
**CHAPTER 62-528
UNDERGROUND INJECTION CONTROL**

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PART I**62-528.100 Underground Injection Control: Purpose.**

(1) The purpose of Chapter 62-528, F.A.C., Underground Injection Control (UIC), is to protect the quality of the State's underground sources of drinking water and to prevent degradation of the quality of other aquifers adjacent to the injection zone that may be used for other purposes. This purpose is achieved through rules that govern the construction and operation of injection wells in such a way that the injected fluid remains in the injection zone, and that unapproved interchange of water between aquifers is prohibited.

(2) The permitting concept of a Technical Advisory Committee (TAC), which has been successfully used, is formally described in this rule. The Technical Advisory Committee serves a need for interagency coordination to facilitate the permitting process, and to provide the permitting authorities the advice from the several disciplines necessary to adequately evaluate complex deep injection well system permit applications. A Technical Advisory Committee has been established in each Department District to assist and provide advice to the permitting authority on the technical aspects of underground injection. The Technical Advisory Committee is normally composed of representatives from the Department's District and Tallahassee offices, the appropriate water management district, local environmental program and the United States Geological Survey (USGS). In addition, the United States Environmental Protection Agency (EPA) shall serve as advisors to the Technical Advisory Committee in order to provide technical assistance regarding any specific matter. The Technical Advisory Committee is chaired by a representative of the Department permitting authority, who is responsible for forwarding the Technical Advisory Committee recommendations to the permitting authority. In the event a water management district also issues a permit, the water management district representative on the Technical Advisory Committee is responsible for forwarding the Technical Advisory Committee recommendations to the water management district permitting authority. As part of its interdisciplinary and interagency role, the TAC provides the means for review and determination by the Department of what is acceptable to or approvable based on the requirements of this rule chapter and chapter 403, F.S. The TAC serves two advisory purposes. It provides expert advice to the District which processes the underground injection control permit. The TAC also works directly with the applicant or permittee in providing expertise at various stages of the permitting process or whenever a decision is needed on a technical matter contained in this chapter. The TAC receives the information, and if requested by the applicant, permittee, or District, will meet always in public. When an applicant or permittee requests an alternative method, material, timeframe or other change contemplated by this chapter, the information to support that request shall be provided to each TAC member, who is listed in the permit or whose name and address is readily available from the Department District office which processes the permit, by whatever means chosen by the applicant or permittee. Any additional information needed by the TAC to make its recommendation to the

Department shall be transmitted to the applicant or permittee in writing by the District office processing the permit. After receipt of all requested information made available to the members, and based on site-specific factors such as the hydrogeology and ground water quality of the site, either of the following will happen. More discussion with the applicant or permittee will ensue, with a public meeting if a meeting of the TAC is requested or with consideration of the TAC advice, the Department's District shall transmit in writing its decision concerning the request, consistent with the requirements in this chapter. A permitting authority is not bound by a Technical Advisory Committee recommendation and may reject, modify, or amend the recommendation provided its actions are consistent with the provisions of this chapter. The Department's decision shall be a permit modification if revision of a permit condition is involved. Any such decision is final agency action subject to the procedural safeguards contained in Chapter 120, F.S. Once a project has had TAC review, minor revisions can be approved by the Department without further TAC review (for example, changes in cement additives, minor changes to well depth, sampling parameters, testing procedures, mechanical integrity testing procedures or casing setting points due to actual field conditions).

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.11, 17-28.011, 62-28.011, Amended 8-10-95, 6-24-97.

62-528.110 Underground Injection Control: Declaration and Intent.

(1) This rule establishes a State Underground Injection Control Program that is appropriate to the hydrogeology of Florida and is consistent with the requirements of the federal Underground Injection Control Program.

(2) It is the intent of this Chapter that the injection of wastes underground shall not adversely interfere with any designated use of ground water as specified in Rule 62-520.410(1), F.A.C., or cause violations of water quality standards in underground sources of drinking water.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History -- New 8-10-95.

62-528.120 Underground Injection Control: Scope.

(1) Chapter 62-528, F.A.C., covers all injection wells defined in subsection 62-528.300(1), F.A.C., as Class I, III, IV or V wells.

(2) Injection wells defined as Class II wells in subsection 62-528.300(1), F.A.C., are not included in this Chapter. Class II wells are regulated by the Florida Geological Survey under Chapter 377, F.S., and Chapters 62C-26 through 62C-30, F.A.C.

(3) Specific inclusions. The following wells are included among those types of injection activities that are covered by this Chapter. This list is not intended to be exclusive but is for clarification only.

(a) Any injection well other than a Class II well located on a drilling platform inside Florida's territorial waters.

(b) Any dug hole or well that is deeper than its largest surface dimension, where a principal function of the hole is emplacement of fluids.

(c) Any well used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste. This includes the disposal of hazardous waste into what would otherwise be septic systems and cesspools, regardless of their capacity.

(d) Any septic tank, cesspool, or other well used by a multiple dwelling, community, or regional system for the injection of wastes.

(4) Specific exclusions. The following are not covered by this Chapter:

(a) Injection wells located on a drilling platform or other site that is beyond Florida's territorial waters.

(b) Any individual or single family domestic waste residential septic system or non-residential septic system receiving only domestic wastewater which has the capacity to serve fewer than twenty persons per day, and which is regulated under Chapter 64E-6, F.A.C.

(c) Any system, other than an injection well, permitted under Parts II, III, IV, or V of Chapter 62-610, F.A.C.

(d) Any dug hole, drilled hole, or bored shaft that is not used for the subsurface emplacement of fluids.

(e) Any well used in conjunction with the operation of an earth-coupled heat pump system as defined in Rule 62-528.200(20), F.A.C.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 8-10-95, Amended 11-20-02.

62-528.200 Underground Injection Control: Definitions.

When used in this Chapter, the following words shall have the indicated meanings unless the context clearly indicates otherwise:

(1) "Abandoned well" means a well the use of which has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

(2) "Acidizing" means the injection of acid through the borehole or "well" into a "formation" to increase permeability and porosity.

(3) "Allowable stress" means the allowable stress for a material is the maximum stress that may be safely applied, which equals the yield-point stress divided by an appropriate factor of safety.

(4) "Annular monitor well" means any pipe or tubing which is permanently placed in the annulus of an injection well to monitor a discrete zone.

(5) "Annulus" or "Annular Space" means any artificially created void existing between a well casing or liner pipe and a borehole wall or between two casings or between tubing and casing or liner pipe.

(6) "Aquifer" means a geological formation, group of formations or part of a formation that is capable of yielding a significant amount of water to a well or spring.

(7) "Area of review" means the area surrounding an "injection well" described according to the criteria set forth in Rule 62-528.300(4), F.A.C., or in the case of a well field permit, the project area plus a circumscribing area with a fixed width of not less than one mile.

(8) "Casing" means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.

(9) "Catastrophic collapse" means the sudden and utter failure of adjacent or overlying strata which has been caused by removal of underlying materials.

(10) "Cementing" means the operation whereby a cement slurry is pumped into a drilled hole or forced behind the casing.

(11) "Centralizer" means a casing accessory used to properly align a casing within the open hole, or to properly align one casing within another casing, or to properly align a tubing within a casing.

(12) "Cesspool" means a "drywell" that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and perforated sides.

(13) "Cluster well" means a well where two or more monitor tubes of different lengths are emplaced within a single borehole to monitor two or more discrete zones.

(14) "Confining bed" means a layer of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

(15) "Confining zone" means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement from an injection zone.

(16) "Contaminant" means any substance which is harmful to plant, animal or human life.

(17) "Conventional mine" means an open pit or underground excavation for the production of minerals.

(18) "Department" means the Department of Environmental Protection or its successor agency or agencies.

(19) "Disposal well" means a well used for the disposal of waste into a subsurface stratum.

(20) "Dry well" means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

(21) "Earth-coupled heat pump system" means any space heating/cooling system in which fluid is circulated through a continuous section of buried pipe such that

the earth is utilized as a thermal exchange medium, but no fluid is either extracted from or injected into any underground formation.

(22) "Emergency disposal method" is an effluent disposal method that, after prior Department approval and receipt of all appropriate authorizations or permits, is available for short term discharges under emergency conditions when the primary disposal method is inoperable.

(23) "Exempted aquifer" means an aquifer or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures of Rule 62-528.300(3), F.A.C.

(24) "Experimental technology" means a technology which has not been proven feasible under the conditions in which it is being tested.

(25) "Exploratory pilot hole" means a hole drilled for the purpose of obtaining subsurface information or as a guide for the drill bit to follow when drilling the final hole.

(26) "Exploratory well" means a cased well drilled in an area in which there is limited hydrologic and geologic data, to obtain sufficient data to determine the feasibility of using an injection well at the site.

(27) "Facility or activity" means any installation as defined by section 403.031(4), F.S., that is subject to regulation under the Underground Injection Control Program. These terms shall include federal facilities and activities.

(28) "Factor of safety" means the ultimate load divided by the safe load, or the ultimate strength divided by the allowable stress.

(29) "Fault" means a surface or zone of rock fracture along which there has been displacement.

(30) "Flow rate" means the volume per unit time of the flow of fluids which emerge from an orifice, pump, turbine or which pass along a conduit or channel.

(31) "Fluid" means material or substance which flows or moves, whether in a semisolid, liquid, sludge, gas, or any other form or state.

(32) "Formation" means a body of rock characterized by a degree of lithologic homogeneity or similarity which is prevailing, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

(33) "Formation fluid" means fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling mud, injected fluids or dilute products of injected fluids.

(34) "Ground water" means water below the land surface in a zone wherein all of the interstices are filled with water.

(35) "Hazardous waste" means a hazardous waste as defined in Rule 62-730.030, F.A.C.

(36) "Hydrogeology" means the branch of hydrology that deals with ground water, its occurrence and movements, its replenishment and depletion, the properties of rocks that control ground water movement and storage, and the methods of investigation and use of ground water.

(37) "Improved sinkhole" means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings that has been

modified by humans for the purpose of directing and emplacing fluids into the subsurface.

(38) "Injection pressure" means the pressure required to inject fluid, as measured at the wellhead.

(39) "Injection well" means a well into which fluids are being or will be injected, by gravity flow or under pressure.

(40) "Injection well system" means the portion of the disposal system from the effluent side or pressure side of the injection pump to the bottom of the injection well.

(41) "Injection zone" means a geological formation, group of formations, or part of a formation receiving fluids directly through a well.

(42) "Lithology" means the description of rocks on the basis of their physical and chemical characteristics.

(43) "Major Class V well" means any Class V, Group 3 well used to inject fluids into or above the lowermost formation containing, within one-quarter mile of the well bore, an underground source of drinking water, any Class V, Group 1 well used to inject fluids through an open loop system or containing additives, or any Class V, Group 2, 4, 5, 7, 8, or 9 well as defined in Rule 62-528.300(1)(e), F.A.C., except swimming pool drainage wells.

(44) "Multihorizon monitor well" means any well which is used to monitor in each of two or more discrete zones.

(45) "Municipal injection well" means an injection well, publicly or privately owned, which is used to inject only fluids that have passed through the head of a permitted domestic wastewater treatment facility and received at least secondary treatment pursuant to Rule 62-600.420, F.A.C.

(46) "New injection well" means a well for which a final construction permit has been issued by the Department and which began injection after April 1, 1982.

(47) "On-site monitor well" means a well associated with an injection well or facility, that is used primarily to monitor fluid movement adjacent to the wellbore or to monitor the effectiveness of the confining beds overlying the injection zone.

(48) "Overdrill" means the amount by which the nominal diameter of the open hole exceeds the diameter of the casing to be set in the hole.

(49) "Owner" means the person, entity, or corporation with legal title to the property on which an injection well exists.

(50) "Packer" means a device lowered into a well to produce a fluid-tight seal.

(51) "Permittee" means the person or entity to which a permit for an injection well or injection well system is issued by the Department. Upon transfer of ownership of the facility, the permittee shall comply with Rule 62-4.120, F.A.C.

(52) "Plugging" means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

(53) "Point of injection" means that last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the

distribution box, which is the last accessible sampling point before the waste fluids drain into the underlying soils. For a drywell, it is likely to be the well bore itself.

(54) "Radioactive waste" means any waste which contains radioactive material in concentrations which exceed those listed in 10 C.F.R. pt. 20, Appendix B, Table II, Column 2 (1994).

(55) "Regional monitor well" means a well used primarily to monitor the distant effects of injection from one or more injection facilities.

(56) "Sanitary waste" means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

(57) "Satellite monitor well" means a well associated with an injection facility that is used primarily to monitor the effects of injection from a single injection well or facility.

(58) "Secretary" means the Secretary of the Department of Environmental Protection.

(59) "Septic system" means a "well" that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

(60) "Subsidence" means the lowering of the natural land surface in response to: earth movements; lowering of fluid pressure; removal of underlying supporting material by mining or solution of solids, either artificially or from natural causes; compaction due to wetting (hydrocompaction); oxidation of organic matter in soils; or added load on the land surface.

(61) "Subsurface fluid distribution system" means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

(62) "Surface casing" means the first string of well casing to be installed in the well.

(63) "Technical Advisory Committee" means a group of professionals knowledgeable in underground injection control requirements, geology, ground water hydrology, well drilling, geophysical logging, and pollution control, assembled for the purposes of advising the permitting authority on underground injection projects. The composition of the Technical Advisory Committee is specified in Rule 62-528.100(2), F.A.C.

(64) "Test injection well" means the first injection well constructed in a well field, which is used for specific formation testing and to verify the feasibility of the

injection well system. This well is designed and constructed to be used as an injection well, if injection is proven feasible and environmentally acceptable.

(65) "Tubing" means piping material placed inside the final string of casing to protect the casing and to convey the injected fluid to the injection zone.

(66) "Underground source of drinking water" means an "aquifer" or its portion:

(a) Which supplies drinking water for human consumption, is classified by Rule 62-520.410(1), F.A.C., as Class F-I, G-I or G-II ground water, or contains a total dissolved solids concentration of less than 10,000 mg/L; and

(b) Which is not an exempted aquifer.

(67) "Well" means a bored, drilled or driven shaft, or a dug hole, which has a depth greater than the diameter of the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.

(68) "Well casing" means a metallic or non-metallic pipe installed in a borehole to prevent caving, provide structural strength, seal off subsurface zones, or prevent the interchange of waters between aquifers.

(69) "Well injection" means the subsurface emplacement of fluids through a well by gravity flow or under pressure.

(70) "Well log" means a record obtained from a well that provides data on the formations penetrated or well construction.

(71) "Well monitoring" means the measurement, by on-site instruments or laboratory methods, of the physical, chemical, or biological parameters required to evaluate the performance of an injection well system.

(72) "Well plug" means a watertight and gastight seal installed in a borehole or well to prevent movement of fluids.

(73) "Well record" means a concise statement of the available data regarding a well.

(74) "Well stimulation" means any of several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for injected fluids to move more readily into the formation, and includes surging, jetting, blasting, acidizing, and hydraulic fracturing, or other method approved by the Department. The approval process is described in Rule 62-528.100(2), F.A.C.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.031, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.12, 17-28.120, 62-28.120, Amended 8-10-95, 6-24-97, 11-20-02, 10-9-08.

62-528.300 Underground Injection Control: General Provisions.

(1) Classification of Injection Wells. Injection wells are classified as follows:

(a) Class I.

1. Wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the

lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

2. Other industrial and municipal (publicly or privately owned) disposal wells which inject fluids beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

3. Radioactive waste disposal wells that inject fluids below the lowermost formation containing an underground source of drinking water within one-quarter mile of the well bore.

(b) Class II. Wells which inject fluids:

1. Which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.

2. For enhanced recovery of oil or natural gas; and

3. For storage of hydrocarbons which are liquid at standard temperature and pressure.

(c) Class III. Wells which inject for extraction of minerals, including:

1. Mining of sulfur by the Frasch process;

2. Solution mining of minerals; (Note-Solution mining of minerals includes sodium chloride, potash, phosphate, copper, uranium and any other mineral which can be mined by this process).

(d) Class IV. Wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive wastes:

1. Into or above a formation which, within one quarter mile of the well, contains either an underground source of drinking water, or an exempted aquifer, or

2. Which cannot be classified as a Class I well under Rule 62-528.300(1)(a), F.A.C., or as a Class IV well under subparagraph 1. above.

(e) Class V. Only injection wells not included in Class I, II, III, or IV are Class V wells, which are grouped together for the purpose of permitting:

1. Group 1 - Thermal Exchange Process Wells.

a. Air conditioning return flow wells used to return to any aquifer the water used for heating or cooling. An air conditioning supply well, heat pump, and return flow well used to inject water into the same permeable zone from which it was withdrawn constitute a closed-loop system;

b. Cooling water return flow wells used to inject water previously used for cooling;

2. Group 2 - Aquifer Recharge Wells.

a. Recharge wells used to replenish, augment, or store water in an aquifer;

b. Salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of salt water into the fresh water;

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- c. Subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a zone which does not produce oil or gas to reduce or eliminate subsidence associated with the overdraft of fresh water;
 - d. Connector wells used to connect two aquifers to allow interchange of water between those aquifers;
- 3. Group 3 - Domestic Wastewater Wells.
 - a. Wells which are part of domestic wastewater treatment systems excluding wells which are defined as Class I wells under Rule 62-528.300(1)(a)2., F.A.C., used to discharge effluent or reclaimed water from domestic wastewater treatment facilities;
 - b. Septic system wells used to inject the waste from a multiple dwelling, business establishment, community, or regional business establishment septic tank. This Chapter does not apply to individual or single family domestic waste residential septic systems nor to non-residential septic systems receiving only domestic wastewater which have the capacity to serve fewer than twenty persons per day, and which are regulated under Chapter 64E-6, F.A.C. Septic system wells receiving nondomestic wastewater shall be considered as Group 4 wells;
 - 4. Group 4 - Nondomestic Wastewater Wells.
 - a. Dry wells used for the injection of wastes into a subsurface formation;
 - b. Injection wells associated with an aquifer remediation project;
 - c. Wells other than Class I or Class IV used to inject radioactive waste, provided the concentrations of the waste do not exceed drinking water standards contained in Chapter 62-550, F.A.C.;
 - d. Desalination process concentrate wells;
 - 5. Group 5 - Mining or Mineral Extraction Wells.
 - a. Wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;
 - b. Sand backfill wells used to inject a mixture of water and sand, tailings or other solids into mined out portions of subsurface mines;
 - c. Injection wells used for in situ recovery of phosphate, uraniferous sandstone, clay, sand, and other minerals extracted by the borehole slurry mining method;
 - 6. Group 6 - Stormwater Wells. Wells used to drain surface fluid, primarily storm run-off or for lake level control, into a subsurface formation;
 - 7. Group 7 - Aquifer Storage and Recovery System Wells. Wells associated with an aquifer storage and recovery facility where surface water or ground water is injected and stored for later recovery for potable or nonpotable use. Wells used to store and recover effluent or reclaimed water from a domestic wastewater treatment plant shall be permitted as Group 3 wells.
 - 8. Group 8 – Class V Wells Regulated Under Additional Federal Requirements.
 - a. Large capacity cesspools including multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes perforated sides. The UIC
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requirements do not apply to single family residential cesspools nor to non-residential cesspools that receive solely sanitary waste and have the capacity to serve fewer than 20 persons a day;

b. Motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new or used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR part 142). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health;

9. Group 9 - Other Class V Wells.

a. Exploratory wells;

b. Injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electric power;

c. Swimming pool drainage wells;

d. Injection wells used in experimental technologies; and

e. Other wells.

