



DOCKET CONTROL CENTER

84 OCT 29 11:06

Office of the Governor
General Counsel Division
Nuclear Waste Programs Office

Austin, Texas 78711
Phone (512) 475-4444

MEMO

TO: Interested Parties
FROM: Steve Frishman, Director *SF*
DATE: October 25, 1984
RE: Proposed Texas Department of Water Resources Rules Concerning Drilled or Mined Shafts

Attached you will find the latest set of rules proposed to implement the amended Chapter 28 of the Texas Water Code which initiates a system of permitting and regulation for drilled or mined shafts. This re-proposal incorporates a number of significant changes that resulted from the public review of earlier proposals. You will note that no hearings are planned for this proposal since there have been numerous hearings and considerable comment on the subject during the past year.

As a result of some confusion over publication dates for the proposed rule, I regretfully failed to distribute copies as early as possible, but I have been informed that comments received by November 12, 1984 will be entered for consideration. --I hope this does not cause you any great inconvenience.

Any comments you may wish to submit should be forwarded as instructed in the notice. And, as always, I would appreciate receiving a copy of any comments submitted.

If you have any questions, please do not hesitate to contact me. In this ever changing world, I have a new phone number although my office address remains the same. I can be reached at 512/475-1577.

SF:dp

WM Record File

106.1

WM Project 16

Docket No. _____

PDR

LPDR

Distribution:

| | |
|------------------------|------------------|
| REB/MSB | HSM/KERR |
| JOB/JSL/DRM | LINENAN/JOHANSON |
| (Return to WM, 623-SS) | SANBORN-REG TV |

8412030005 841025
PDR WASTE
WM-16 PDR

STEVE FRISHMAN
Director

735

18 cubic feet for taking bait, spear gun and spear, bow and arrow, and gig.

(c)-(n) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's authority to adopt.

Issued in Austin, Texas, on October 1, 1984.

TRD-849943 Maurine Ray
Administrative Assistant
Texas Parks and Wildlife
Department

Earliest possible date of adoption:
November 5, 1984
For further information, please call (512) 479-4862
or (800) 792-1112.

Part X. Texas Water Development Board

Chapter 361. Drilled or Mined Shafts Subchapter A. General Provisions

31 TAC §§361.1-361.19

The Texas Department of Water Resources proposes new §§361.1-361.19, concerning drilled or mined shafts.

The first proposal of these new sections was on September 23, 1983 (8 TexReg 3788). Public hearings were held November 9, 1983, in Amarillo and November 18, 1983, in Austin. The proposal was withdrawn in the February 17, 1984, issue of the *Texas Register* (9 TexReg 984). In response to comments, the rules were repropoed in the February 21, 1984, issue of the *Register* (9 TexReg 1085), and public hearings were held February 21, 1984, in El Paso and February 23, 1984, before the Senate Natural Resources Committee in San Angelo. This proposal was withdrawn in the August 24, 1984, issue of the *Texas Register* (9 TexReg 4559). Because of the extensive public comments and multiple hearings, no additional public hearings are contemplated at this time. The comment period on this proposal will close 30 days from this publication. The new sections implement the provisions of amendments to the Texas Water Code, Chapter 28, §28.001 *et seq.*, effective May 18, 1983, which initiate a system of permitting and regulation for drilled or mined shafts and integrate that system into the department's regulatory framework.

Mike Hodges, Fiscal Services Section chief, has determined that for the first five-year period the rules will be in effect there will be fiscal implications as a result of enforcing or administering the rules. The effect on state government is an estimated \$10,000 in additional cost and an estimated \$10,000 in additional revenue in 1985. There are no anticipated fiscal implications for local government or small businesses as a result of enforcing or administering the rules.

Mr. Hodges also has determined that for each year of the first five years the rules as proposed are in effect the public benefit anticipated as a result of enforcing

the rules as proposed is protection of water quality, human health and welfare, and the environment. The anticipated economic cost to individuals who are required to comply with the rules as proposed is \$10,000 in 1984 for new shafts.

