

Proposed Water Supply Well Construction Checklist (Step 1)

Texas Commission on Environmental Quality
Water Supply Division
Plan Review Team MC-159
P.O. Box 13087, Austin, Texas 78711-3087

Public Water System I.D. No. _____
TCEQ Log No. P- _____

The following list is a brief outline of the "Rules for Public Water Systems", 30 TAC Chapter 290 regarding proposed Water Supply Well Construction. Sealed plans and specifications meeting, but not limited to, the minimum requirements cited here shall be prepared under the supervision of a Texas licensed professional engineer and submitted to TCEQ for approval. This list is not a substitute for the rules and this checklist cannot be accepted in lieu of the required engineering submittals. Failure to submit the following items may delay project approval. Copies of the rules may be obtained from **Texas Register, 1019 Brazos St, Austin, TX, 78701-2413, Phone: (512) 463-5561** or downloaded from the website: <http://www.tceq.texas.gov/rules/indxpdf.html>

1. Site map(s) with appropriate scale showing the following: [§290.41(c)(3)(A)]
 - (i) Proposed location of the well with coordinates;
 - (ii) Named roadways;
 - (iii) All property boundaries within 150 feet of the proposed well location and the property owners' names;
 - (iv) Concentric circles with the proposed well location as the center point with radii of 10 foot, 50 foot, 150, foot, and ¼ mile;
 - (v) Any site improvements and existing buildings;
 - (vi) Any existing or potential pollution hazards; and
 - (vii) Map must be scalable with a north arrow.
2. Site plan and proposed well profile drawings showing the following: [§290.41(c)(3)(A)]
 - (i) Proposed well pump and setting depth;
 - (ii) Bore hole diameter(s) (must be 3" larger than casing OD) and total well depth;
 - (iii) Casing size, length, and material (e.g. 200 lf of 12" PVC SDR-17);
 - (iv) Length and material of any screens, blanks, and/or gravel packs utilized;
 - (v) Flow meter and sampling cock prior to treatment;
 - (vi) Well casing vent with a 16-mesh or finer corrosion-resistant screen;
 - (vii) Concrete sealing block extending at least 3 feet in all directions, with a minimum thickness of 6 inches and slope no less than 0.25 inches per foot for draining;
 - (viii) Disinfection injection point on the well discharge pipe and the location of the disinfection facilities; and
 - (ix) Intruder-resistant fence and an all-weather access road.
3. A sealed engineer's report that sizes the well capacity based on connections or people to be served. See §290.45 for the minimum capacity requirements; [§290.39(e)(1)]
4. A pollution hazard survey identifying all existing or potential pollution hazards: [§290.41(c)(1)(A)-(E)]
 - (i) Within 50 feet, identify any tile or concrete sanitary sewers, sewerage appurtenances, septic tanks, storm sewers, cemeteries, or livestock in pastures;
 - (ii) Within 150 feet, identify any septic tank perforated drainfields, areas irrigated by low dosage, low angle spray on-site sewage facilities, absorption beds, evapotranspiration beds, water wells that do not meet Public Drinking Water Standards, or underground fuel or petrochemical storage tanks or pipelines;