(2) Identification of Underground Sources of Drinking Water. The Department will identify by narrative description, illustrations, maps, and other means and shall protect, except where exempted under Rule 62-528.300(3), F.A.C., as an underground source of drinking water, all aquifers or parts of aquifers which meet the definition of an "underground source of drinking water" in Rule 62-528.200(66), F.A.C. Even if an aquifer has not been specifically identified by the Department, it is an underground source of drinking water if it meets the definition in Rule 62-528.200(66), F.A.C., and the criteria in Rule 62-520.410(1), F.A.C.

(3) Identification of and Criteria for Exempted Aquifers.

(a) After notice and opportunity for a public hearing as provided by Rules 62-528.315 through .330, F.A.C., the Department shall identify (by narrative description, illustrations, maps, or other means) and describe in geographic or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the Department proposes to designate as exempted aquifers using the criteria in (c) below. No such designation shall be final until approved by the United States Environmental Protection Agency as part of the State program.

(b) Subsequent to program approval, the Department may, after notice and opportunity for a public hearing, identify additional exempted aquifers. Exemption of aquifers identified under (c)2. below are considered major aquifer exemptions and shall be treated as a program revision subject to the provisions of 40 C.F.R. pt. 145.32 (1994) and requiring public notice in the Federal Register. Exemption of aquifers identified under (c)3. below are considered minor aquifer exemptions and shall become final if the Department submits the exemption in writing to the Environmental Protection Agency Administrator, or an authorized delegatee, and the Administrator, or an authorized

delegatee, has not disapproved the designation within 45 days. Any disapproval by the Administrator shall state the reasons and shall constitute final Environmental Protection Agency action for purposes of judicial review.

(c) To be an exempted aquifer, an aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in Rule 62-528.200(66)(a), F.A.C., shall meet the following criteria:

1. It does not currently serve as a source of drinking water; and
2. It cannot now and will not in the future serve as a source of drinking water because:

- a. It is mineral, hydrocarbon, or geothermal energy producing, or can be demonstrated by a permit applicant for a Class III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;

- b. It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

- c. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

- d. It is located over a Class III well mining area subject to subsidence or catastrophic collapse, or

3. The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/L and it is not reasonably expected to be or become a supply of drinking water; and

4. Has satisfied the following requirements in accordance with paragraph (b) above:

- a. A major aquifer exemption has been approved by the Environmental Protection Agency; or

- b. A minor aquifer exemption has not been disapproved by the Environmental Protection Agency.

(d) For Class III wells, the Department shall require an applicant for a permit which necessitates an aquifer exemption under (c)2.a. above to furnish the data necessary to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing. Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a timetable of planned development of the mining zone shall be considered by the Department in addition to the information required by Rule 62-528.450(2), F.A.C. Approval of the aquifer exemption shall be treated as a program revision.

(e) No aquifer exemption request shall be processed until the Department has received the appropriate fee as specified in Rule 62-4.050(4)(o)5. or 6., F.A.C.

(4) Area of Review.

(a) An area of review, which shall apply to each Class I and Class III well, well field, project or area of the State, and for a Class V injection well when required, shall

be determined by the applicant in a manner that shall take into account the zone of endangering influence, which is the lateral area in which the buoyant forces or increased pressures in the injection zone may cause the migration of the injected or formation fluid into an underground source of drinking water. The area of review is the land surface overlying the zone of endangering influence.

(b) In determining the area of review, the information to be used shall include chemical, physical, and biological characteristics of the injection fluids and formation fluids; hydrogeology; appropriate mathematical models, if available, for computing pressure and concentration changes in the injection zone as a function of distance and time; population; ground water use and dependence; and historical practices in the area. A radius around the injection well of one mile, or two miles for a hazardous waste well, shall be a minimum. In the case of an application for a well field project, a fixed width of not less than one mile for the circumscribing area shall be a minimum.

(5) Corrective Action.

(a) Coverage. Applicants for Class I or Class III injection well permits shall identify, and for any Class V well permit when required by the Department shall identify, the location of all known wells within the area of review for that injection well which penetrate the injection zone or confining zone. For such wells which are in use or improperly sealed, completed, or abandoned, the applicant shall also submit a plan specifying plugging and abandonment, pressure limitations, or such actions or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Department shall incorporate it into the permit as a condition. Where the Department's review of an application indicates that the applicant's plan is inadequate (based on the factors in (b) below) the Department shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under (b) below, or deny the application. In no case shall the Department issue a permit without incorporating a plan for corrective action in such permit when such corrective action is required by this subsection.

(b) Criteria and Factors. In determining the adequacy of corrective action proposed by the application under paragraph (a) of this subsection and in determining the additional steps needed to prevent fluid movement into underground sources of drinking water, the following criteria and factors shall be considered by the Department:

1. Nature, volume, and injection rate of the injected fluid;
2. Nature of native fluids, or by-products of injection;
3. Potentially affected population;
4. Geology;
5. Hydrology;
6. History of the injection operation;
7. Completion and plugging records for all wells;
8. Abandonment procedures in effect at the time the well was abandoned;
9. Hydraulic connections with underground sources of drinking water;
10. Life of injection well; and

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11. Pressure considerations.
 - (c) Requirements.
 1. Existing Injection Wells. Any permit issued for an existing injection well requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this subsection. In addition, schedules of compliance shall require compliance as soon as possible, but not later than three years after the effective date of the permit.
 2. New Injection Wells. No owner or operator of a new injection well shall begin injection until all required corrective action has been completed. The Department shall not authorize construction of a new injection well prior to the completion of all required action unless the applicant can affirmatively demonstrate that such construction will not pose a threat to the quality of the waters of the State. However, operational testing pursuant to Rule 62-528.450(3), F.A.C., shall not be authorized until all corrective action has been completed.
 3. If needed to prevent fluid movement into an underground source of drinking water, the Department shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well in the area of review does not exceed a pressure which could cause fluid movement into an underground source of drinking water. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other corrective action has been taken. The Department shall consider alternative methods of control which prevent fluid movement into underground sources of drinking water through wells which are improperly sealed, completed or abandoned within the area of review.
 4. Class III Wells Only. When setting corrective action requirements, the Department shall consider the overall effect of the project on the hydraulic gradient in potentially affected underground sources of drinking water, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessarily based on the determinations above, the monitoring program required in Rule 62-528.425(2), F.A.C., shall be designed to verify the validity of such determinations.
 - (6) Mechanical Integrity.
 - (a) An injection well has mechanical integrity if:
 1. There is no leak in the casing, tubing or packer; and
 2. There is no fluid movement into an underground source of drinking water through channels adjacent to the injection well bore.
 - (b) One of the following tests shall be used to evaluate the absence of leaks under subparagraph (a)1. of this subsection.
 1. Monitoring of the tubing-casing annulus pressure with sufficient frequency to be representative, as determined by the Department, while maintaining an annulus pressure different from atmospheric pressure measured at the surface, after an initial pressure test pursuant to subparagraph 2. and paragraph (e) of this subsection; or
 2. Pressure test of inner casing or tubing.

(c) The following methods shall be used to determine the absence of fluid movement under subparagraph (a)2. A temperature or noise log, and a radioactive tracer survey. The radioactive tracer survey shall not be required by the Department if such testing may pose a threat to an underground source of drinking water.

(d) The Department shall allow the use of a test to demonstrate mechanical integrity, other than those listed in paragraphs (b) and (c) above, with the written approval of the United States Environmental Protection Agency. (The permittee proposes the alternative to the Department, and the Department seeks the approval from EPA.) If the Environmental Protection Agency has published in the *Federal Register* an alternative mechanical integrity test method, only written Department approval shall be required before conducting alternative mechanical integrity tests to those specified in (b) and (c) above. The Department approval process is described in Rule 62-528.100(2), F.A.C.

(e) A pressure test required under paragraph (b) above shall be conducted with a liquid at a minimum pressure of 1.5 times the maximum pressure at which the well is to be permitted, or 50 PSI, whichever is higher, for at least one hour. Internal mechanical integrity under subparagraph (a)1. above is demonstrated if there is no more than a five-percent pressure change over the one-hour test period. The pressure used to test wells constructed using tubing and packer shall not exceed the design specifications of the tubing or packer.

(f) In conducting and evaluating the tests enumerated in this rule or others to be allowed by the Department, the permittee and the Department shall apply methods and standards generally accepted in the industry. When the permittee reports the results of mechanical integrity tests to the Department, a description of the test(s), method(s) used, and interpretation of the results shall be included. In making the evaluation, the Department shall review monitoring and other test data submitted since the previous evaluation.

(g) The Department shall require additional or alternative mechanical integrity tests in accordance with 40 C.F.R. §146.8(f) (1996).

(h) A permit for any Class I or III well or injection project which lacks mechanical integrity shall include, and for any Class V well may include, a condition prohibiting injection operations until the permittee affirmatively demonstrates under Rule 62-528.300(6)(a)-(c), F.A.C., that the well has mechanical integrity, or the permittee affirmatively demonstrates that there is no movement of fluid into or between underground sources of drinking water.

(7) Confidential Information. In addition to the provision in section 403.111, F.S., claims of confidentiality for the following information shall be denied:

(a) The name and address of any permit applicant or permittee, and
(b) Information which deals with the existence, absence, or level of contamination in drinking water.

(8) Quality Assurance/Quality Control.

(a) All water quality sampling and analyses associated with Class I, Class III, and Class IV injection wells shall be in accordance with a current Department approved quality assurance plan under Rules 62-160.210 and .300(7)(g) through (k), F.A.C.

(b) All Class V injection wells requiring water quality analyses to be performed shall be in accordance with a current Department approved comprehensive quality assurance plan under Rules 62-160.210 and .300(6), F.A.C.

(9) Reuse Requirements.

(a) This subsection applies only to those Class I municipal wells located within, serving a population within, or associated with a domestic wastewater treatment facility located within a water resource caution area as described in Chapter 62-40, F.A.C.

(b) If, after conducting a reuse feasibility study under section 403.064(2), F.S., a permit applicant determines that the reuse of reclaimed water is feasible, the permittee shall implement reuse according to the schedule for implementation contained in the study conducted under section 403.064, F.S., to the degree that reuse is determined to be feasible.

(c) Nothing in this paragraph shall limit the use of a Class I municipal injection well as backup for a reclaimed water reuse system.

Specific Authority 373.309, 403.061, 403.087, 403.721 F.S. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.064, 403.087, 403.088, 403.161, 403.702, 403.721 F.S. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.13, Amended 8-30-88, Formerly 17-28.130, 62-28.130, Amended 8-10-95, 6-24-97, 11-20-02.

62-528.305 Underground Injection Control: Permit Processing.

The time frames in Rule 62-4.055, F.A.C., shall apply to underground injection control permits. However, the failure of the Department to approve or deny a permit for an underground injection well within the 90-day time period shall not result in the automatic approval or denial of the permit and shall not prevent the inclusion of specific permit conditions which are necessary to ensure compliance with applicable statutes or rules. If the Department fails to approve or deny such a permit within the 90-day period, the applicant may petition for a writ of mandamus to compel the Department to act consistently with applicable regulatory requirements.

Specific Authority 373.309, 403.061, 403.087 F.S. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.0876 F.S. History - New 12-3-84, Formerly 17-28.14, 17-28.140, 62-28.140, Amended 8-10-95.

62-528.307 Underground Injection Control: General Conditions for Permits.

The following general conditions shall be included in each of the respective types of underground injection control permits.

(1) All UIC Permits.

(a) The terms, conditions, requirements, limitations and restrictions set forth in this permit are "permit conditions" and are binding and enforceable pursuant to section 403.141, F.S.

(b) This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action.

(c) As provided in subsection 403.087(7), F.S., the issuance of this permit does not convey any vested rights or exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

(d) This permit conveys no title to land, water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

(e) This permit does not relieve the permittee from liability for harm to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefrom; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

(f) The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, or are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

(g) The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

1. Have access to and copy any records that must be kept under conditions of this permit;

2. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

3. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time will depend on the nature of the concern being investigated.

(h) If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

1. A description of and cause of noncompliance; and
2. The period of noncompliance, including dates and times; or, if not corrected the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent the recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

(i) In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is proscribed by sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

(j) The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

(k) This permit is transferable only upon Department approval in accordance with rules 62-4.120 and 62-528.350, F.A.C. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

(l) This permit or a copy thereof shall be kept at the work site of the permitted activity.

(m) The permittee shall comply with the following:

1. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records shall be extended automatically unless the Department determines that the records are no longer required.

2. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

3. Records of monitoring information shall include:

- a. the date, exact place, and time of sampling or measurements;
- b. the person responsible for performing the sampling or measurements;
- c. the dates analyses were performed;
- d. the person responsible for performing the analyses;
- e. the analytical techniques or methods used;
- f. the results of such analyses.

4. The permittee shall furnish to the Department, within the time requested in writing, any information which the Department requests to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

5. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

(n) All applications, reports, or information required by the Department shall be certified as being true, accurate, and complete.

(o) Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each scheduled date.

(p) Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(q) It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(r) The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

(s) This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 C.F.R. sections 144.39(a), 144.40(a), and 144.41 (1998). The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(t) The permittee shall retain all records of all monitoring information concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment procedures specified under rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records.

(u) All reports and other submittals required to comply with this permit shall be signed by a person authorized under rules 62-528.340(1) or (2), F.A.C. All reports shall contain the certification required in rule 62-528.340(4), F.A.C.

(v) The permittee shall notify the Department as soon as possible of any planned physical alterations or additions to the permitted facility. In addition, prior approval is required for activities described in rule 62-528.410(1)(h).

(w) The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity which may result in noncompliance with permit requirements.

(x) The permittee shall report any noncompliance which may endanger health or the environment including:

1. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or

2. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) All UIC Construction Permits.

(a) If injection is to continue beyond the expiration date of this permit the permittee shall apply for, and obtain an operation permit. If necessary to complete the two-year operational testing period, the permittee shall apply for renewal of the construction permit at least 60 days prior to the expiration date of this permit.

(b) Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

(c) The injection system shall be monitored in accordance with rules 62-528.425(1)(g) and 62-528.430(2), F.A.C. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(d) The permittee shall submit monthly to the Department the results of all injection well and monitor well data required by this permit no later than the last day of the month immediately following the month of record. The results shall be sent to the Department of Environmental Protection, [Name]District Office, [Address]. A copy of this report shall also be sent to the Department of Environmental Protection, Underground Injection Control Program, MS 3530, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(e) Operational testing. Prior to operational testing, the permittee shall comply with the requirements of rule 62-528.450(3)(a),(b), and (c), F.A.C.

(f) Mechanical Integrity.

1. Injection is prohibited until the permittee affirmatively demonstrates that the well has mechanical integrity. Prior to operational testing the permittee shall establish, and thereafter maintain the mechanical integrity of the well at all times.

2. If the Department determines that the injection well lacks mechanical integrity, written notice shall be given to the permittee.

3. Within 48 hours of receiving written notice that the well lacks mechanical integrity, unless the Department requires immediate cessation of injection, the permittee shall cease injection into the well unless the Department allows continued injection pursuant to subparagraph 4 below.

4. The Department shall allow the permittee to continue operation of a well that lacks mechanical integrity if the permittee has made a satisfactory demonstration that fluid movement into or between underground sources of drinking water is not occurring.

(3) All UIC Operation Permits.

(a) In accordance with rules 62-4.090(1) and 62-528.455(3)(a), F.A.C., the permittee shall submit an application for permit renewal at least 60 days prior to expiration of this permit.

(b) Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

(c) The injection system shall be monitored in accordance with rules 62-528.425(1)(g) and 62-528.430(2), F.A.C. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(d) The permittee shall submit monthly to the Department the results of all injection well and monitor well data required by this permit no later than the last day of the month immediately following the month of record. The results shall be sent to the Department of Environmental Protection, [Name] District Office, [Address]. A copy of this report shall also be sent to the Department of Environmental Protection, Underground Injection Control Program, MS 3530, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(e) Mechanical Integrity.

1. The permittee shall maintain the mechanical integrity of the well at all times.

2. If the Department determines that the injection well lacks mechanical integrity, written notice shall be given to the permittee.

3. Within 48 hours of receiving written notice that the well lacks mechanical integrity, unless the Department requires immediate cessation of injection, the permittee shall cease injection into the well unless the Department allows continued injection pursuant to subparagraph 4 below.

4. The Department shall allow the permittee to continue operation of a well that lacks mechanical integrity if the permittee has made a satisfactory demonstration that fluid movement into or between underground sources of drinking water is not occurring.

(4) All UIC Plugging and Abandonment Permits.

(a) The well shall be plugged and abandoned in a manner that will not allow fluid movement into or between underground sources of drinking water.

(b) In accordance with rule 62-528.435(11), F.A.C., the permittee shall submit to the Department a plugging and abandonment report within 90 days of completion of plugging and abandonment.

Specific Authority 403.061, 403.087, 403.088 FS. Law Implemented 403.061, 403.087, 403.088 FS. History - New 7-15-99.

62-528.310 Underground Injection Control: Draft Permit.

