) 471-2876</u>	<u>(541) 471-2886</u>

Notes:

- 1. Telephone and fax numbers are subject to change.**
- 2. A current version of this table is available from the Water Resources Department's Salem office.**
- 3. See Figure 240-2 for a map of region boundaries.**

**TABLE 240-3
MINOR WELL CONSTRUCTION VIOLATIONS**

Oregon Statute Reference	Value Assignment	Title
ORS 537.762	Minor	REPORT OF COMMENCEMENT OF CONSTRUCTION
ORS 537.765	Minor	WELL REPORT
<u>ORS 537.789</u>	<u>Minor</u>	<u>WELL IDENTIFICATION NUMBER</u>
Administrative Rule Reference	Value Assignment	Title
690-240-0085	Minor	MONITORING WELL DRILLING MACHINES
690-240-0090	Minor	REPORT OF COMMENCEMENT OF CONSTRUCTION
690-240-0095	Minor	MONITORING WELL REPORT REQUIRED
690-240-0095(i)	Minor	WATER TEMPERATURE
690-240-0100(4)	Minor	MONITORING WELL CONSTRUCTION (START CARD NUMBER)
<u>690-240-0024</u>	<u>Minor</u>	<u>WELL IDENTIFICATION LABEL</u>
<u>690-240-0026</u>	<u>Minor</u>	<u>WELL IDENTIFICATION LABEL MAINTENANCE</u>

APPENDIX 240-1

METHODS FOR ATTACHING WELL IDENTIFICATION TAG

MONITORING WELLS

Tags should be placed in an accessible and visible location.

For above ground completion wells:

Place tags at least 6 inches above ground level. Attach the tag to the outside of the protective casing.

The following methods are recommended by the Oregon Water Resources Department:

A. **Strap the tag to the well casing or access port.** Stainless steel bands or large hose clamps designed for exterior use are recommended. Straps may be available at electrical, auto supply or construction supply stores. Ultra violet resistant nylon straps are also acceptable. Any band used should be designed for exterior applications.

B. **Rivet or bolt the tag to the well casing.** Stainless steel rivets may be used.

For flush grade completion wells:

A. Rivet or bolt the tag to the inside of the monument skirting.

B. Band or strap the tag to the well casing.

C. Insert the strap or band into the concrete in the bottom of the vault.

Regardless of which method is used, the identification label must be easily readable.

Other options may be used provided the installation is permanent and visible. Please contact the Water Resources Department for other options.