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- (iii) Within 300 feet, identify any sewage wet wells, sewage pump stations, or drainage ditches which contain industrial waste or sewage treatment waste;
 - (iv) Within 500 feet, identify any sewage treatment plants, livestock and animal feed lots, solid waste disposal sites, lands on which sewage plant or septic tank sludge is applied, or lands irrigated by sewage plant effluent; and
 - (v) Within ¼ mile, identify any abandoned or inoperative wells and any other existing or potential pollution hazards.
5. A copy of the recorded deed of the property on which the well is located; [§290.41(c)(1)(F)(iv)]
6. Drafts of sanitary control easements covering land within 150 feet of the well not owned by the public water system; [§290.41(c)(1)(F)]
7. The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the groundwater during drilling operation: [§290.41(c)(2)]
- (i) Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids or mud shall contain a chlorine residual of at least 0.5 milligrams per liter (mg/L);
 - (ii) The slush pit shall be constructed and maintained so as to minimize contamination of the drilling mud; and
 - (iii) No temporary toilet facilities shall be maintained within 150 feet of the well being constructed unless they are of a sealed, leakproof type.
8. Well casing requirements: [§290.41(c)(3)(B)]
- (i) The material shall conform to AWWA standards;
 - (ii) The casing shall extend a minimum of 18 inches above the elevation of the finished floor or the natural ground surface and a minimum of one inch above the sealing block or pump motor foundation block when provided;
 - (iii) The casing shall extend at least to the depth of the shallowest water formation to be developed and deeper, if necessary, in order to eliminate all undesirable water-bearing strata;
 - (iv) Well construction materials may not contain more than 0.25% lead; and
 - (v) Cementing depth and pressure method (one of the methods in latest revision of AWWA Standard A-100, Appendix C, excluding the dump bailer and tremie methods).
9. When a gravel packed well is constructed, all gravel shall be of selected and graded quality and shall be thoroughly disinfected with a 50 mg/L chlorine solution as it is added to the well cavity; [§290.41(c)(3)(D)]
10. Safeguards shall be taken to prevent possible contamination of the water or damage by trespassers following the completion of the well and prior to installation of permanent pumping equipment; [§290.41(c)(3)(E)]
11. Upon well completion, the well shall be disinfected in accordance with current AWWA standards for well disinfection except that the disinfectant shall remain in the well for at least six hours; [§290.41(c)(3)(F)]
12. Well head and sealing slab:
- (i) Concrete sealing block extending at least three feet from the well casing in all directions, with a minimum thickness of six inches and sloped to drain away at not less than 0.25 inches per foot shall be provided around the wellhead; [§290.41(c)(3)(J)]
 - (ii) Wellheads and pump bases shall be sealed by a gasket or sealing compound; [§290.41(c)(3)(K)]
 - (iii) Wellheads and well vents shall be at least two feet above the highest known watermark or 100-year flood elevation; [§290.41(c)(3)(K)]

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- (iv) If a well blow-off line is provided, its discharge shall terminate in a downward direction and at a point which will not be submerged by flood waters; [§290.41(c)(3)(L)]
 - (v) A suitable sampling cock shall be provided on the discharge pipe of each well pump prior to any treatment; and [§290.41(c)(3)(M)]
 - (vi) Flow-measuring devices shall be provided for each well to measure production yields and provide for the accumulation of water production data. [§290.41(c)(3)(N)]
13. All completed well units shall be protected by intruder-resistant fences or shall be enclosed in locked, ventilated well houses to exclude possible contamination or damage to the facilities by trespassers; and [§290.41(c)(3)(O)]
14. An all-weather access road shall be provided to each well site. [§290.41(c)(3)(P)]

LIST OF COUNTIES WHERE RADIONUCLIDE TESTING IS REQUIRED

Please be aware that we have added the requirement for analysis for **radionuclides** for high risk counties. For elevated levels of any contaminants found in a test well, treatment or blending may be required.

COUNTY	STATE CODE #
Atascosa	007
Bandera	010
Bexar	015
Bosque	018
Brazoria	020
Brewster	022
Burnet	027
Concho	048
Culberson	055
Dallam	056
Dawson	058
Erath	072
Fort Bend	079
Frio	082
Garza	085
Gillespie	086
Gray	090
Grayson	091
Harris	101

COUNTY	STATE CODE #
Hudspeth	115
Irion	118
Jeff Davis	122
Jim Wells	125
Kendall	130
Kent	132
Kerr	133
Kleberg	137
Liberty	146
Llano	150
Lubbock	152
McCulloch	154
Mason	160
Matagorda	161
Medina	163
Midland	165
Montgomery	170
Moore	171

COUNTY	STATE CODE #
Parker	184
Pecos	186
Polk	187
Presidio	189
Refugio	196
San Jacinto	204
San Saba	206
Tarrant	220
Travis	227
Tyler	229
Upton	231
Val Verde	233
Victoria	235
Walker	236
Washington	239
Wichita	243
Williamson	246
Zavala	254