- (1) Once an application for a Class I, Class III, or major Class V well is complete, the Department shall prepare a draft permit or intent to deny the permit.
- (2) If the Department prepares a draft permit, it shall contain the following information:
 - (a) The applicable general permit conditions under rule 62-528.307, F.A.C., and specific permit conditions under this Chapter;
 - (b) All compliance schedules under Rules 62-528.300(5)(c) and 62-528.345, F.A.C.; and
 - (c) All monitoring requirements under Rules 62-528.430 or 62-528.620, F.A.C.
- (3) All draft permits prepared by the Department under this section shall be accompanied by a fact sheet pursuant to Rule 62-528.335, F.A.C., and shall be based on the administrative record, shall be publicly noticed pursuant to Rule 62-528.315, F.A.C., and made available for public comment pursuant to Rule 62-528.321, F.A.C. The Department shall give notice of an opportunity for a public meeting pursuant to Rule 62-528.325, F.A.C., and respond to comments pursuant to Rule 62-528.330, F.A.C. Specific Authority 373.309, 403.061, 403.087 F.S. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.0876 F.S. History - New 8-10-95, Amended 7-15-99.

62-528.315 Underground Injection Control Requirements for Public Notice.

- (1) For Class I, Class III, or major Class V wells, the Department shall give public notice that the following actions have occurred:
 - (a) A draft permit for construction, operation, or plugging and abandonment under Rule 62-528.310, F.A.C., has been prepared.
 - (b) A draft consent order, or other non-procedural order which has not yet been subjected to a notice of intended agency action has been prepared.
 - (c) A public meeting has been scheduled pursuant to Rule 62-528.325, F.A.C.
- (2) No public notice is required when a request for a permit, including modifications, revocation, reissuance or termination, is denied. Written notice of that denial shall be given to the requester and to the permittee.
- (3) Public notices may describe more than one permit or permit action.
- (4) Public notice of the preparation of a draft permit shall allow at least 30 days for public comment.
- (5) Public notice of a public meeting shall be given at least 30 days before the meeting. Public notice of the meeting may be given at the same time as public notice of the draft permit, or the two notices may be combined.
- (6) Public notice of the activities described in subsection (1) above shall be given by the following methods:
 - (a) By mailing a copy of the notice to the following persons (any person otherwise entitled to receive notice under this subsection may waive his or her rights to

receive notice if he or she specifically waives his or her rights in response to the public notice for any classes and categories of permits; agencies listed in subparagraphs 2 through 4 below waive their right to receive notice if they specifically waive their rights in response to the Department's request to remain on the mailing list):

1. The applicant;
2. Any other agency which the Department knows has issued or is required to issue a permit under Resource Conservation and Recovery Act, National Pollutant Discharge Elimination System, section 404 of the Clean Water Act, Prevention of Significant Deterioration (or other permit under the Clean Air Act), sludge management permit, or ocean dumping under the Marine Research Protection and Sanctuaries Act for the same facility or activity (including the U.S. Environmental Protection Agency);
3. Federal and state agencies in Florida with jurisdiction over fish, shellfish and wildlife resources, and over coastal zone management plans, the Advisory Council on Historic Preservation, State Historic Preservation officers, and any affected state including Indian Tribes;
4. For Class I injection well permits, state and local oil and gas regulatory agencies and state agencies regulating mineral exploration and recovery;
5. Persons on a Department mailing list which is to be developed by:
 - a. Including those who request in writing to be on the list;
 - b. Soliciting persons for a Department District office list from those participants in past permit proceedings in that district;
 - c. Notifying the public of the opportunity to be on a mailing list through periodic publication in the public press and in such publications as regional or state funded newsletters, environmental bulletins, or state law journals. The Department shall update the mailing list from time to time by requesting written indication of continued interest from those listed.
6. The primary unit of local government having jurisdiction over the area where the facility is proposed to be located;
7. Each state agency having any authority under state law with respect to the construction or operation of such facility.
 - (b) A notice in a daily or weekly newspaper having general circulation within the area affected by the facility or activity; and
 - (c) Any other method reasonably calculated to give actual notice of the action in question to a person potentially affected by it, including press releases or any other forum or medium to elicit public participation.
- (7) All public notices issued under this section are prepared by the Department and shall at a minimum contain the following information:
 - (a) Name and address of the office processing the permit action for which the notice is being given;
 - (b) Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit;
 - (c) A brief description of the business conducted at the facility or activity described in the permit application or draft permit;

(d) Name, address, and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit, statement of basis or fact sheet, and the application, and

(e) A brief description of the comment procedures described in Rules 62-528.321 and .325, F.A.C., and the time and place of any public meeting that will be held, including a statement of procedures to request a meeting (unless a meeting has already been scheduled) and other procedures by which the public may participate in the final permit decision.

(f) Any additional information considered necessary to fulfill the purpose of the notice.

(8) Public notices for public meetings. In addition to the general public notice described in (7) above, the public notice of a meeting under Rule 62-528.325, F.A.C., shall contain the following:

(a) Reference to the date of any previous public notices relating to the permit;

(b) Date, time, and place of the meeting;

(c) A brief description of the nature and purpose of the meeting, including the applicable rules and procedures.

(9) In addition to the general public notice described in subsection (7) above, all persons who receive notice under subparagraphs (6)(a)2 and 3 above shall be mailed a copy of the permit application (if any) without supporting documentation, and all persons who receive notice under subparagraphs (6)(a)1, 2, and 3 above shall be mailed a copy of the notice of draft permit (if any) by the Department.

(10) After the conclusion of the public comment period described in Rule 62-528.321, F.A.C., and after the conclusion of a public meeting (if any) described in Rule 62-528.325, F.A.C., the applicant shall publish public notice of the proposed agency action including the availability of an administrative hearing under sections 120.569 and 120.57, F.S. This public notice shall follow the procedure described in Rule 62-110.106(7), F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 120.60, 373.308, 403.061, 403.062 FS. History - New 8-10-95, Amended 6-24-97.

62-528.320 Class I - Exploratory Well Construction and Testing Permit.

Specific Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.088, 403.161, 403.702, 403.721 FS. History - New 4-1-82, Amended 5-8-85,. Previously numbered as 17-28.32, Formerly 17-28.320, Formerly 62-28.320, Repealed 8-10-95.

62-528.321 Public Comments and Requests for Public Meetings for Underground Injection Control.

During the public comment period provided in Rule 62-528.315, F.A.C., any interested person may submit written comments on the draft permit or the enforcement action, and may request a public meeting, if no meeting has been scheduled. A request for public meeting shall be in writing and shall state the nature of the issues proposed to be raised

in the meeting. All comments shall be considered in making the final decision and shall be answered as provided in Rule 62-528.330, F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.061, 403.062 FS. History - New 8-10-95.

62-528.325 Public Meetings for Underground Injection Control.

(1) The Department shall hold a public meeting in the area where the injection well is located whenever it finds, on the basis of requests, a significant degree of public interest in a draft permit;

(2) The Department shall also hold a public meeting in the area where the injection well is located whenever such a meeting may clarify one or more issues involved in the permit decision;

(3) Public notice of the meeting shall be given as specified in Rule 62-528.315, F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.061, 403.062, 403.087, 403.121 FS. History - New 8-10-95.

62-528.330 Underground Injection Control: Response to Public Comment.

At the time that a final permit is issued for Class I, Class III, and major Class V wells, the Department shall issue a written response to comments and make the response available to the public. This response shall:

(1) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(2) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period or any public meeting.

Specific Authority 373.309, 403.087 FS. Law Implemented 373.308, 403.087 FS. History - New 8-10-95.

62-528.335 Underground Injection Control: Fact Sheet.

(1) The Department shall prepare a fact sheet for every draft permit for a Class I, Class III, or major Class V facility or activity and for every draft permit which the Department finds is the subject of widespread public interest or raises major issues. The fact sheet shall briefly set forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The Department shall send this fact sheet to the applicant and, on request, to any other person.

(2) The fact sheet shall include, when applicable:

(a) A brief description of the type of facility or activity which is the subject of the draft permit;

(b) The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, disposed of, injected, or discharged.

(c) A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record;

(d) Reasons why any requested variances or alternatives to adopted standards are or are not justified;

(e) A description of the procedures for reaching a final decision on the draft permit including:

1. The beginning and ending dates of the comment period under Rule 62-528.315, F.A.C., and the address where comments will be received;
2. Procedures for requesting a meeting and the nature of that meeting; and
3. Any other procedures by which the public may participate in the permit decision.

(f) Name and telephone number of a person to contact for additional information.

Specific Authority 373.309, 403.087 FS. Law Implemented 373.308, 403.087 FS.
History - New 8-10-95.

62-528.340 Signatories to Permit Applications and Reports for Underground Injection Control.

(1) Applications. All permit applications, except those submitted for Class II wells (see subsection (2) of this section), shall be signed as follows:

(a) For a corporation, by a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means:

1. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
2. The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Note: Specific assignments or delegations of authority to responsible corporate officers identified in subparagraph 1. above is not required. The Department will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Department to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under subparagraph 2. above rather than to specific individuals.

(b) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

(c) For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a state or federal agency includes the chief executive

officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

(2) Reports. All reports required by permits and other information requested by the Department shall be signed by a person described in subsection (1) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described in subsection (1) of this section;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

(c) The written authorization is submitted to the Department.

(3) Changes to authorization. If an authorization under subsection (2) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of subsection (2) of this section shall be submitted to the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

(4) Certification. Any person signing a document under subsection (1) or (2) of this section shall make the following certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Specific Authority 373.309, 403.087 FS. Law Implemented 373.308, 403.087 FS.
History - New 8-10-95, Amended 6-24-97.

62-528.345 Compliance Schedules for Underground Injection Control Permits.

(1) General. The permit shall, when appropriate, specify a schedule of compliance leading to compliance with any Department rule.

(2) Time for compliance. Any schedules of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.

(3) Interim dates. If a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

- (a) The time between interim dates shall not exceed one year.
 - (b) If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.
 - (4) Reporting. The permit shall be written to require that if subsection (3) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.
- Specific Authority 373.309, 403.087 FS. Law Implemented 373.308, 403.087 FS.
History - New 8-10-95.

62-528.350 Underground Injection Control: Transfer of Permits.

- (1) Transfers by modification. Except as provided in subsection (2) of this section, a permit shall be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as are required by Department rules.
 - (2) Automatic transfers. As an alternative to transfers under subsection (1) of this section, any underground injection control permit for a well not injecting hazardous waste shall be automatically transferred to a new permittee if:
 - (a) The current permittee notifies the Department at least 30 days in advance of the proposed transfer date referred to in paragraph (b) of this subsection;
 - (b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer or permit responsibility, coverage, and liability between them, and the notice demonstrates that the financial responsibility requirements of Rule 62-528.435(9), F.A.C., will be met by the new permittee; and
 - (c) The Department does not notify the existing permittee and the proposed new permittee of the Department's intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective as of the date specified in the agreement mentioned in paragraph (b) of this subsection.
- Specific Authority 373.309, 403.087 FS. Law Implemented 373.308, 403.087 FS.
History - New 8-10-95, Amended 6-24-97.

62-528.355 Underground Injection Control: Permit Modification, Revocation, Termination.

- (1) When the Department receives any information (for example, inspects the facility, receives information submitted by the permittee as required in the permit, receives a request for modification or revocation and reissuance, or conducts a review of the permit file) it will determine whether or not one or more of the causes listed in subsections (2) and (3) of this section for modification or revocation and reissuance or both exist. If cause exists, the Department shall modify or revoke and reissue the permit accordingly, subject to the limitations of subsection (4) of this section, and shall request an updated application if necessary. When a permit is modified, only the

conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term. If cause does not exist under this section, the Department shall not modify or revoke and reissue the permit. If a permit modification is a minor modification pursuant to Rule 62-528.355(5), F.A.C., the permit shall be modified without a draft permit or public review. Otherwise, a draft permit shall be prepared and other procedures in Rules 62-528.310 through .335, F.A.C., shall be followed.

(2) Causes for major modification. The following are causes for modification. For Class I hazardous waste injection wells or Class III wells, the following are causes for revocation and reissuance as well as modification; and for all other wells the following are causes for revocation or reissuance as well as modification when the permittee requests or agrees.

(a) Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different in or absent from the existing permit.

(b) Information. The Department has received information that was not available at the time of permit issuance (other than revised rules, guidance, or test methods) which would have justified the application of different permit conditions at the time of issuance. For multiwell permits, this cause shall include any information indicating that cumulative effects of injection on the environment are inconsistent with this chapter. Permits for Class III wells shall, if necessary to protect waters of the State, be modified during their terms for this cause even if the information was available at the time the permit was issued.

(c) New rules. The rules on which the permit was based have been changed by promulgation of new or amended rules, or by judicial decision after the permit was issued. Permits other than for Class I hazardous waste injection wells or Class III wells shall be modified during their terms for this cause only as follows:

1. For promulgation of amended rules, when:
 - a. The permit condition requested to be modified was based on a promulgated Chapter 62-528 rule; and
 - b. The Department has revised, withdrawn, or modified that portion of the rule on which the permit condition was based; and
 - c. A permittee requests modification within 90 days after publication in the Florida Administrative Weekly of the proposed revised rule upon which the request is based.
2. For judicial decisions, a court of competent jurisdiction has remanded and stayed Department promulgated rules if the remand and stay concern that portion of the rules on which the permit condition was based and a request is filed by the permittee within ninety (90) days of judicial remand.

(d) Compliance schedules. There is good cause for modification of a compliance schedule such as an act of God, strike, flood, or materials shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy.

(3) Causes for modification, termination, or revocation and reissuance. The following are causes to modify, terminate, or, alternatively, revoke and reissue a permit:

(a) Cause exists for termination under 40 C.F.R. pt. 144.40 (1994), and modification or revocation and reissuance is appropriate because modification or revocation and reissuance is consistent with the provisions of this chapter. Causes include:

1. Noncompliance by the permittee with any condition of the permit;
2. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or
3. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.

(b) The Department has received notification of a proposed transfer of the permit. A permit also shall be modified to reflect a transfer after the effective date of an automatic transfer but shall not be revoked and reissued after the effective date of the transfer except upon the request of the new permittee.

(c) A determination that the waste being injected is a hazardous waste as defined in Rule 62-730.030, F.A.C., either because the definition has been revised, or because a previous determination has been changed.

(4) Facility siting. Suitability of the facility location shall not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

(5) Minor modifications of permits. Upon the consent of the permittee and the concurrence of the Department, a permit shall be modified to make the corrections or allowances for changes in the permitted activity listed in this paragraph, without following the procedures of Rules 62-528.310 through .335, and .355, F.A.C. Minor modifications shall only:

- (a) Correct typographical errors;
- (b) Require more frequent monitoring or reporting by the permittee;
- (c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;
- (d) Allow for a change in ownership or operational control of a facility when no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Department;
- (e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification;
- (f) Allow minor changes to construction requirements provided that any such alteration complies with the requirements of this chapter; or

(g) Amend a plugging and abandonment plan which has been updated.
Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.087 FS. History - New 8-10-95, Amended 6-24-97.

62-528.360 Prohibition of Hazardous Waste Injection. (Repealed)
Rulemaking Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.161, 403.721, 403.7222, 403.727 FS. History - New 8-10-95, Repealed 2-16-12.

PART II CRITERIA AND STANDARDS FOR CLASS I AND CLASS III WELLS

62-528.400 General Prohibition of Hazardous Waste Injection.

(1) The injection of hazardous waste through any well or septic system is prohibited except for those Class I wells permitted to inject hazardous waste as of January 1, 1992, or as provided in (2) below.

(2) If a waste being injected into a Class I well is subsequently determined to be a hazardous waste because the definition of a hazardous waste in Chapter 62-730, F.A.C., has been revised, the Department shall initiate modification procedures under Rule 62-4.080, F.A.C., and the permittee shall cease injection into the well upon modification of the permit, unless the waste has been rendered non-hazardous prior to injection. However, if state or federal law or regulation otherwise prohibits continued injection, the Department shall revoke the permit. The conditions of paragraphs (a) through (c) below shall be met during the interim period before the permit in effect expires:

(a) The fluid injected shall not exceed the volume permitted on the date that the waste was determined to be hazardous;

(b) The acidity or alkalinity of the waste stream as measured by pH shall not exceed the limits permitted on the date the injection fluid was determined to be a hazardous waste; and

(c) Concentrations of hazardous constituents in the waste stream shall not increase over those levels permitted on the date the injection fluid was determined to be a hazardous waste. If the concentrations of hazardous constituents are not specified in the permit, the allowable concentration shall be specified by the Department, as described in Rule 62-528.100(2), F.A.C., based on those concentrations present in the waste stream prior to the date the injection fluid was determined to be a hazardous waste.

(3) All hazardous waste injection wells permitted by the Department under the provisions of subsections (1) or (2) above shall be regulated by the Department in accordance with, and maintain compliance with, the provisions of 40 C.F.R. pt. 146, Subpart G (1994), "Criteria and Standards Applicable to Class I Hazardous Waste Wells" and shall be regulated by the U.S. EPA in accordance with 40 C.F.R. pt. 148

(1994), "Hazardous Waste Injection Restrictions." When applicable, the requirements of 40 C.F.R. pt. 144.14 (1994) shall also apply.

(4) No permit shall be renewed or the expiration date extended for any well permitted to receive hazardous waste under the provisions of subsection (2) above unless the waste has been rendered non-hazardous prior to injection.

(5) For each facility permitted under the provisions of (2) above, the permittee shall submit a plan which describes the following:

(a) The process by which the waste will be rendered non-hazardous; or

(b) The alternative disposal method which is to be used in lieu of injection and the method which is to be used to properly plug and abandon the injection well pursuant to Rule 62-528.435, F.A.C.

(6) The permittee shall submit the plan required by (5) above to the Department within 180 days of the date that the injection fluid was determined to be a hazardous waste.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.161, 403.702, 403.721, 403.7222 FS. History - New 5-8-85, Formerly 17-28.20, Amended 4-27-89, Formerly 17-28.200, 62-28.200, Amended 8-10-95, 6-24-97.

62-528.405 Evaluation of Geologic and Hydrologic Environment for Class I and III Wells.

(1) General.

(a) Class I Wells. An applicant for an injection well shall demonstrate that the hydrogeologic environment is suitable for waste injection as provided in Rule 62-528.440(2)(c), F.A.C., and without modifying the ambient water quality of other aquifers overlying the injection zone. In the Class I well construction permit application, the applicant shall address the proposed testing and sampling procedures for adequately defining the depth at which total dissolved solids exceed 10,000 mg/L in formation waters. An assessment of the lateral position at which total dissolved solids exceed 10,000 mg/L in the injection zone waters shall also be provided. The Department shall, when necessary to protect underground sources of drinking water, request that the applicant provide, in addition to site-specific and area of review information, regional information that will allow prediction of the regional impact of the proposed injection well.

(b) Class III Wells.

1. The Department shall evaluate each proposed mining operation for potential effects of the mining activity on the underground sources of drinking water. The Department shall, at a minimum, consider the effects of depressurization of the aquifer on the water quality of any underground source of drinking water. An applicant for a Class III injection well project shall demonstrate that the hydrogeologic environment is suitable for injection for extraction of minerals or energy without endangering the underground sources of drinking water.