Comments on the proposal may be submitted to Savannah Robinson, Staff Attorney, Texas Department of Water Resources, P.O. Box 13087, Austin, Texas 78711, (512) 476-7841.

The new sections are proposed under the Texas Water Code, §§28.011, 28.030, 5.131, and 5.132, which provides the Texas Water Development Board with the authority to regulate drilled or mined shafts and to promulgate rules.

§361.1. Purpose, Scope, and Applicability.

(a) The purpose of this subchapter is to implement the provisions of the Texas Water Code, Chapter 28, as it applies to drilled or mined shafts, consistent with the policies of the Texas Water Code as stated in §§1.003, 5.011, and 28.030.

(b) This chapter applies to all drilled or mined shafts and associated facilities within the department's jurisdiction.

§361.2. Definitions. The definitions contained in the Texas Water Code, §28.001, shall apply to this chapter. The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise:

Aquifer—A geologic formation, group of formations, or part of a formation that is water-saturated, water-bearing, and yields water in sufficient quantities to provide a usable supply. Texas aquifers are classified as either major or minor groundwater aquifers and are defined in the most current edition of *Texas Department of Water Resources Report 238*.

Area of review—The surface area and the subsurface area extending horizontally not less than 2,000 feet in all directions from the maximum extension of a proposed or existing shaft.

Borehole—A drilled penetration or an artificial opening in the ground where the depth is greater than its largest surface dimension and is located within 2,000 feet of a new shaft and penetrates a major or minor aquifer.

Casing—Material used to seal off strata at and below the earth's surface, and to maintain the structural stability of shaft opening.

Contaminant—Any physical, biological, chemical, or radioactive material or matter in water.

Formation—A body of soil or rock characterized by a degree of lithologic homogeneity that is prevailing, but is not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

Existing shaft—A shaft constructed before the effective date of this subchapter (the use of which remains unchanged after the effective date of this subchapter), or an abandoned shaft.

Formation fluid—Fluid present in a formation under natural conditions.

Groundwater—Water below the land surface in a zone of saturation.

New shaft—Any shaft which has not been con-

structed as of the effective date of this subchapter, or any existing shaft or abandoned shaft which is modified or converted to a new purpose for which it was not being used on the effective date of this subchapter.

Pollution—The contamination of water or the alteration of the physical, chemical, radioactive, or biological quality of water:

(A) that makes it harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to public health, safety, or welfare; or

(B) that impairs the usefulness or the public enjoyment of the water for any lawful and reasonable purpose.

Resident inspector—A person or persons who is designated by the executive director to remain on-site to oversee and inspect the ongoing construction and operation of the drilled or mined shaft.

Seismic reflection survey (geophysical survey)—Any surface-based geophysical method which can accurately measure a response at depth of physical phenomena either artificial and/or natural, directly and/or indirectly, which is related to the underground geological conditions.

Shaft—Any vertically oriented excavation, whether constructed by drilling or mining techniques, where the depth of the excavation is greater than its diameter, the excavation penetrates into or through the base of the uppermost water-bearing strata, and the primary purpose of the excavation is the transport of workers and materials to and from a destination, at depth, for purposes of geological studies, access to existing and planned subsurface mine workings, safety, or for ventilation of those workings.

Surface facilities—The structures, equipment, appurtenances, and other fixtures associated with the drilled or mined shaft used for storage, processing, or operation, that are above the ground, but not including the shaft collar.

Stratum or strata—A bed or layer, regardless of thickness, that consists of generally the same kind of soil, rock, or material.

Test hole—A drilled and/or cored hole used to determine the type, nature, and characteristics of the subsurface materials and the extent and conditions of the various materials as they exist.

Uppermost water-bearing strata—A major or minor aquifer as recognized and described in the most current edition of *Texas Department of Water Resources Report 238*.