2. No Class III mining activity shall be allowed in an underground source of drinking water, or shall result in a violation of ground water standards. If the proposed mining activity is in an underground source of drinking water, an aquifer exemption pursuant to Rule 62-528.300(3), F.A.C., shall be obtained prior to the well being placed into operation.

(2) Confining Zone.

(a) Class I Wells. At least one confining zone above the injection zone is required. The applicant shall demonstrate that the confining zone(s) has sufficient areal extent, thickness, lithologic and hydraulic characteristics to prevent fluid migration into underground sources of drinking water.

(b) Class III Wells. If an underground source of drinking water exists above or below the proposed mining zone, a confining zone is required between the mining zone and the underground source of drinking water. The confining zone must be of such thickness, areal extent, and permeability to constrain the effects of the mining to the mining zone, and the integrity of the confining zone must be maintained for the life of the project.

(c) Testing of Confining Zone for Class I and III Wells. The proposed methodology for testing the confining zone shall be submitted to the Department as part of the permit application. The applicant shall provide sufficient data such as geophysical logs, lithologic cores, physical core analysis, borehole video television surveys, water samples, and drill stem tests (or aquifer tests) to adequately demonstrate the confining characteristics of the bed. A monitoring system is required, which shall include one or more on-site monitor well(s), designed to confirm the long-term effectiveness of the confining zone. The following geophysical logs shall be considered for use in determining if adequate confinement is present:

1. Resistivity log
2. Natural gamma-ray
3. Fluid conductance log
4. Caliper log
5. Static and pumping temperature log
6. Static and pumping spinner flowmeter
7. Acoustic velocity
8. Porosity log

(3) Injection Zone for Class I Wells.

(a) The applicant shall demonstrate that the proposed injection zone has sufficient extent, thickness, lithologic and hydraulic characteristics to adequately receive waste.

(b) The proposed methodology for testing the injection zone shall be submitted as part of the permit application to the Department. The purpose of testing the injection zone is to demonstrate the zone's capacity for receiving injected fluid. The applicant shall demonstrate the suitability of a proposed zone by determining the hydraulic characteristics, lithology, thickness, extent, and compatibility of injection and formation fluids. Testing of the injection zone shall include a pumping injection test at a

flow rate of not less than the maximum design capacity of the well, and of such duration that can demonstrate the trend of the injection pressure on the long-term operating conditions. If an adequate water supply for the injection test does not exist, and the data collected during drilling provide assurance of the presence of confining bed(s), the applicant shall, after demonstrating mechanical integrity pursuant to Rules 62-528.300(6)(b)2. and (c), F.A.C., be allowed to use secondarily treated domestic wastewater effluent after disinfection or desalination concentrate for testing only with specific prior written authorization from the Department as described in Rule 62-528.100(2), F.A.C. Methods to be considered for testing the injection zone include:

1. Water samples
2. Withdrawal tests
3. Video television survey
4. Lithologic cores
5. Drill cuttings
6. Geophysical surveys such as:
 - a. Resistivity survey
 - b. Natural gamma-ray
 - c. Fluid conductance survey
 - d. Caliper survey
 - e. Static and pumping temperature survey
 - f. Static and pumping spinner flowmeter
 - g. Acoustic velocity
 - h. Porosity survey

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.21, 17-28.210, 62-28.210, Amended 8-10-95, 6-24-97.

62-528.410 Well Construction Standards for Class I and III Wells.

- (1) General Design Considerations.
 - (a) All Class I and III wells shall be cased and cemented to prevent the movement of fluids into or between underground sources of drinking water, and to maintain the ground water quality in aquifers above the injection zone that may be used for monitoring or other purposes.
 - (b) All Class I wells shall be designed and constructed so that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.
 - (c) In the design specifications for a Class I well, the applicant shall address the problem of corrosion, proposed protective measure(s), and, when appropriate, proposed methods of monitoring. The applicant shall consider thickness and type of cement, number and thickness of casings, casing material, casing coatings, formation fluid (water) quality, injection fluid quality and life expectancy of the well.
 - (d) For Class I wells all outer surfaces of uncemented casings or portions of casings shall be coated or otherwise protected against corrosion. This protection shall

extend for a minimum distance of thirty feet above and below the uncemented portion of the casing.

(e) All Class I injection wells except those municipal wells (publicly or privately owned) injecting noncorrosive wastes, shall inject fluids through tubing with a packer set immediately above the injection zone, or tubing with an approved fluid seal as an alternative. All existing non-municipal wells constructed without tubing and packer or a fluid seal shall modify their design to incorporate a tubing and packer or fluid seal no later than July 1, 1997, or cease injection unless an alternative to a packer has been approved by the Department under subparagraph 1 below. Existing wells receiving non-municipal waste through a tubing and packer shall not be allowed to remove the tubing and packer as long as injection of non-municipal waste continues unless an alternative to a packer has been approved by the Department under subparagraph 1 below. The tubing, packer, and fluid seal shall be designed for the expected service.

1. The use of other alternatives to a packer shall be allowed with the written approval of the Department. To obtain approval, the applicant shall submit to the Department a written request which shall set forth the proposed alternative and all technical data supporting its use. The Department shall approve the request if the applicant demonstrates that the alternative method will reliably provide a comparable level of protection to underground sources of drinking water.

2. In determining and specifying requirements for tubing, packer, or alternatives, the following factors shall be considered:

- a. Depth of setting;
 - b. Characteristics of injection fluid (chemical content, corrosiveness, and density);
 - c. Injection pressure;
 - d. Annular pressure;
 - e. Rate, temperature and volume of injected fluid; and
 - f. Size of casing.
- (f) For Class I wells the following designs are not allowed:
1. Annuli between casings open to the land surface in any injection well, and
 2. Monitoring tubes emplaced and cemented in the annulus adjacent to the innermost or injection string of casing.

(g) For all Class I wells, the applicant shall address potential surge and water hammer protection to protect the safety and integrity of any injection well system.

(h) Department approval, as described in Rule 62-528.100(2), F.A.C., is required prior to any of the following:

1. Remedial procedures that alter the basic design specifications, materials, or character of a Class I or III well;
2. Any work requiring the complete removal of the wellhead; or
3. Any injection of fluids other than those authorized under the existing permit.

(2) Exploratory Pilot Hole. The Department shall require an exploratory pilot hole in any Class I well, or for Class III wells, at any proposed injection well site, and

shall require that the hole be drilled in stages. The Department shall waive the requirements of this subsection if the applicant can demonstrate that they are not needed to protect underground sources of drinking water and that waiving the requirements will not adversely affect the successful construction or operation of the well.

(3) Drilling. A step-by-step drilling plan shall be included in the design specifications for Class I and III wells. The drilling plan shall specify the proposed drilling program, sampling, coring, and testing procedures, and is subject to Department approval.

(a) For Class I wells, a deviation survey shall be run in the pilot hole at least every ninety feet (every three joints) of the portion of the well which is to be cased and at more frequent intervals when necessary to ensure that the casing can be set and centered for cementing. The maximum deviation at each measurement shall not exceed one degree deviation from vertical. The Department recognizes that the design requirements in this section are not necessary in all cases. The Department shall modify these requirements in the construction permit provided that the applicant submits proof that such modification will not adversely affect the successful construction and future operation of the well.

(b) For Class I wells, the Department shall require directional surveys, if, after an analysis of the well design and drilling program, it is needed to verify that the reamed hole has followed the pilot hole. The directional survey shall be conducted during drilling or in the pilot hole and the reamed hole as separate surveys before installation of the casing.

(c) The Department shall require the applicant to demonstrate that when salt is used for density control during drilling it will not adversely affect the establishment of background water quality for monitoring purposes.

(4) Casings.

(a) The casings used in the construction of each newly drilled Class I and III well shall be designed for the life expectancy of the well, and shall be new and unused for Class I wells.

(b) The number, thickness, type of materials, and length of casing shall be sufficient to protect the quality of drinking water resources and the integrity of the well and the confining strata. The final string of casing shall be made of seamless mild steel pipe having a minimum 0.500 inch wall thickness. An applicant who proposes to use pipe composed of other than 0.500 inch wall seamless mild steel for the final casing shall demonstrate that the proposed material and thicknesses will not compromise the integrity or operation of the well.

(c) Exact setting depths of all casings or tubing shall be determined from field data, based on all available information. Department approval shall be obtained prior to installation of the injection casing and the casing which extends to the base of the underground source of drinking water. In order to obtain approval, the permittee shall submit a request to the Department. The Department shall approve the request if the

proposed setting depth of the casing or tubing meets the requirements of this Chapter and will not adversely affect the operation of the injection well.

(5) Cementing.

(a) The applicant shall submit the proposed cementing program with the design specifications for Class I or III wells. The cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:

1. Depth to the injection zone;
2. Injection pressure, external pressure, internal pressure, and axial loading;
3. Hole size;
4. Size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);
5. Corrosiveness of injected fluid, formation fluids, and temperatures;
6. Lithology of injection and confining zones; and
7. Type or grade of cement.

(b) Cement must be compatible with the injection fluid, native fluids, and the formation, but in no case less than the quality of American Society of Testing and Materials Type 2 or its equivalent (Standard Specification for Portland Cement, American National Standards Institute/American Society of Testing and Materials C 150-94, 1994, which is incorporated herein by reference).

(c) Applicants shall submit with the design specifications, a list of cement additives which may be needed in the operation. If an additive is not in the design specifications, the applicant shall obtain prior approval for its use from the Department, as described in Rule 62-528.100(2), F.A.C. Accurate records shall be kept and all additives used shall be reported.

(d) During drilling, the use of cement additives approved in (c) above, water/cement ratio, and the type of water used for mixing shall be determined by the applicant, provided the integrity, containment, corrosion protection, and structural strength of the cement are not significantly affected.

(e) Prior to cementing, the hole shall be conditioned to create optimum bonding of the cement to the casing and formation and to prevent channeling.

(f) Cement placement shall be in such a manner that the purposes and characteristics of the cement are retained, and shall be in accordance with "AWWA Standard for Water Wells", American Water Works Association A100-90, 1990, which is incorporated herein by reference.

(g) The applicant shall submit his cement testing program with the permit application. The purpose of the cement testing program is to ensure that the cement seal is adequate to prevent migration of fluids in channels, microannular space, or voids in the cement. The methods of testing include:

1. Temperature Survey - shall be run within forty-eight hours after cementing;
2. Cement Evaluation Survey.

(h) During cementing, adequate pressure differentials shall be maintained to prevent collapse or distortion of the casing.

(i) Class I wells.

1. The final string of casing shall have a nominal overdrill of ten inches unless the applicant can affirmatively demonstrate that an overdrill of not less than five inches is sufficient. The annulus surrounding the final string of casing shall have a nominal five inch cement thickness from the bottom of the casing to land surface. The Department recognizes that these design requirements may not be necessary in all cases. The Department shall modify these requirements in the construction permit if the applicant submits proof that such modification will not adversely affect the successful construction and future operation of the well in such a way as to threaten an underground source of drinking water with contamination.

2. The remaining casings shall have a minimum thickness of 2.500 inches of cement surrounding the casings with not less than five inches of overdrill. A nominal ten inch overdrill shall be required with any intermediate string of casing for which an annular monitor tube of up to 2.375 inches maximum outer diameter is to be emplaced. Commensurate increases in the overdrill shall be required for monitor tubes larger than 2.375 inches in outer diameter.

3. The applicant shall include with the cementing program a centralizing program for the purpose of centralizing the casing, to provide adequate annular space around the casing for proper cementing.

(6) Testing During Drilling and Construction of New Class I Wells.

(a) Geophysical surveys and other tests shall be conducted during the drilling and construction of new Class I wells. A descriptive report interpreting the results of such geophysical surveys and tests shall be presented to the Technical Advisory Committee during in-progress reviews, as part of periodic progress reports, or in letter form as appropriate. Such reports shall include field copies of the surveys and test data and analysis results at the level required to support field decisions made during drilling or proposed during in-progress reviews. Such surveys and tests shall include:

1. Deviation checks shall be in accordance with Rule 62-528.410(3), F.A.C. Such checks shall be at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

2. Such other geophysical surveys and tests as are needed after taking into account the availability of similar data in the area of the drilling site, the construction plan, and the need for additional information that may arise as the construction of the well progresses. In determining which geophysical surveys and tests shall be required, the following geophysical surveys shall be considered for use in the following situations:

a. For surface casing intended to protect underground sources of drinking water a resistivity, sonic survey, gamma ray, spontaneous potential, and mechanical or sonar caliper surveys before the casing is installed, and a cement evaluation or temperature survey after the casing is set and cemented.

b. For intermediate and long strings of casing intended to facilitate injection a resistivity, spontaneous potential, porosity, fracture finder surveys and gamma ray

surveys before the casing is installed, and a cement evaluation, temperature, or density survey after the casing is set and cemented.

c. For Class I wells in which an annular monitor tube is proposed for other than the final or innermost casing a caliper survey in the reamed hole which is to contain the monitor tube and, a temperature survey in the monitor tube after the monitor tube has been set and cemented.

(b) The following information concerning the injection formation shall be determined or calculated for new Class I wells:

1. Fluid pressure;
2. Temperature;
3. Fracture pressure;
4. Other physical and chemical characteristics of the injection matrix; and
5. Physical and chemical characteristics of the formation fluids.

(7) Testing of Completed Class I Wells. Upon completion of construction, the completed wells shall be tested to assure that the wells will function as built. Tests to be performed include:

(a) Cement evaluation survey;

(b) Temperature survey;

(c) Pressure test of the final casing to at least 1.5 times the expected injection pressure or 50 pounds per square inch, whichever is greater, for one hour, with a change in pressure of no more than five percent from the initial test pressure;

(d) Video television survey - from top to bottom of the well for baseline monitoring purposes;

(e) Injection tests;

(f) Withdrawal tests - if necessary and if possible;

(g) Caliper survey; and

(h) Radioactive tracer survey.

(8) Testing of Class III Wells.

(a) Geophysical surveys and other tests shall be conducted during the drilling and construction of new Class III wells. Upon completion of construction, the completed well system shall be tested to assure that the well system will function properly at the designed operation pressures. A descriptive report interpreting the results of such surveys and tests shall be prepared and submitted to the Department. The surveys and tests appropriate to each type of Class III well shall be determined based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information as the construction of the well progresses. Such surveys and tests shall include deviation checks conducted on all holes where pilot holes and reaming are used, at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

(b) Where the injection zone is a water bearing formation, the following information concerning the injection zone shall be determined or calculated for new Class III wells:

1. Fluid pressure;
 2. Temperature;
 3. Fracture pressure;
 4. Other physical and chemical characteristics of the injection zone;
 5. Physical and chemical characteristics of the formation fluids; and
 6. Compatibility of injected fluids with formation fluids.
- (c) Where the injection formation is not a water bearing formation, the information in subparagraphs (b)3. and (b)4. of this subsection shall be submitted.
- (9) Environmental Concerns During Construction.
- (a) For Class I and III wells, the disposal of drilling fluids or cuttings and the disposal of formation water or waste during testing shall be done in a sound environmental manner that avoids violation of surface and ground water quality standards. The applicant shall submit the proposed disposal methods with the permit application.
- (b) For Class I wells the use of drilling pads is required. The pads shall be designed to collect spillage of contaminants and to support the heaviest load that will be encountered during drilling. At locations where the unconfined aquifer contains less than 10,000 mg/L total dissolved solids, monitor wells capable of detecting any contamination of the unconfined aquifer from drilling activities shall be required.
- (c) For Class I wells, flow control shall be used when drilling into formations in which pressure heads exceed land surface, to prevent uncontrolled release of formation or drilling fluids at land surface.
- (d) For Class III wells, the applicant is advised that other permits may be required for surface facilities associated with the mining activity.
- Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.22, 17-28.220, 62-28.220, Amended 8-10-95, 6-24-97.

62-528.415 Operation Requirements for Class I and III Wells.

- (1) Class I Well Operation Requirements. Operation requirements for Class I wells shall specify that:
- (a) To preserve the integrity of the formations, bottom hole (including hydrostatic) pressure shall not exceed a maximum so as to ensure that the injection pressure does not initiate new fractures or propagate existing fractures in the injection zone, initiate fractures in the confining zone, significantly alter the fluid containment capabilities of the confining zone, or cause the movement of injection or formation fluids into an underground source of drinking water or into an essential monitoring zone;
 - (b) To protect the integrity of the well structure, total pressure shall not exceed the maximum allowable stress of the materials used to construct the well;
 - (c) The maximum sustained injection pressure shall not exceed two-thirds of the most recent mechanical integrity test pressure.
 - (d) Injection for disposal purposes is prohibited:

1. Between the casings protecting the underground sources of drinking water and the well bore;
2. Through monitor wells or annular monitor tubes, or;
3. Through wells designed to monitor the injection zone except when specifically designed as a temporary or standby injection well or approved (in writing) for emergency discharge use.

(e) Unless an alternative to a packer has been approved under Rule 62-528.410(1)(e)1., F.A.C., the annulus between the tubing, where required, and the final or innermost string of casing shall be filled with a fluid and a pressure shall be maintained on the annulus. Both the type of fluid and the proposed pressure shall be submitted as part of the construction permit approved by the Department;

(f) Injection Fluid Velocity.

1. The maximum velocity of injected fluid shall not exceed the point where the mechanical limits of the well design or structure of the formation will be adversely affected.

2. Except as provided in 3. below, the maximum injection velocity of a well that begins operation after June 1, 1985, shall not exceed a peak hourly flow of ten feet per second (ft/sec), unless the applicant demonstrates that higher velocities will not compromise the integrity or operation of the well.

3. An injection system may be designed to allow an injection velocity not to exceed a peak hourly flow of 12 ft/sec during planned testing, maintenance, or emergency conditions when one or more wells are taken out of service if the permittee provides the Department with reasonable assurance that the higher velocities will not compromise the integrity or operation of the well(s).

(2) Class III Well Operation Requirements. Operation requirements prescribed for Class III wells shall specify that:

(a) Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone, initiate fractures in the confining zone or cause the migration of injection or formation fluids into an underground source of drinking water; and

(b) Injection between the casings protecting underground sources of drinking water and the well bore is prohibited;

(c) Where the proposed mining operation includes mining a portion of the confining zone, a sufficient amount of confining zone must remain to provide an effective confinement that protects aquifers above and below the mining area.

(3) Operation and Maintenance Manual.

(a) An operation and maintenance manual(s) for injection well disposal facilities, or portions thereof, shall be prepared for the use of operators, maintenance personnel, technicians, laboratory personnel, and others as appropriate, and shall consist of:

1. Written instructions provided to the injection system operators which specify:

- a. Procedures for the safe reliable operation of the system; and
 - b. Procedures to be used in the event of an emergency.
 2. Records of the basic engineering design and equipment description; and
 3. A program to assure proper maintenance of the system.
- (b) The operation and maintenance manual(s) is subject to approval by the Department under Rule 62-4.240, F.A.C., prior to issuance of a permit and shall be submitted to the Department.
- (c) A copy of the approved manual shall be provided to the operators, maintenance personnel, technicians, laboratory personnel, and others as appropriate, by the permittee of the facility. The manual(s) shall be available for reference at the facility or other site readily available to the operator.
- (d) The manual shall be revised to reflect any facility modifications performed in order to comply with the requirements of this Chapter or to reflect experience resulting from facility operation.
- (4) Abnormal Events.
- (a) In the event the permittee is temporarily unable to comply with any of the conditions of a permit due to breakdown of equipment, power outages, destruction by hazard of fire, wind, or by other cause, the permittee of the facility shall notify the Department. Notification shall be made in person, by telephone, or by telegraph within 24 hours of breakdown or malfunction to the office of the Department that issued the permit.
- (b) A written report of any noncompliance referenced in (a) above shall be submitted to the appropriate district office within five days after its occurrence. The report shall describe the nature and cause of the breakdown or malfunction, the steps being taken or planned to be taken to correct the problem and prevent its reoccurrence, emergency procedures in use pending correction of the problem, and the time when the facility will again be operating in accordance with permit conditions.
- (c) Emergency Discharge.
1. Under emergency conditions in which the permittee is unable to use the permitted primary disposal method, the permittee shall use an emergency discharge only if a permit for the emergency method has been obtained prior to the emergency discharge. The permittee shall notify the Department office that issued the permit whenever the emergency discharge has been used.
 2. The applicant shall address the emergency disposal methods in the construction permit application and the operation manual. The emergency discharge shall be fully operational and the permittee for a Class I well shall obtain all permits required to operate the emergency discharge prior to any emergency discharge.
- (d) In the event a well must be redeveloped, the applicant shall address disposal of backwashed fluids in a written submittal to the Department. The redevelopment of the well, including the disposal method, shall be approved by the Department in writing if it meets all applicable Department rules and it will not adversely affect the construction or operation of the well.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.23, 17-28.230, 62-28.230, Amended 8-10-95, 6-24-97.

62-528.420 Monitoring Well Construction Standards for Class I and III Wells.

- (1) General Design Considerations.
 - (a) For Class I wells, associated on-site, cluster, multihorizon, or annular monitoring wells shall not penetrate the injection zone or final confining bed.
 - (b) For satellite and regional monitor wells associated with Class I wells, cluster or multihorizon monitoring wells shall be allowed to penetrate the injection zone or final confining bed only if the applicant demonstrates that the underground sources of drinking water and confining strata will be protected, the integrity of the monitoring and injection well system will be protected, and the well is designed in such a way that it can be easily repaired.
 - (c) All monitoring wells constructed for Class III injection operations shall be constructed in accordance with Chapter 62-532, F.A.C.
 - (d) Department approval by permit modification is required prior to any remedial procedures that alter the basic design specifications.
- (2) Exploratory Pilot Hole. For Class I wells, the Department shall require an exploratory pilot hole and shall require that the hole be drilled in stages. The Department shall waive the requirements of this subsection if the applicant can demonstrate that they are not needed to protect underground sources of drinking water and that waiving the requirements will not adversely affect the successful construction or operation of the monitor well.
 - (3) Drilling. The Department shall require that a step-by-step drilling plan be submitted with the design specifications.
 - (4) Casings and Tubing.
 - (a) The casings or tubing used in the construction of each newly drilled well shall be designed for the life expectancy of the well.
 - (b) The number, thickness, type of material, and length of casing or tubing shall be sufficient to protect the quality of drinking water resources and the integrity of the well and the confining strata. The type of materials used in the monitoring well shall not bias the sampling parameters used in the monitoring program.
 - (c) Exact setting depths for all casings or monitor tubing shall be determined from field data, based on all available information. Department approval shall be obtained prior to installation of the monitor casing. In order to obtain approval, the permittee shall submit a request to the Department. The Department shall approve the request if the proposed setting depth of the casing or tubing meets the monitoring requirements of this Chapter and will not adversely affect the operation of the injection well.
- (5) Cementing.

(a) The applicant shall submit the proposed cementing program with the design specifications. The cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. The applicant shall submit a list of proposed additives with the construction permit application.

(b) Cement must be compatible with the native fluids and the formation, but in no case less than the quality of American Society for Testing and Materials Type 2 or its equivalent (Standard Specification for Portland Cement, American National Standards Institute/American Society for Testing and Materials C 150-94, 1994).

(c) Cement placement shall be in such a manner that the purposes and characteristics of the cement are retained, and shall be in accordance with "AWWA Standard for Water Wells", American Water Works Association A100-90, 1990.

(d) The applicant shall submit his cement testing program with the permit application for Department approval.

(e) For Class I monitor wells other than annular monitor wells, a nominal thickness of 2.5 inches of cement surrounding the casings with not less than five inches of overdrill is required, except for the annulus being used for monitoring in wells with open annulus monitoring.

(f) All casings and tubing shall be centralized where possible to ensure uniform cementing.

(g) All outer surfaces of casing or tubing which are uncemented shall be protected from corrosion for a minimum of thirty feet above and below the uncemented portion.

(6) Testing of Monitoring Well Construction. Tests to be considered by the applicant shall include:

(a) Cement evaluation survey,

(b) Temperature survey,

(c) Oxygen activation log,

(d) Noise log,

(e) Pressure test to at least 1.5 times the expected ultimate monitoring pressure but not less than 50 pounds per square inch for one hour.

(f) A pumping test to determine if the monitor well has sufficient capacity to yield a representative ground water sample.

(g) Chemical analyses of water from strata tapped by well.

(h) Water level measurement referenced to National Geodetic Vertical Datum (NGVD) of 1929.

Specific Authority 403.061, 403.087 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.24, 17-28.240, 62-28.240, Amended 8-10-95.

62-528.425 Monitoring Requirements for Class I and III Wells.

(1) Class I Wells. For Class I wells, monitoring requirements shall include:

(a) The analysis of the injected fluids at a frequency specified in the permit to yield representative data on their characteristics;

(b) The installation and use of continuous indicating, recording, and totalizing devices to monitor flow rate and volume, and installation and use of continuous indicating and recording devices to monitor the injection pressure and the pressure on the annulus between the tubing and the final or innermost string of casing, if there is an annulus,

(c) A controlled injection test or a bottom hole pressure survey, if a long-term trend of increasing injection pressure is indicated.

(d) A demonstration of mechanical integrity pursuant to Rule 62-528.300(6), F.A.C., at least once every five years during the life of the well; and

1. As part of the baseline monitoring information, a video television survey from the surface to the bottom of the injection zone shall be run prior to injection but after completion of testing, except for those wells that inject through tubing or where it is physically impossible to do so, and every five years thereafter, or more frequently if impairment of the integrity of the casing, tubing, or formation is suspected based on physical or geochemical data such as water quality, pressure changes, or mechanical integrity results.

2. The television survey may be either black and white or color.

3. Adequate provisions shall be made to centralize the camera in the borehole.

4. Before running the survey, adequate provisions shall be made to assure that fluid in both the casing and open borehole is of sufficient clarity to provide a baseline survey of a quality acceptable to the Department.

(e) An application to construct or operate a Class I well, and such permit shall address the following:

1. The type, number, and location of well(s) within the area of review to be used to monitor:

a. Any potential migration of fluids into or in the direction of underground sources of drinking water, and

b. Pressure in the underground sources of drinking water;

2. The parameters to be measured; and

3. The frequency of monitoring.

(f) The background water quality of the injection zone and the monitoring zone(s) shall be determined prior to injection for both domestic wastewater wells and industrial Class I wells (including desalination process reject water), in accordance with the sampling and testing methods outlined in Rule 62-601.400, F.A.C. Background levels shall be determined pursuant to the following criteria:

1. For monitor zones in Class G-I, F-I, G-II or G-III ground waters the primary and secondary drinking water quality parameters listed in Rules 62-550.310 and .320, F.A.C., and the minimum criteria provided in Rule 62-520.400, F.A.C.

2. For the injection zone and monitor zones in G-IV ground water the criteria shall be established in accordance with Rule 62-520.440, F.A.C.

(g) The Department shall require monitor wells above the injection zone near the injection well, field or project.

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1. The permittee shall be able to monitor the following:
 - a. The absence of fluid movement adjacent to the well bore, and;
 - b. The long-term effectiveness of the confining zone.
 2. Monitor wells used to meet the requirements of subparagraph 1. above shall be sampled periodically. The frequency of sampling and constituents to be analyzed shall be specified in the permit and shall be representative of the monitored activity.
 3. Monitor wells used to meet the requirements of 1.a. above shall be located within 150 feet of the injection well unless the applicant can demonstrate, through a hydrogeologic study, that a monitor well located at a greater distance will be capable of adequately monitoring fluid movement adjacent to the borehole.
 4. The permittee shall monitor a zone below the base of the underground source of drinking water, if a zone is available, and at least one zone within, and near the base of, the underground source of drinking water.
 5. The Department shall also require any of the following when needed to provide reasonable assurance that the requirements of 1. above are being met:
 - a. Continuous monitoring for pressure changes in the first aquifer overlying the confining zone.
 - b. Continuous monitoring for pressure changes in any monitor well constructed under subparagraph 1. above,
 - c. Periodic monitoring of ground water quality in the first aquifer overlying the injection zone,
 - d. Periodic monitoring of ground water quality in the lowermost underground source of drinking water.
 - e. Periodic additional monitoring to determine whether fluid movement caused by underground injection activity is occurring into or between underground sources of drinking water.
 - (h) The Department shall require monitor wells above and in the injection zone at a sufficient distance from the well, field, or project for regional monitoring if such monitoring is necessary to protect waters of the State.
 - (i) When direct monitoring required under paragraph (g) above can not be provided or the results of such monitoring fails to provide reasonable assurance, the Department shall require the additional use of indirect geophysical techniques and computer modeling or such other techniques capable of providing reasonable assurance as to:
 1. The position of the waste front,
 2. The water quality in a formation or zone, or
 3. Other site specific data.
 - (j) For Class I wells, a five gallon unacidized representative sample of native water from the injection zone shall where practical be collected and provided to the Florida Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 or a laboratory specified by the Department.
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(k) Post-closure Monitoring. For Class I wells, if necessary to protect underground sources of drinking water the permit applicant shall be required to submit a post-closure monitoring plan designed to monitor the attenuation of any pressure effects and water quality changes caused by the underground injection operation both in the injection zone or in overlying aquifers. The proposed monitoring plan shall at a minimum use the injection wells and associated monitor wells, to the extent that they are capable of yielding representative ground water samples. The proposed monitoring plan may also include other accessible wells.

1. Items to be addressed by the permit applicant in the proposed post-closure monitoring plan shall include:

- a. Designation of the wells to be used for post-closure monitoring;
- b. The parameters to be monitored, by well;
- c. The sampling frequency;
- d. The proposed duration of the post-closure monitoring period; and
- e. A documented estimate of the total cost of the post-closure monitoring program.

2. A revision of the post-closure monitoring plan shall be required by the Department when needed to reflect changes in the design or scope of the underground injection operation, inflation of costs associated with the plan, or other factors resulting from the construction or operation of the injection well system. The permittee also may initiate modification of the post-closure monitoring plan.

(2) Class III Wells. For Class III wells, monitoring requirements shall specify:

(a) The analyses of the physical and chemical characteristics of the injected fluid with sufficient frequency to yield representative data on its characteristics;

(b) Installation and use of continuous recording devices to monitor the injection pressure, flow rate and volume;

(c) The demonstration of mechanical integrity pursuant to Rule 62-528.300(6), F.A.C., at least once every five years during the life of the well;

(d) Weekly monitoring of fluid level and of the parameters chosen to measure water quality in the injection zone with sufficient frequency to yield representative data on its characteristics;

(e) Quarterly monitoring of wells adjacent to the injection site to detect any migration from the injection zone into an underground source of drinking water;

(f) All Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well operating with a common manifold. Separate monitoring systems for each well are not required provided the permittee demonstrates that manifold monitoring is comparable to individual well monitoring;

(g) The applicant shall continue monitoring after mining operations cease if site-specific factors or operational monitoring results indicate that there is a threat to an underground source of drinking water. Such monitoring shall continue until no threat

remains. If the monitoring reveals violations, the permittee shall investigate and take corrective action.

(h) Monitoring Criteria.

1. Where injection is into a formation which contains water with less than 10,000 mg/L total dissolved solids, monitoring wells shall be completed into the injection zone and into any underground sources of drinking water which could be affected by the mining operation. These wells shall be located as to detect any excursion of injected fluids, process by-products, or formation fluids outside the mining area or zone. If the operation may be affected by subsidence or catastrophic collapse, the monitoring wells shall be located so that they will not be physically affected.

2. Where injection is into a formation which does not contain water with less than 10,000 mg/L total dissolved solids, monitoring wells shall be required above and in the injection zone if necessary to protect underground sources of drinking water.

3. Where the injection wells penetrate an underground source of drinking water in an area subject to subsidence or catastrophic collapse an adequate number of monitoring wells shall be completed into the underground source of drinking water to detect any movement of injected fluids, process by-products or formation fluids into the underground source of drinking water. The monitoring wells shall be located outside the physical influence of the subsidence or catastrophic collapse.

4. The Department shall require monitoring for subsidence if necessary to protect property or underground sources of drinking water.

(i) In determining the number, location, construction and frequency of monitoring of the monitoring wells, the following criteria shall be used:

1. The population relying on the underground source of drinking water affected or potentially affected by the injection operation;

2. The proximity of the injection operation to points of withdrawal of drinking water;

3. The local geology and hydrology;

4. The operating pressures and whether a negative pressure gradient is being maintained;

5. The toxicity and volume of the injected fluid, the formation water, and the process by-products; and

6. Number of injection wells per unit area.

Specific Authority 403.061, 403.087 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.25, 17-28.250, 62-28.250, Amended 8-10-95, 6-24-97.

62-528.430 Reporting Requirements for Class I and III Wells.

(1) Class I Test/Injection Well Construction Permit.

(a) The Department shall require periodic data reports and progress reports that include:

1. Driller's log

2. Geophysical surveys

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3. Core analyses
 4. Lithologic Logs
 5. Drill stem tests
 6. Pump tests
 7. Daily job (construction) reports
 8. Water quality analyses.
- (b) The frequency of reporting shall be specified in the individual permit.
- (c) Interpretation of data is required in the data reports or progress reports at the completion of each significant phase of construction, such as completion of test well construction and testing, completion of injection well construction, and completion of injection well testing.
- (d) The permittee shall provide direct distribution of the data reports, progress reports, and final reports to members of the Technical Advisory Committee.
- (e) The applicant shall submit final reports of all data collected from the test injection well with interpretations, to the Department with the application for a Class I Test/Injection Well Construction and Testing Permit and a Class I Injection Well Operation Permit. The final report submitted with the application for a Class I Injection Well Operation Permit shall include all information and data collected under Rule 62-528.450(2) and (3), F.A.C., with appropriate interpretations.
- (2) Class I Injection Well Permit.
- (a) The applicant shall submit, as part of the permit application, the proposed methodology for collection and reporting of operational data, to ensure that the data is collected, correlated, and reported in a fashion that would enable the Department to evaluate well performance.
- (b) All Class I wells shall report monthly the following:
1. Operating reports to the Department on:
 - a. The physical, chemical, and other relevant characteristics of injection fluids;
 - b. Daily readings of the pressure and flow for each well. For each domestic effluent disposal well, a specific injectivity test shall be performed quarterly;
 - c. Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and
 - d. The results of monitoring prescribed under Rule 62-528.425(1)(e), F.A.C.
 2. Reporting the results, within three months after the completion of:
 - a. Periodic tests of mechanical integrity;
 - b. Any other test of the injection well conducted by the permittee if required by the Department; and
 - c. Any well work over.
- (c) Additional reporting requirements for wells injecting fluids from a domestic wastewater facility shall be in accordance with chapter 62-601, F.A.C.
- (d) Specific injectivity testing shall be performed while the pumping rate to the well(s) has been set at a predetermined level and reported as the specific injectivity index (gpm/specific pressure (psig)). As part of this test, the well shall be shut-in for a

period of time necessary to conduct a valid observation of pressure fall-off. The applicant shall propose which pumping rate will be used based on the expected flow, the design of the pump station including the volume of the wet well and pump type(s), and the type of pump controls used. The pumping rate(s) shall be included as a condition of the operation permit. For Class I wells, other than municipal wells the permittee shall conduct one pressure fall-off test annually.

(e) If physical or geochemical data such as water quality, pressure changes, or mechanical integrity test results indicate that fluid movement into or between underground sources of drinking water may be occurring, the permittee shall submit additional data to provide reasonable assurance that the injection operation is in compliance with the requirements of this chapter. This additional data shall be submitted with the periodic operations reports, the content and frequency of which are specified in the individual permit.

(f) A Class I well permit shall be written to require that if Rule 62-528.300(5)(c)1, F.A.C., is applicable, progress reports shall be submitted no later than thirty days following each interim date and the final date of compliance.

(3) Class III Well Construction/Operation/Plugging and Abandonment Permit.

(a) The Department shall require monthly operation reports and progress reports that include the following:

1. Driller's log
2. Geophysical surveys
3. Core analyses
4. Lithologic logs
5. Drill stem tests
6. Withdrawal or aquifer tests
7. Number of wells constructed, abandoned, in operation, and recorded on property deeds

8. Results of post-closure monitoring
9. Daily construction reports

(b) Interpretation of data is required in the data reports or progress reports at the completion of each significant phase of construction.

(c) The Department shall require that the applicant provide direct distribution of the data reports and progress reports to members of the Technical Advisory Committee.

(d) Reporting Requirements. Reporting requirements shall include:

1. Quarterly reporting to the Department on required monitoring;
2. Results of mechanical integrity and any other periodic test required by the

Department reported with the first regular quarterly report after the completion of the test; and

3. The Department shall allow monitoring to be reported on a project or field basis rather than individual well basis where manifold monitoring is used and if such reporting is adequate to protect waters of the State.