Well—An augered, bored, drilled, or driven penetration or an artificial opening in the ground made by digging, jetting, or some other method, where the depth of the well is greater than its largest surface dimension, but the term does not include any surface pit, surface excavation, drilled or mined shaft, or natural depression.

§361.3. Severability. If any provision of this chapter, or the application of such provision to any person or circumstance, is held invalid, the remainder of this chapter, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

§361.4. Construction and Use Prohibited.

(a) Unless excluded under subsection (b) of this sec-

tion, the construction, or operation of a new shaft is prohibited, unless authorized by permit of the commission.

(b) The following penetrations are not within the scope of subsection (a) of this section:

(1) penetrations whose primary purpose is the production of groundwater;

(2) penetrations or boreholes authorized by the Texas Department of Water Resources under the Underground Injection Control Program (Chapter 353 of this title (relating to Underground Injection Control));

(3) shafts incident to surface mines for oil and gas, iron ore, lignite, coal, or uranium recovery regulated by the Railroad Commission of Texas;

(4) sanitary sewer lift stations and otherwise approved water and sewer collection, storage, and distribution structures;

(5) penetrations authorized by the Railroad Commission of Texas of less than 36-inch diameter whose primary purpose is the ventilation of underground workings or structures;

(6) penetrations authorized by the department or Railroad Commission of Texas whose purpose is the transmission of fuels, concrete slurries, muds, electrical lines, communications, wires or structures, or other utility transmissions, or bulk materials to or recovery from underground storage facilities or mine workings;

(7) penetrations which would otherwise be defined as shafts but which, due to local conditions, do not penetrate into or through a major or minor aquifer; and

(8) existing shafts.

(c) The receipt, storage, and disposal on site of any wastes not expressly authorized by permit and not generated by construction is prohibited.

§361.5. Prepermit Determination.

(a) Prior to submission of an application for permit, persons considering the construction of a new shaft, which may be defined as a shaft subject to this chapter, must contact the executive director and obtain a determination whether or not the proposed activity is subject to this chapter.

(b) The following information must be submitted for this determination:

(1) the proposed or existing location of the shaft;

(2) the activity proposed and, if applicable, the existing activity; and

(3) the proposed or, if applicable, existing depth of the shaft.

(c) An applicant may provide information supporting its position that the new or existing shaft, due to local conditions, will not penetrate into or through an uppermost water-bearing strata for the purposes of this determination.

§361.6. Preapplication Activities.

(a) Persons who are determined to be proposing a new shaft subject to this chapter must obtain executive director approval of plans for the drilling of an engineering design test hole on center or offset to the shaft and a proposed seismic reflection survey (geophysical survey) for the purposes of site characterization, shaft and seal design, and shaft decommissioning prior to submitting an application for permit. Plans submitted for approval shall contain specific information which will address the following:

(1) test hole—location, drilling, completion, testing, closure, surface cleanup, and mud pits; and

(2) seismic survey—location and number of lines, velocity control, and accuracy of resolution.

(b) An applicant may provide results of previous exploratory drilling and geophysical surveys to support its position that the engineering design test hole and seismic reflection survey (geophysical survey) are not necessary.

(c) After an appropriate review of the matters submitted under subsection (a) and subsection (b) of this section, the executive director:

(1) may allow the results of previous exploratory drilling and geophysical exploration to be substituted for the engineering design test hole and seismic reflection survey;

(2) will determine the requirements of §361.9 of this title (relating to Procedures for Application) and the area of review;

(3) will determine the fee necessary to compensate the Texas Department of Water Resources for reviewing the application; and

(4) may require mechanical integrity investigation for existing shafts which may be modified or converted to a new purpose.

(d) Persons required to drill an engineering design test hole and/or conduct a seismic reflection survey must first obtain the written approval of the executive director.

§361.7. Test Hole and Seismic Reflection Survey.

(a) A test hole will not be required to be drilled in conjunction with modification or conversion of use of an existing or abandoned shaft.