(e) At least once every year, but more frequently if specified in the permit, the permittee shall record with the property records of the county courthouse the plugging method and location of each well abandoned during that year.

(f) The permittee shall submit a final report of all data collected with interpretations, to the Department with the application for permit renewal. The final report shall include all information and data collected under Rule 62-528.450(2) and (3), F.A.C., with appropriate interpretations.

(4) Abandonment Reports for Class I and III Wells. Within 90 days after completion of plugging and abandonment of a well or well field the permittee shall submit to the Department a final report which includes:

(a) Certification of completion in accordance with approved plans and specifications by the engineer of record;

(b) Evidence, such as a sealed copy or certification from the county clerk, that a surveyor's plot of the location of the abandoned wells has been recorded in the county courthouse property records.

Specific Authority 403.061, 403.087, 403.704 F.S. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.161, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.26, 17-28.260, 62-28.260, Amended 8-10-95, 6-24-97.

62-528.435 Plugging and Abandonment Criteria and Procedures for Class I and III Wells.

(1) Upon determination by the Department that a well poses a threat to waters of the State or within one year of determining that a well has been abandoned, the Department shall order the well plugged, unless otherwise provided for in a consent order.

(2) Any Class I or III permit shall include conditions to ensure that plugging and abandonment of the well will not allow the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another. These conditions shall include mechanical integrity testing prior to plugging of the injection well, or monitor well which penetrates the injection zone or final confining unit, if fluid movement through channels adjacent to the injection well bore is suspected. Any applicant for an underground injection control permit shall be required to submit a plan for plugging and abandonment, which shall address post-closure monitoring of the injection operation. The post-closure monitoring plan shall be designed in accordance with the requirements of Rule 62-528.425(1)(j), F.A.C. Where the plan meets the requirements of this Chapter, the Department shall incorporate it into the permit as a condition. Where the Department's review of an application indicates that the permittee's plan is inadequate, the Department shall require the applicant to revise the plan, prescribe conditions meeting the requirements of this Chapter, or deny the application. Where applicable, the plugging and abandonment plan shall address the proposed post-closure monitoring.

(3) Prior to abandoning Class I or III wells, the well shall be plugged with cement, or other materials if a Class III well, in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. To use other plugging materials for Class III wells, the applicant shall demonstrate in the plugging and abandonment permit application that the proposed plugging materials will prevent movement of fluids into or between underground sources of drinking water.

(4) Placement of the plugging material shall be accomplished by one of the following methods:

(a) The Balance Method;
(b) The Dump Bailer Method;
(c) The Two-Plug Method; or
(d) Any other recognized method which is as effective or more effective than those listed above for the placement of plugging material in a manner that will not allow fluid movement to occur into or between underground sources of drinking water.

(e) For wells with an open hole completion, the cement shall be emplaced beginning at the deepest point required in the permit and upward to land surface or other method approved by the Department following the process described in Rule 62-528.100(2), F.A.C.

(5) The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized from top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Department, prior to the placement of the cement plug(s).

(6) The permittee shall notify the Department at least 180 days before conversion or abandonment of a Class I well, unless abandonment within a lesser period of time is necessary to protect the waters of the State.

(7) For all Class I wells, after removal of the tubing and packer (if applicable), the final or innermost string of casing shall be filled with neat cement grout or an approved equivalent from a depth of at least 10 feet below the bottom of the casing to land surface. Annular monitor tubes in an injection well are allowed to be left unplugged temporarily if they are to be used for their intended purpose and do not compromise the objectives listed above. If temporarily left open, the annular monitor tubes shall be plugged with cement at the end of post-closure monitoring. If the tubes are not used for monitoring, they shall be filled with neat cement from the bottom of the monitor zone to land surface.

(8) The plugging and abandonment plan required in Rules 62-528.435 and .460, F.A.C., shall, in the case of a Class III well field which underlies or is in an aquifer which has been exempted under Rule 62-528.300(3), F.A.C., also demonstrate that no movement of contaminants from the mined zone into an underground source of drinking water will occur. The Department shall prescribe aquifer cleanup and monitoring where necessary and feasible to ensure that no migration of contaminants from the mined zone into an underground source of drinking water will occur.

(9) Financial Responsibility. The permit shall require the permittee to demonstrate and maintain financial responsibility and resources necessary in the form

of performance bonds or other equivalent form of financial assurance approved as described in (b) below, to close, plug, and abandon the underground injection operation.

(a) Class I hazardous waste wells shall comply with the financial responsibility requirements of 40 C.F.R. pt. 144 Subpart F (1994).

(b) For Class I wells used to inject non-hazardous fluids these requirements are specified in the Department's document "State of Florida Underground Injection Control Program Financial Responsibility Options for Owners and Operators of Injection Wells" (1996), which is incorporated herein by reference, and which may be obtained by writing to the Division of Water Resource Management, Department of Environmental Protection, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. In lieu of individual financial guarantees, the applicant shall furnish a financial guarantee covering all the applicant's injection wells in this State. The Department shall require a certificate showing that the applicant has assured, through a performance bond or other appropriate means, that resources necessary to cover post-closure monitoring and any corrective action resulting from this monitoring have been provided.

(10) In the event a radioactive source tool has been irretrievably lost down an injection well, the Department shall be immediately notified. The well shall not be plugged until all applicable Nuclear Regulatory Commission regulations have been satisfied.

(11) Within 90 days after completion of plugging and abandonment the permittee of a well shall provide documentation that the well was properly abandoned. Specific Authority 403.061, 403.087 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.161 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.27, 17-28.270, 62-28.270, Amended 8-10-95, 6-24-97.

PART III CLASS I WELL AND CLASS III WELL PERMITTING

62-528.440 General Permitting Requirements for Class I and III Wells.

(1) Permitting Authority. The Florida Department of Environmental Protection is the administering agency for the underground injection control rule and requires permits for all Class I and III wells. However, this does not absolve the permittee from obtaining permits, where necessary, from other state agencies, water management districts, or local programs nor relieve the permittee of the responsibility for obtaining such permits.

(2) General Prohibitions.

(a) Any underground injection through a Class I or III well is prohibited, except as authorized by permit under this Chapter.

(b) Permits for any construction, modification (including hydrogeological modifications to the monitoring system), operation (except for testing purposes as authorized by the construction permit), or abandonment of Class I and III wells shall be obtained before such activities are commenced.

(c) Except as provided in 40 C.F.R. 146.15 and 146.16, as noticed in the *Federal Register*, Vol. 70, No. 224, November 22, 2005, pp. 70513 – 70532, hereby adopted and incorporated by reference, no underground injection activity shall be authorized where a Class I or III well causes or allows movement of fluid into underground sources of drinking water, if such fluid movement may cause a violation of any primary drinking water standard under 40 C.F.R. pt. 141 (1994), or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.

(d) Except as provided in 40 C.F.R. 146.15 and 146.16, as noticed in the *Federal Register*, Vol. 70, No. 224, November 22, 2005, pp. 70513 – 70532, for Class I and III wells, if any water quality monitoring of an underground source of drinking water indicates the movement of injection or formation fluids into underground sources of drinking water, the Department shall prescribe such additional requirements for construction, corrective action (including closure of the injection well), operation, monitoring, or reporting as are necessary to prevent such movement. These additional requirements shall be imposed by modifying the permit, or the permit shall be terminated if cause exists, or appropriate enforcement action shall be taken if the permit has been violated.

(3) Duration for operation permits shall be specified by the Department but shall not exceed five years from the date of issuance. Construction permits shall be issued for a period of time as necessary to construct and test the well, but not to exceed five years from the date of issuance.

(4) Application for Permit.

(a) The applicant shall submit application for permits on form 62-528.900(1) and shall include

1. The application form properly completed and signed pursuant to Rule 62-528.340, F.A.C.;

2. Information as required in Rules 62-528.450 through .460, F.A.C.;

3. Such additional information requested by the Department as described in Rule 62-528.100(2), F.A.C., necessary to provide reasonable assurance that the UIC project will operate in compliance with this chapter;

4. The appropriate fee as specified in Rule 62-4.050(4), F.A.C.

(b) One original and one copy of the application package shall be submitted to the Department. An additional copy shall be provided directly to each member of the Technical Advisory Committee as described in Rule 62-528.100(2) or in the permit.

(c) Any person who performs or proposes an underground injection for which a permit is required shall submit an application to the Department as follows:

1. For existing Class I or III wells, the submittal in accordance with the requirements of Rule 62-4.090, F.A.C.

2. For new Class I or III wells, not less than 90 days before construction is expected to begin.

(d) For Class III well fields or projects, the owner may apply for a single permit for the well field, provided all wells covered by the permit are within the same well field,

are of similar construction, and are of the same class. However, a separate fee shall be assessed for each injection well.

(5) Certification by a Professional Engineer and Professional Geologist.

(a) All applications for construction permits shall be certified by a professional engineer and professional geologist, or an appropriately qualified professional engineer as defined in Chapters 471 and 492, F.S., registered in the State of Florida, except as provided in Rule 62-4.050(3), F.A.C.

(b) The application, plans, and specifications, certification of construction completion reports, operation and maintenance manual, and other related documents shall be certified by a professional engineer or professional geologist, as appropriate, registered in the State of Florida and retained by the applicant for that purpose.

(6) Area of Review.

(a) For Class I wells, the area of review study for a site shall be completed before the test injection well construction permits are issued.

(b) The minimum area of review for a Class III proposed mining site shall initially include the entire proposed mining area plus a surrounding perimeter zone of one mile on all sides. The initial area of review study shall be completed prior to construction, however, individual permit conditions will establish the interval, based on either the rate of geographical expansion of mining activity or a fixed period of time, at which the area of review study shall be updated.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.0877, 403.088, 403.161, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.31, 17-28.310, 62-28.310, Amended 8-10-95. 6-24-97, 12-27-05.

62-528.450 Class I - Test/Injection Well Construction and Testing Permit, and Class III - Well Construction Permit.

(1) General.

(a) The Department shall deny a construction permit if construction of the well itself may be a source of pollution as defined in section 403.031, F.S.

(b) For construction permit approval, reasonable assurance is required that the project will function in compliance with this chapter. The Department shall require an exploratory well for those projects located in an area where available information is lacking concerning geologic or hydraulic confinement or existing information indicates that geologic or hydraulic confinement may be poor or lacking.

(c) For a Class I well, issuance of a construction permit does not obligate the Department to authorize any operation of the well, unless reasonable assurance has been provided that the well can operate in compliance with this chapter.

(d) For a Class III well or well field, a single permit for construction, operation, plugging, and abandonment can be issued.

(2) Information Requirements. Information to be submitted with the construction permit application shall include the following:

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- (a) A map showing the location of the proposed injection wells or well field area for which a permit is sought and the applicable area of review. Within the area of review, the map shall show the number or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, public water systems, mines (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map shall also show faults, if known or suspected. Only information of public record and, in addition, pertinent information known to the applicant is required to be included on this map;
- (b) A tabulation of data on all wells within the area of review which penetrate into the proposed injection zone, confining zone, or proposed monitoring zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging or completion, and any additional information in the applicant's possession about the potential for fluids to migrate into, or in the direction of, an underground source of drinking water;
- (c) Maps and cross sections indicating the general vertical and lateral limits within the area of review of all underground sources of drinking water, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection;
- (d) Maps and cross sections detailing the hydrology and geologic structures of the local area;
- (e) Generalized maps and cross sections illustrating the regional geologic setting;
- (f) Proposed operating data;
1. Average and maximum daily rate and volume of the fluid to be injected;
 2. Average and maximum injection pressure; and
 3. Source and an analysis of the chemical, physical, radiological and biological characteristics of injection fluids, including any additives for Class III wells. For Class I wells injecting domestic effluent, a demonstration that the effluent quality meets the standards specified in Rules 62-600.420(1)(d)1 and 62-600.540, F.A.C.; or for new wells, the minimum treatment requirements set forth in 40 C.F.R. 146.15 and 146.16, as noticed in the *Federal Register*, Vol. 70, No. 224, November 22, 2005, pp. 70513 – 70532, hereby adopted and incorporated by reference. For all other Class I wells, a demonstration that the effluent quality meets the standards specified in Rule 62-660.400(1)(o), F.A.C.
- (g) Proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection zone;
- (h) Proposed stimulation program;
- (i) Proposed injection procedure;
- (j) Engineering drawings of the surface and subsurface construction details of the system, including design features for surge control and water hammer protection;

(k) Contingency plans to cope with all shut-ins or well failures, or, for Class III wells, catastrophic collapse, to prevent migration of fluids into an underground source of drinking water, including emergency discharge provisions;

(l) Plans (including maps) and proposed monitoring data to be reported for meeting the monitoring requirements in Rule 62-528.425, F.A.C.;

(m) For wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the corrective action proposed to be taken under Rule 62-528.300(5), F.A.C.;

(n) Construction procedures including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing and coring program;

(o) A certificate that the applicant has ensured, through a performance bond or other appropriate means as required by Rule 62-528.435(9), F.A.C., the resources necessary to close, plug or abandon the well;

(p) For Class III wells, expected changes in pressure, native fluid displacement, direction of movement of injection fluid;

(q) For Class III wells, a proposed monitoring plan, which includes a plan for detecting any migration of fluids into, or in the direction of, underground sources of drinking water and the proposed monitoring data to be submitted.

(r) The Department adopts by reference 40 C.F.R. pt. 144.31(g) revised as of December 3, 1993.

(3) Operational Testing.

(a) For Class I wells, the construction permit includes a period of temporary injection operation for the purposes of long term testing. Prior to commencement of operational testing:

1. Construction of the injection well shall be complete and the permittee shall submit a notice of completion of construction to the Department.

2. Each well shall first be tested for integrity of construction, and shall be followed by a short term injection test of such duration to allow for the prediction of the operating pressure.

3. The permittee shall submit the following information to each member of the Technical Advisory Committee described in Rule 62-528.100(2), F.A.C., or in the permit:

- a. A copy of the borehole television survey(s),
- b. Geophysical logs,
- c. Mechanical integrity test data,
- d. Data obtained during the short term injection testing conducted pursuant to Rules 62-528.405(3)(a) and .410(7)(e), F.A.C., and subparagraph 1. above,
- e. Confining zone data,
- f. Background water quality data for the injection and monitor zones,
- g. Wastestream analysis,
- h. As-built well construction specifications, and
- i. Other data obtained during well construction which demonstrates that the well will operate in compliance with this chapter.

4. The emergency discharge method shall be fully operational and no emergency discharge shall occur until the permittee has obtained all necessary Department permits.

5. Any corrective action required under Rule 62-528.300(5)(c)2., F.A.C., shall be completed.

6. Prior to granting approval, as described in Rule 62-528.100(2), F.A.C., for operational testing of a Class I well, the Department shall consider the following information:

- a. All available logging and testing program data on the well;
- b. A demonstration of mechanical integrity pursuant to Rule 62-528.300(6), F.A.C.;
- c. The anticipated maximum pressure and flow rate at which the permittee will operate;
- d. The results of the formation testing program;
- e. The actual injection procedure;
- f. The compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone;
- g. The status of corrective action on defective wells in the area of review; and
- h. The information submitted to the Technical Advisory Committee under subparagraph 2. above.

(b) Written authorization for operational testing shall be obtained from the Department as described in Rule 62-528.100(2), F.A.C. Authorization shall be for up to two years or the expiration date of the construction permit, whichever is less, and is nonrenewable. The authorization shall specify the conditions under which operational testing is approved. The authorization shall include:

1. Injection pressure limitation,
2. Injection flow rate limitation,
3. Injection well monitoring requirements,
4. Effluent monitoring requirements,
5. Weekly ground water sampling of monitor wells,
6. Monthly specific injectivity testing,
7. Reporting requirements, and
8. An expiration date for the operational testing period not to exceed two years.

(c) Before authorizing operational testing, the Department shall conduct an inspection of the facility to determine if the conditions of the permit have been met.

(d) If requested by the permittee, the Department shall allow, as described in Rule 62-528.100(2), F.A.C., less frequent sampling than required under paragraph (b)5. above after a minimum of six months of operational testing if the data indicate that the parameter values have stabilized. However, a sampling frequency of less than once per month shall not be allowed.

(e) For Class I and III wells, the duration of the operational testing period shall not exceed two years or the expiration date of the construction permit, whichever is less. If the Department has not issued an intent to issue an operation permit for the injection well(s) by the end of the operational testing period, the permittee shall cease injection.

(f) For a Class I well, if an operation permit has not been obtained for the well within two years after the cessation of operational testing, the permittee shall submit an application to the Department on form 62-528.900(1) to plug and abandon the well in accordance with Rule 62-528.435, F.A.C.

(g) For Class III, the construction permit includes a period of temporary operation for the purpose of testing. Each well shall first be tested for integrity of construction, prior to any injection testing.

(4) Under section 403.091, F.S., the Department conducts periodic inspections during construction.

(5) The construction and testing permit for a Class I well shall require that the following items be submitted to the State Geologist at the Florida Geological Survey, 903 West Tennessee Street, Tallahassee, Florida 32304:

(a) Cuttings obtained during well construction;

(b) Any cores obtained during well construction when no longer needed by the well owner;

(c) Any geophysical logs run during well construction; and

(d) A copy of the Final Report described in Rule 62-528.430(1)(e), F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.088, 403.091, 403.161 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.33, 17-28.330, 62-28.330, Amended 8-10-95, 6-24-97, 12-27-05.

62-528.455 Class I and Class III - Injection Well Operation Permit.

(1) General Requirements.

(a) A separate underground injection control permit shall be obtained for each Class I injection facility. For multiwell injection systems, a separate underground injection control permit application need not be submitted for each well, however a separate application fee shall be assessed for each well in accordance with Rule 62-4.050(4)(i), F.A.C.

(b) Under section 403.091, F.S., the Department conducts periodic inspections during the period authorized by the operation permit.

(c) A report shall be submitted with each application for a Class I well operation permit. For multiwell injection systems, one report may be submitted which addresses each well of that system. The report shall include:

1. Results of the information obtained under the construction permit described in Rule 62-528.450(2), F.A.C.;

2. Record drawings, based upon inspections by the engineer of record or persons under his direct supervision, with all deviations noted;

3. Certification of completion submitted by the engineer of record;
4. An operation manual including emergency procedures;
5. Proposed monitoring program and data to be submitted;
6. Proof that the existence of the well and any associated monitoring wells

has been recorded with the permanent warranty deed or other instrument of conveyance as a two page proviso or addendum that contains certification of the locations of the wells (by metes and bounds) and a detailed sketch of the parcel that shows the location of the well. The location shall be measured by a Florida certified land surveyor, and shall contain the surveyor's signature, registration number, official seal, and the following statement: "I hereby certify that this survey was made under my responsible direction and supervision, and is a correct representation of the land surveyed."

7. Copies of mill certificates for casing used in the well(s) construction. The owner shall retain the original records.

(d) No Class I injection well operation permit shall be issued until the emergency disposal method is fully operational and no emergency discharge shall occur until the permittee has received the required Department permits.

(e) The permittee shall provide direct distribution of the data reports, progress reports, and final reports to each member of the Technical Advisory Committee as described in Rule 62-528.100(2), F.A.C.

(2) Prior to granting approval for the operation of a Class I well or a Class III well or well field the Department shall consider the following information which, for Class I, was obtained during construction and operational testing under the construction permit:

(a) All available logging and testing program data and construction data on the well or well field;

(b) A satisfactory demonstration of mechanical integrity for all new wells pursuant to Rule 62-528.300(6), F.A.C.;

(c) The actual operating data where feasible, or the anticipated maximum pressure and flow rate at which the permittee will operate the well;

(d) The results of the formation testing program;

(e) The actual injection procedure;

(f) For Class I, the compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone;

(g) The status of corrective action on defective wells in the area of review;

(h) The recommendation of the Technical Advisory Committee concerning the operational feasibility of this well or well field.

(3) Repermitting the Operation of Class I Wells.

(a) The permittee shall submit an application to repermit the operation of a Class I well to the Department at least 60 days before the expiration date of the current operation permit.

(b) The application to repermit the operation shall include the following:

1. An evaluation of the size of the area of review based on actual operation and monitoring data;
 2. Updated area of review information required under Rule 62-528.450(2)(a) through (d), F.A.C.;
 3. A wastestream analysis representative of the fluids which are currently being injected;
 4. The process types or categories which are a source of the fluid being injected;
 5. A satisfactory demonstration of mechanical integrity for the well(s) pursuant to Rule 62-528.300(6), F.A.C.;
 6. Results of ground water and other monitoring data obtained since the last permit was issued. The permittee shall provide a tabular and graphical presentation of all ground water monitoring data required by this subparagraph unless the Department, through the process described in Rule 62-528.100(2), F.A.C., approves an alternate list of parameters for the reasons specified in sub-subparagraphs a. and b. below:
 - a. The monitoring results for a parameter are below detectable limits, or
 - b. The parameter was not required to be monitored under the current permit or by chapter 62-528, 62-600, or 62-601, F.A.C.
 7. Results of all specific injectivity and pressure fall-off information obtained since the well began operation, or the date of the most recent repermitting of the well if all available information were submitted at that time; and
 8. Financial responsibility information required by Rule 62-528.435(9), F.A.C., based on an updated plugging and abandonment plan and cost estimate.
- (c) The operation of a Class I well shall not be repermitted unless the applicant has made the following demonstrations:
1. Available water quality monitoring data does not indicate that fluid movement into or between underground sources of drinking water is occurring as a result of injection activity, except as authorized under 40 C.F.R. 146.15, as noticed in the *Federal Register*, Vol. 70, No. 224, November 22, 2005, pp. 70513 – 70532, hereby adopted and incorporated by reference;
 2. Mechanical integrity has been demonstrated under Rule 62-528.300(6), F.A.C.;
 3. Financial responsibility has been demonstrated; and
 4. Other applicable rules of this Chapter have been met.

Specific Authority 373.309, 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087, 403.0877, 403.088, 403.161, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.34, 17-28.340, 62-28.340, Amended 8-10-95, 6-24-97, 12-27-05.

62-528.460 Class I and Class III Well Plugging and Abandonment Permit.

- (1) The Department shall require a Class I or III well, or a test well, or monitor well associated with a Class I or III well, to be abandoned when it is no longer usable for its intended purpose or other purpose as approved by the Department, or when it poses

a potential threat to the quality of the waters of the State. The permittee may also initiate abandonment procedures.

(2) In order to receive approval for the plugging and abandonment of a Class I or III well, or a test or monitor well associated with a Class I or III well, the applicant shall provide reasonable assurance that the well will be plugged and abandoned in accordance with Rule 62-528.435, F.A.C. The applicant shall submit the following:

- (a) The justification for abandonment;
- (b) A proposed plan for plugging and abandonment describing the preferred and alternate methods:
 1. The type and number of plugs to be used;
 2. The placement of each plug including the elevation of the top and bottom;
 3. The type, grade, and quantity of cement or for Class III wells only, any other approved plugging material to be used in the cased portion of the well;
 4. The type, grade, and quantity of cement or any other approved plugging material (if any) to be used to fill the open hole portion of the well;
 5. The method for placement of the plugs;
- (c) The procedure to be used to meet the requirements of Rule 62-528.435, F.A.C.; and
- (d) The results of mechanical integrity testing if required under Rule 62-528.435(2), F.A.C.

(3) In the event of a well failure that requires abandonment, the applicant shall conduct an investigation to collect sufficient information to identify the most appropriate method to properly abandon the well.

(4) Within 90 days of completion of plugging and abandonment procedures, the engineer of record shall provide certification of completion in accordance with the plans and specifications.

(5) Under section 403.091, F.S., the Department conducts periodic inspections at certain stages of plugging.

(6) The permittee shall retain all records concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment procedures specified under Rule 62-528.400(3) (hazardous waste wells) or 62-528.435, F.A.C. Whenever after this retention period the permittee no longer wishes to retain the records, the permittee shall deliver the records to the Department office that issued the permit.

Specific Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.088, 403.091, 403.161 FS. History - New 4-1-82, Formerly 17-28.35, 17-28.350, 62-28.350, Amended 8-10-95, 6-24-97.

PART IV CRITERIA AND STANDARDS FOR CLASS IV WELLS

62-528.500 General Criteria for Class IV Wells. (Repealed)

Rulemaking Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 4-1-82, Formerly 17-28.41, 17-28.410, 62-28.410, Amended 8-10-95, Repealed 2-16-12.

62-528.510 General Prohibition of Class IV Wells.

The construction or operation of any Class IV well is prohibited after April 1, 1982. Specific Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.161, 403.702, 403.721, 403.7222, 403.727 FS. History - New 4-1-82, Formerly 17-28.42, 17-28.420, 62-28.420, Amended 8-10-95.

62-528.520 Waste Analysis for Class IV Wells. (Repealed)

Rulemaking Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 4-1-82, Formerly 17-28.43, 17-28.430, 62-28.430, Amended 8-10-95, Repealed 2-16-12.

62-528.530 Ground Water Monitoring and Response for Class IV Wells. (Repealed)

Rulemaking Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.0877, 403.702, 403.721 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.44, 17-28.440, 62-28.440, Amended 8-10-95, 6-24-97, Repealed 2-16-12.

62-528.540 Closure and Post-Closure Requirements for Class IV Wells. (Repealed)

Rulemaking Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.0877, 403.702, 403.721 FS. History - New 4-1-82, Amended 8-30-82, Formerly 17-28.45, 17-28.450, 62-28.450, Amended 8-10-95, 6-24-97, Repealed 2-16-12.

62-528.550 Financial Requirements for Class IV Wells. (Repealed)

Rulemaking Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.702, 403.721 FS. History - New 4-1-82, Formerly 17-28.46, 17-28.460, 62-28.460, Amended 8-10-95, Repealed 2-16-12.

**PART V
CRITERIA AND STANDARDS FOR CLASS V WELLS****62-528.600 General Criteria for Class V Wells.**

(1) Rules 62-528.600 through .645, F.A.C., sets forth criteria and standards to regulate all injection wells not regulated in previous sections of this Chapter.

(a) Generally, wells covered by these rules inject non-hazardous fluids into or above formations that contain underground sources of drinking water. That includes all wells listed in Rule 62-528.300(1)(e), F.A.C.

(b) These rules also include wells not covered in Class I or Class IV that inject natural and manmade radioactive materials, provided these concentrations do not exceed current drinking water standards in Chapter 62-550, F.A.C.

(2) Classification of Class V Wells. Various types of Class V wells that exist or may exist in Florida are grouped together in order to facilitate the determination of permitting, operating, and monitoring requirements for these wells. The groups are:

(a) Group 1 - Wells associated with thermal energy exchange processes, which include air conditioning return flow wells and cooling water return flow wells. Air conditioning return flow wells and cooling water return flow wells may be part of an open-loop or closed-loop system, with or without additives.

(b) Group 2 - Recharge wells, saltwater intrusion barrier wells, connector wells, and subsidence control wells.

(c) Group 3 - Wells which are part of domestic wastewater treatment systems, including septic system wells receiving domestic wastewater other than those specifically excluded in Rule 62-528.120(4)(b), F.A.C.

(d) Group 4 - Non-hazardous industrial and commercial disposal wells, which include laundry waste wells, dry wells, injection wells associated with aquifer remediation projects, desalination process concentrate wells, and nuclear disposal wells used to inject radioactive wastes, provided the concentrations of the waste do not exceed drinking water standards contained in Chapter 62-550, F.A.C.

(e) Group 5 - Class V wells associated with mining or mineral extraction operations, including wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts, sand backfill wells, and injection wells used for in situ recovery of phosphate, uraniferous sandstone, clay, sand, and other minerals extracted by the borehole slurry mining method.

(f) Group 6 - Lake level control and stormwater drainage wells.

(g) Group 7 - Wells associated with an aquifer storage and recovery system.

(h) Group 8 - Class V wells regulated under additional federal requirements contained in 40 C.F.R. 144.88 (2000) including large capacity cesspools and motor vehicle waste disposal wells.

(i) Group 9 - Class V wells such as exploratory wells, geothermal wells, experimental technology wells, swimming pool drainage wells and other wells not described in the other Class V groups above.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Amended 8-30-82, 5-8-85, Formerly 17-28.51, 17-28.510, 62-28.510, Amended 8-10-95, 6-24-97, 11-20-02.

62-528.601 Federal Regulations Applicable to Class V Wells.

(1) The federal regulations at 40 C.F.R. 144.88 (2000) are herein adopted by reference.

(2) For more information on Class V wells under the federal program, see 40 C.F.R. 144.80 through 40 C.F.R. 144.83 (2000), 40 C.F.R. 144.85 (2000), 40 C.F.R. 144.87 (2000), and 40 C.F.R. 144.89 (2000).

(3) For the purposes of this rule 62-528.601 only and its applicability to Group 8 motor vehicle waste disposal wells, the entire state is a ground water protection area. Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 11-20-02.

62-528.603 Exploratory Well Construction and Testing Permit.

(1) An exploratory well under the Underground Injection Control Program is drilled for the specific purpose of obtaining information to determine the feasibility of underground injection at the proposed site.

(2) A permit to construct an exploratory well shall be denied by the Department if the construction of the well itself will be a source of pollution as defined in section 403.031, F.S. If the construction of the well itself is not a source of pollution, the permit shall be issued with conditions to meet the requirements of (3) through (7) below.

(3) At a minimum, the exploratory well testing program shall be designed to determine the ground water quality profile, and make a preliminary assessment of the adequacy of the confining interval and injection zone potential.

(4) The information provided with the application to construct and test an exploratory well shall include:

- (a) Plan of the injection project;
 - (b) Well inventory as described in Rule 62-528.635(1)(d), F.A.C.;
 - (c) Proposed future use of the exploratory well;
 - (d) Drilling and testing plan for the exploratory well;
 - (e) Source and composition of any fluids to be used for injection testing; and
 - (f) Abandonment plan.
- (5) Injection testing.

(a) The permittee may conduct injection tests under the exploratory well program not to exceed eight days, or such time requested by the permittee, not to endanger the underground sources of drinking water, and approved by the Department subject to the provisions of (b) below and in accordance with the process described in Rule 62-528.100(2), F.A.C.

(b) The exploratory well shall be constructed and tested so that it is in compliance with Rule 62-528.630(3), F.A.C. The use of treated or untreated municipal (domestic) or industrial effluent, or reverse osmosis concentrate is prohibited for injection testing conducted under the exploratory program.

(6) An exploratory well may be converted to a monitor well or plugged and abandoned if the permits have been obtained. An exploratory well shall be re-permitted as a Class I test injection well or a Class V well if the permits have been obtained. If the applicant intends to apply for a permit to convert an exploratory well to a Class I test injection well, the exploratory well shall be constructed to meet the minimum Class I well construction standards contained in parts II and III of this chapter. Tubing and packer or

a fluid seal design shall not be required under the exploratory well permit for exploratory wells that are to be re-permitted as non-municipal Class I wells.

(7) Under section 403.091, F.S, the Department performs periodic inspections at certain stages of construction authorized by the exploratory well permit.

Specific Authority 403.061, 403.087, 403.704, 403.721 FS. Law Implemented 403.021, 403.061, 403.062, 403.087, 403.088, 403.161, 403.702, 403.721 FS. History - New 8-10-95, Amended 6-24-97.

62-528.605 Well Construction Standards for Class V Wells.

(1) The variety of Class V wells and their uses dictate a variety of construction designs consistent with those uses, and precludes specific construction standards for each type of Class V well. However, a well shall be designed and constructed for its intended use, in accordance with good engineering practices, and the design and construction shall be approved by the Department through a permit.

(2) The Department shall apply any of the criteria for Class I wells (Rules 62-528.400 through .460, F.A.C.) to the permitting of Class V wells if the Department determines that without the application of Class I permitting criteria, the Class V well may cause or allow fluids to migrate into an underground source of drinking water which may cause a violation of a primary or secondary drinking water standard contained in Chapter 62-550, F.A.C., or minimum criteria contained in Rule 62-520.400, F.A.C., or may cause fluids of significantly differing water quality to migrate between underground sources of drinking water. Class I injection well permitting standards shall not be required if the injection fluids meet the primary and secondary drinking water quality standards contained in Chapter 62-550, F.A.C., and the minimum criteria contained in Rule 62-520.400, F.A.C. The process for making the determination of which criteria apply is described in Rule 62-528.100(2), F.A.C.

(3) Class V wells shall be constructed so that their intended use does not violate the water quality standards of Chapter 62-520, F.A.C., at the point of discharge, except where specifically allowed in Rule 62-522.300(2), F.A.C., provided that the drinking water standards of 40 C.F.R. pt. 142 (1994) are met at the point of discharge for projects and facilities described in Rule 62-522.300(2)(a) and (b), F.A.C. Migration or mixing of fluids from aquifers of substantively different water quality (through the construction or use of a Class V well) shall be prevented by preserving the integrity of confining beds between these aquifers through cementing or other equally protective method acceptable to the Department.

(4) All Class V wells shall be constructed by a Florida licensed water well contractor.

(5) A well completion report defining details of construction and describing various formations penetrated by the well shall be forwarded to the Department within two days after completion of the drilling operation.

(6) Samples of formations penetrated shall be obtained during the construction of any major Class V well as defined in Rule 62-528.200(41), F.A.C., and shall be submitted for other Class V wells if needed to demonstrate whether the well will

operate in compliance with chapter 62-528, F.A.C. If required, samples shall be forwarded to the State Geologist, Florida Geological Survey, 903 West Tennessee Street, Tallahassee, Florida 32304, when drilling is completed.

(7) All drilled wells shall, at a minimum, meet the casing and cementing requirements for water well construction set forth in Chapter 62-532, F.A.C.

(8) Class V wells shall not be dynamited except with written permission from the Department.

(9) A test well or boring shall be filled with cement within five days after completion of the testing for which it was drilled. Such test wells or borings shall not be used as drainage wells unless a permit has been obtained in accordance with this Chapter. Failure to obtain a permit prior to drilling of the well or boring shall bar future use except for testing purposes not connected with drainage in any manner.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 373.313, 373.323, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.52, 17-28.520, 62-28.520, Amended 8-10-95, 6-24-97, 8-27-01.

62-528.610 Operation Requirements for Class V Wells.

(1) All Class V wells shall be used or operated in such a manner that they do not present a hazard to an underground source of drinking water.

(2) Domestic wastewater effluent or reclaimed water quality shall meet the criteria established in Rules 62-600.420(1)(d)2. and 62-600.540(2) and (3), or 62-610.660, F.A.C., as appropriate.

(3) Pretreatment for fluids injected through existing wells shall be performed if necessary to ensure that the injected fluid does not violate the applicable water quality standards in Chapter 62-520, F.A.C., and in Monroe County, Chapter 62-302, F.A.C., when required under Rule 62-528.630(7), F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Formerly 17-4.27, Amended 5-8-85, Formerly 17-28.53, 17-28.530, 62-28.530, Amended 8-10-95, 6-24-97.

62-528.615 Monitoring Requirements for Class V Wells.

(1) The need for monitoring shall be determined by the type of well, nature of the injected fluid, and water quality of the receiving and overlying aquifers.

(a) Except as provided in (b) below, the Department shall require monitoring for the following:

1. Group 1 wells operating on an open-loop system or with provisions for additives, Group 3, Group 4, Group 5, and Group 8 motor vehicle waste disposal wells;
2. Group 2 and Group 7 wells except when the injection fluids meet the primary and secondary drinking water standards contained in Chapter 62-550, F.A.C., and the minimum criteria contained in Rule 62-520.400, F.A.C.; and the injection fluids have been processed through a permitted drinking water treatment facility;

3. Group 6 and Group 9 wells, except swimming pool drainage wells, if injection is into an underground source of drinking water; and

4. Any Class V well where either an exemption from water quality criteria under Rule 62-520.500 or .510, F.A.C., or an aquifer exemption under Rule 62-528.300(3), F.A.C., was required.

(b) The Department shall not require monitoring for the following:

1. Wells used to inject fluids that meet the primary and secondary drinking water standards contained in Chapter 62-550, F.A.C., and the minimum criteria contained in Rule 62-520.400, F.A.C., and that have been processed through a permitted drinking water treatment facility;

2. Air conditioning return-flow wells and swimming pool drainage wells receiving a general permit under Rules 62-528.705 or .710, F.A.C.; or

3. Other Class V wells that the Department determines through the process described in Rule 62-528.100(2), F.A.C., will provide reasonable assurance of compliance with this rule, without monitoring.

(2) The Department shall determine the frequency of monitoring based on the location of the well, the nature of the injected fluid and, where applicable, the requirements of Chapters 62-600 and 62-601, F.A.C. The monitoring parameters and frequency shall be addressed in the Class V permit or authorization to use a Class V well under Rule 62-528.635(4), F.A.C.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Formerly 17-28.54, 17-28.540, 62-28.540, Amended 8-10-95, 6-24-97, 11-20-02.

62-528.620 Reporting Requirements for Class V Wells.

(1) Reporting requirements shall be determined by the type of well and nature of injected fluid. Where applicable, reporting shall be in accordance with Chapters 62-600 and 62-601, F.A.C.

(2) Reporting shall be required for Group 1-cooling water return flow wells on an open-loop system, or with additives; Group 2; Group 3; Group 4; Group 5; Group 7; Group 8 motor vehicle waste disposal wells; and Group 9 except swimming pool drainage wells.

(3) For Group 6 wells, the permittee shall meet the reporting requirements of (1) above, unless reasonable assurance is provided that underground sources of drinking water are being adequately protected.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Formerly 17-28.55, 17-28.550, 62-28.550, Amended 8-10-95, 6-24-97, 11-20-02.

62-528.625 Plugging and Abandonment for Class V Wells.

(1) The Department shall order a Class V well plugged and abandoned when it no longer performs its intended purpose, or when it is determined that the presence of the well may cause or allow a violation of a primary or secondary drinking water

standard contained in Chapter 62-550, F.A.C., or may otherwise adversely affect the health of persons.

(2) A plugging and abandonment plan shall be submitted to the Department with the construction permit application.

(3) Prior to abandoning Class V wells, the well shall be plugged with cement in a manner which will not allow movement of fluids between underground sources of drinking water. The proposed plugging method and type of cement shall be approved by the Department by inclusion as a condition of the permit. Placement of the cement shall be accomplished by any recognized method which is approved by the Department in the permit.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 403.021, 403.061, 403.062, 403.087 FS. History - New 4-1-82, Formerly 17-28.56, 17-28.560, 62-28.560, Amended 8-10-95.

PART VI CLASS V WELL PERMITTING

62-528.630 General Permitting Requirements for Class V Wells.

(1) Except as provided in subsection (2) below, underground injection through a Class V well which begins operation after April 1, 1982, is prohibited except as authorized by permit. The construction or modification of any Class V well required to have a permit under rules 62-528.600 through 62-528.645, F.A.C., is prohibited until the permit has been issued. In addition to the specific provisions of rules 62-528.630 through 62-528.645, F.A.C., the applicable general permitting conditions of rule 62-528.307 and the general provisions in chapter 62-4, F.A.C., shall apply, unless superseded by specific requirements for underground injection control in chapter 62-528.

(2) The following Class V well types are exempt from the permitting requirements of Rule 62-528.635, F.A.C., but shall be authorized in accordance with paragraphs (a) through (c) below.

(a) A general permit shall be granted under Rule 62-528.705 or .710, F.A.C., as appropriate, for:

1. Closed-loop air conditioning return flow wells and other noncontact closed-loop thermal exchange system wells with no provision for additives serving multifamily residential units or business establishments.

2. Swimming pool drainage wells serving multifamily or public swimming pools.

(b) Swimming pool drainage wells and closed-loop air conditioning return flow wells with no provisions for additives serving a single-family residential unit are exempt from the permitting requirements of Chapter 62-528, F.A.C., provided the well is constructed in accordance with the requirements of Chapter 62-532, F.A.C., and the following information is submitted to the Department for inventory purposes:

1. Name and address of well owner,

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2. Name and address of well driller,
 3. Well location,
 4. Well depth,
 5. Cased depth,
 6. Casing material,
 7. Cemented interval, and
 8. For air conditioning return flow well systems only, the depth and construction of supply wells for the air conditioning system.

(c) Class V wells associated with aquifer remediation projects shall be authorized under the provisions of a remedial action plan or other enforceable mechanism, provided the requirements of the rules governing the remediation project, as well as the construction, operation, and monitoring requirements of this Chapter are met. The following inventory information shall be submitted to the Department for inventory purposes:

1. Name and address of facility where the remediation project is taking place;
2. Name and address of the owner of the facility where the remediation project is taking place;
3. Name and address of water well contractor;
4. Location of all injection wells and associated monitor wells;
5. Construction details for all injection and monitor wells including:
 - a. Total depth and cased depth, or screened interval (as appropriate) ,
 - b. Casing material, and
 - c. Cemented interval; and
6. A brief description of the remediation project.

(3) No underground injection control authorization by permit or rule shall be allowed where a Class V well causes or allows movement of fluid containing any contaminant into underground sources of drinking water, and the presence of that contaminant may cause a violation of any primary drinking water regulation under Chapter 403, F.S., and Chapter 62-550, F.A.C., or which may adversely affect the health of persons.

(4) If at any time the Department learns that an existing Class V well may cause a violation of primary drinking water standards under Chapter 62-550, F.A.C., the Department shall, as determined by following the process in Rule 62-528.100(2), F.A.C.:

- (a) Require a permit for such Class V well;
- (b) Order the injector to take such actions needed to prevent the violation, including, when necessary, closure of the injection well.
- (c) Require monitoring to demonstrate that the water quality criteria in Rule 62-520.420, F.A.C., are not violated; or
- (d) Take enforcement action.
- (5) Whenever the Department learns that a Class V well may be otherwise adversely affecting the health of persons, the Department shall prescribe action necessary to prevent the adverse effect, including any action authorized under

subsection (4). The process for determining these actions is described in Rule 62-528.100(2), F.A.C.

(6) Notwithstanding any other provision of this Chapter, the Department shall take immediate action upon receipt of information that a contaminant which is present or is likely to enter a public water system may present an imminent and substantial endangerment to the health of persons.

(7) All Class V Group 3 wells designed to inject domestic wastewater in Monroe County shall be required as part of the operation permit application to provide reasonable assurance that operation of the well will not cause or contribute to a violation of surface water standards as defined in Chapter 62-302, F.A.C.

(8) Inventory Requirements.

(a) The owner or operator of any Class V well shall notify the Department of the existence of any well meeting the definitions of Class V under his control, and submit the inventory information required in subsection (9) below.

(b) The owner or operator of a cooling water return flow well, air conditioning return flow well, or swimming pool drainage well authorized under Rule 62-528.630(2)(b), F.A.C., shall submit the inventory information required under that paragraph in lieu of that required by subsection (10) below.

(c) If the owner or operator of any Class V well authorized under this section or Rule 62-528.630(2)(b), F.A.C., fails to comply with the inventory requirements of this section or Rule 62-528.630(2)(b), F.A.C., that authorization shall automatically terminate.

(9) As part of the inventory, the Department shall require the following information:

(a) Facility name and location, including a plot plan showing location of well(s);

(b) Name and address of legal contact;

(c) Ownership of facility;

(d) Nature and type of injection wells, including installed dimensions of wells and construction materials;

(e) Operating status of injection wells, including history of injection;

(f) Volume of injected fluid;

(g) Nature of injected fluid;

(h) Description of injection system, including monitoring well(s), if any.

(10) A group of similarly designed injection wells within the same wellfield, owned and operated by the same applicant serving the same purpose may be permitted as a system rather than as individual wells, however a separate permit fee as specified in Rule 62-4.050(4)(m), F.A.C., shall be assessed for each well.

(11) At least 30 days prior to sale or legal transfer of a Class V well, the new owner shall notify the Department. Until such time as notice of change in ownership is submitted, the owner reflected on the permit/clearance shall be responsible for the operation of the well and for damages resulting from improper operation of the wells.

(12) A separate underground injection control permit shall be obtained for a Class V well which is constructed and operated as part of a fluid treatment or disposal system permitted by the Department.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 373.313, 403.021, 403.061, 403.062, 403.087, 403.088, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.61, 17-28.610, 62-28.610, Amended 8-10-95, 6-24-97, 7-15-99, 11-20-02.

62-528.635 Construction/Clearance Permit for Class V Wells.

(1) All owners or operators of Class V wells shall obtain a two-part Construction/Clearance Permit, except as provided in Rule 62-528.630(2), F.A.C. The applicant shall submit to the Department the following information before receiving permission to construct:

- (a) Facility name and location;
- (b) Name, address, and signature of owner (or authorized representative) of facility;
- (c) Name, address, license number, and signature of Florida licensed water well contractor;
- (d) Well location and depth, and casing diameter and depth for all water supply wells on the applicant's property, and well location for all water supply wells of public record within a one-half mile radius of the proposed well;
- (e) Description and use of proposed injection system, including type and construction of injection wells, physical and chemical analyses, estimated quantity, pertinent bacteriological analyses of injected fluid, and any proposed pretreatment.
- (f) Proposed drilling and testing plan for any exploratory borehole or exploratory well proposed for the purpose of determining feasibility of Class V well injection at that site.
- (g) If the flow of surface or other waters is directed by ditches or other artificial methods to the well, a delineation of the area drained by these features shall be provided.

(2) When site-specific conditions indicate that there is a threat to an underground source of drinking water, the applicant shall submit to the Department the following information before receiving permission to construct:

- (a) Completed report of inspection by local programs or water management districts which have agreements with the Department.
- (b) Bacteriological examination of the injection fluid, on-site monitor wells, and the nearest down-gradient domestic or public water supply well within a one-half mile radius that are drilled to the same formation(s) as the proposed Class V well. The bacteriological survey shall be conducted as follows:
 1. Samples shall be collected from each well for the first three days of each week for four weeks.
 2. Duplicate samples shall be collected in each case after the well has been pumped at least twenty minutes. Whenever a drainage well installation is approved

following preliminary bacteriological survey of neighboring water supply wells, an identical survey of the same well shall be conducted following active use of the drainage well.

(c) If a drainage well or drainage structure will present a possible pollution hazard to an underground source of drinking water, additional data shall be required.

(3) Upon completion of the well construction, the water well contractor shall certify with the Department that the well has been completed in accordance with the approved construction plan, and submit any other additional information required by the construction permit before the well can be put into service.

(4) If the applicant demonstrates that the operation of the well will not adversely impact an underground source of drinking water, the Department shall issue an authorization to use a Class V well, which is non-renewable and non-expiring for the Class V groups or well types listed in (a) through (d) below. The authorization shall contain operating and reporting requirements. Other Class V wells not specifically exempted under Rule 62-528.640(1)(c), F.A.C., shall obtain an operation permit before injecting fluids into the well.

(a) Group 1 wells on a closed-loop system with no provisions for additives, except those Group 1 wells receiving a general permit under Rule 62-528.705, F.A.C, or exempt from permitting under Rule 62-528.630(2)(b), F.A.C.;

(b) Group 2, Group 7, and Group 9 wells (except swimming pool drainage wells) when the fluids being injected meet the primary and secondary drinking water quality standards contained in Chapter 62-550, F.A.C., and the minimum criteria contained in Rule 62-520.400, F.A.C.;

(c) Group 5 sand backfill wells; and

(d) Group 6 wells unless injection is into an underground source of drinking water.

(5) The permittee shall perform initial or periodic testing of the Class V well if site-specific factors or operational testing indicate that there is a threat to underground sources of drinking water.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 373.313, 403.021, 403.061, 403.062, 403.087, 403.088, 403.161 FS. History - New 4-1-82, Amended 8-30-82, Formerly 17-4.27(2), Amended 5-8-85, Formerly 17-28.62, 17-28.620, 62-28.620, Amended 8-10-95, 6-24-97, 11-20-02.

62-528.640 Operation Permit for Class V Wells.

(1) In addition to a Construction/Clearance Permit, the owner or operator of these wells shall obtain an operation permit as required under this subsection.

(a) The following Class V groups and well types shall obtain an operation permit:

1. Cooling water return flow wells using an open-looped system, or any system using additives;

2. Groups 2, 7, and 8 wells, except swimming pool drainage wells, unless the fluids being injected meet the primary and secondary drinking water standards

contained in Chapter 62-550, F.A.C., and minimum criteria contained in Rule 62-520.400, F.A.C.;

3. Group 3 wells;
4. Group 4 wells;
5. Group 5 wells, except sand backfill wells; and
6. Group 6 wells if injection is into an underground source of drinking water.

(b) In addition to the Class V groups and well types listed in paragraph (a) above which are required to obtain an operation permit, the Department shall require the owner or operator of any Class V group or well type to obtain an operation permit if the Department determines that the operation of a Class V well has the potential to cause or allow fluid movement into an underground source of drinking water which may cause a violation of a primary or secondary drinking water standard contained in Chapter 62-550, F.A.C., or minimum criteria contained in Rule 62-520.400, F.A.C. In making this determination the Department shall consider the following:

1. Quality of water in all aquifers penetrated by the well;
2. Quality of the injection fluid;
3. Volume of fluid injected;
4. Existing and potential uses of aquifer within the area which may be affected by the well; and
5. Well construction.

(c) Operation permits are not required for Group 1 wells and swimming pool drainage wells meeting the requirements for a general permit under Rules 62-528.705 and .710, F.A.C., aquifer remediation wells authorized under the provisions of a remedial action plan as allowed under Rule 62-528.630(2)(c), F.A.C., and Group 7 wells when the injection fluid meets the primary and secondary drinking water standards contained in Chapter 62-550, F.A.C., and the minimum criteria contained in Rule 62-520.400, F.A.C., and have been processed through a permitted drinking water treatment facility.

(2) Operation permits shall be issued for a period not to exceed five years.

(3) At least 60 days before expiration of an operation permit, the owner or operator shall apply for renewal of his permit.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 373.313, 403.021, 403.061, 403.062, 403.087, 403.088, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.63, 17-28.630, 62-28.630, Amended 8-10-95, 6-24-97.

62-528.645 Plugging and Abandonment Permit for Class V Wells.

(1) The owner or operator of any Class V well shall apply for a plugging and abandonment permit when the well is no longer used or usable for its intended purpose or other purpose as approved by the Department. The application shall include the proposed plugging plan and justification for abandonment. Plugging shall be performed by a Florida licensed water well contractor.

(2) Upon completion of plugging and abandonment procedures, the engineer of record shall provide certification of completion in accordance with the plans and specifications.

(3) The owner or operator of any Class V well shall provide evidence, such as a sealed copy of certification from the county clerk, that a surveyor's plot of the location of the abandoned well has been recorded in the county courthouse property records. Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.308, 373.313, 403.021, 403.061, 403.062, 403.087, 403.088, 403.161 FS. History - New 4-1-82, Amended 5-8-85, Formerly 17-28.64, 17-28.640, 62-28.640, Amended 8-10-95.

62-528.700 Installations Discharging to Ground Water; Permitting and Monitoring Requirements.

Specific Authority 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, 403.805 FS. Law Implemented 403.021, 403.061, 403.087, 403.088, 403.121, 403.141, 403.161, 403.182, 403.201, 403.502, 403.504, 403.702, 403.708 FS. History - New 3-1-79; Amended 1-1-83, 7-18-85, 7-9-87, 2-11-88, 11-23-88; Formerly 17-4.245, 17-28.700, 62-28.700, Repealed 8-10-95.

PART VII

62-528.705 General Permit for the Construction of a Closed-Loop Air Conditioning Return Flow Well.

(1) A general permit is hereby granted for the construction of a closed-loop air conditioning return flow well or noncontact, closed-loop thermal exchange system well, with no provision for additives, described in Rule 62-528.630(2)(a)1., F.A.C., that has been designed in accordance with the standards and criteria set forth in Rule 62-528.605, F.A.C., provided that notice to the Department under Rule 62-4.530(1), F.A.C., is submitted on Form 62-528.900(7), F.A.C.

(2) This general permit is subject to the general conditions of Rule 62-4.540, F.A.C., and the following specific conditions:

(a) Within thirty days of completion of construction, the permittee or his engineer of record shall certify to the Department that the permitted construction is complete and that it was done in accordance with the plans submitted to the Department.

(b) This general permit is limited to closed-loop systems as defined in Rule 62-528.300(1)(e)1.a., F.A.C., with no provisions for additives.

(3) Rules 62-528.630(3) through (6), F.A.C., apply to wells operating under a general permit.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.309, 373.313, 403.021, 403.031, 403.062, 403.087, 403.813 FS. History - New 5-8-85, Formerly 17-4.73, 17-28.801, 62-28.801, Amended 8-10-95.

62-528.710 General Permit for the Construction of a Swimming Pool Drainage Well.

(1) A general permit is hereby granted for construction of a swimming pool drainage well that has been designed in accordance with the standards and criteria set forth in Rule 62-528.605, F.A.C., provided that notice to the Department under Rule 62-4.530(1), F.A.C., is submitted on Form 62-528.900(9), F.A.C.

(2) This general permit is subject to the general conditions of Rule 62-4.540, F.A.C., and the condition that within thirty days after completion of construction, the permittee or his engineer of record shall certify to the Department that the permitted construction is complete and that it was done in accordance with the plans submitted to the Department.

(3) Rules 62-528.630(3) through (6), F.A.C., apply to swimming pool drainage wells operating under a general permit.

Specific Authority 373.309, 403.061, 403.087 FS. Law Implemented 373.309, 373.313, 403.021, 403.031, 403.062, 403.087, 403.813 FS. History - New 5-8-85, Formerly 17-4.74, 17-4.740, 17-28.802, 62-28.802, Amended 8-10-95, 6-24-97.

62-528.822 General Permit for a Pesticide Waste Degradation System.

Specific Authority 403.814 FS. Law Implemented 403.061, 403.087, 403.088, 403.814 FS. History - New 6-5-88, Formerly 17-28.822, Formerly 62-28.822, Repealed 8-10-95.

**PART IX
FORMS**

62-528.900 Forms for Underground Injection Control.

The forms used by the Department in the Underground Injection Control Program are adopted and incorporated by reference in this section. The form is listed by rule number, which is also the form number, and with the effective date. Copies of forms may be obtained by writing to the Department of Environmental Protection, Division of Water Facilities, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(1) Application to Construct/Operate/Abandon Class I, III, or V Injection Well Systems, 6-24-97.

(2) Certification of Plugging Completion Class I, III, or V Well, 8-10-95.

(3) Construction/Clearance Permit Application for Class V Well, 8-10-95.

(4) Certification of Class V Well Construction Completion, 8-10-95.

(5) Authorization for Class V Well Use, 8-10-95.

(6) Application for Class V Well Plugging and Abandonment Permit, 8-10-95.

(7) General Permit Form for Closed-Loop Air Conditioning Return Flow Class V Injection Well, 8-10-95.

(8) Notification to the Florida Department of Environmental Protection of Class V Well Ownership, 8-10-95.

(9) Inventory Form for Single-Family Closed-Loop Air Conditioning Return Flow and Swimming Pool Drainage Class V Injection Wells, 8-10-95.

(10) Certification of Monitor Well Completion, 8-10-95.
Specific Authority 373.309, 403.061, 403.062, 403.087 FS. Law Implemented 373.308, 403.021, 403.061 FS. History - New 11-30-82, Amended 5-8-85, Formerly 17-1.209, 62-1.209, Amended 8-10-95, 6-24-97.