(b) Current department and Railroad Commission of Texas rules shall be used to determine requirements for the mud pit construction, surface cleanup, and test hole closure requirements.

(c) A seismic reflection survey (geophysical survey) will not be required in conjunction with modification or conversion of use of an existing or abandoned shaft.

§361.8. Application for Permit.

(a) A technical report prepared either by a registered professional engineer or by a qualified person who is competent and experience in the field to which the application relates or who is thoroughly familiar with the operation or project for which the application is made shall be submitted as part of the application for new permit. At a minimum, the report shall include the following:

(1) a general description and intended purpose of all facilities and systems proposed to be used for, or in connection with, construction and operation of a shaft by mining or drilling;

(2) a surveyor's plat showing the exact location from property lines and survey lines, and giving the latitude and longitude of the shaft and a map(s) showing the location of the shaft for which a permit is sought, and the applicable area of review. Within the area of review, the map(s) must show the number, name, and location of all boreholes and other pertinent surface features;

(3) a tabulation of data of all boreholes within the applicable area of review. Such data shall include a description of each penetration's type, construction, date drilled, location, depth, record of plugging and comple-

tion, and any additional information the executive director may require;

(4) maps and cross-sections, as necessary, indicating the general vertical and lateral limits of aquifers within the applicable area of review, their positions relative to the formation or formations, or stratigraphic units the shaft is constructed to reach;

(5) the text of the report shall discuss the geology, hydrogeology, and groundwater use and development within the applicable area of review; and with respect to the shaft: design, construction, sealing, decommissioning, mechanical integrity, operating procedures, and monitoring.

(b) After an appropriate review, the executive director may modify the requirements for application of this section if he finds that additional information is required to evaluate the shaft, or that information required herein is not reasonably available and is not necessary for a full evaluation of the application.

§361.9. Procedures for Application.

(a) An application is administratively complete when received with all the information as required by Chapter 341 of this title (relating to Consolidated Permits), as appropriate, and this chapter.

(b) Application for a drilled or mined shaft permit shall be submitted with six copies of the completed application, including all reports and statements.

(c) The following shall be included in an application for a drilled or mined shaft permit:

(1) the manner in which financial assurances will be attained;

(2) an environmental assessment or environmental impact statement, if required by the Texas Water Code, §28.038;

(3) a decommissioning and closure plan;

(4) a fee, based on estimated cost of application processing and review, of not less than \$10,000, which shall include, but is not limited to, consultants' fees, lab work, personnel salaries, support services, travel expenses, computer time, and informational services;

(5) a letter from the Railroad Commission of Texas stating that drilling or mining of the proposed shaft and use of the proposed shaft will not endanger or injure any oil or gas formation or significantly limit the potential for future recovery of or exploration for oil or gas; and

(6) a statement of the current status of any litigation involving the project or proposed siting of the shaft.

(d) The executive director will submit to the Railroad Commission of Texas, Texas Department of Health, Texas Air Control Board, Texas Parks and Wildlife Department, and to the commissioners court of the affected county a copy of the application, including all amendments.

(e) The provisions of Chapter 357 of this title (relating to Permit Application) do not apply to the processing of new shaft applications under this subchapter.

§361.10. Permit Required.

(a) All shafts subject to this subchapter shall be specifically authorized by permit. Shafts serving the same underground working, or built as part of a single comprehensive ore body exploration or evaluation program,

may be included in one permit. Additional shafts to be added after the permit is issued may be authorized by permit amendment after a demonstration as in §361.11(b) of this title (relating to Construction Standards for Shafts).

(b) A permit shall include terms and conditions reasonably necessary to protect the major and minor aquifers from pollution. The permit shall include requirements regarding the construction, operation, and decommissioning of a new shaft and corrective action, if necessary, to prevent pollution resulting from inadequately constructed, completed, and abandoned boreholes within the area of review. In the event that, after construction of a new shaft has commenced, evidence indicates that a well within the area of review of a shaft might pose a hazard to a major or minor aquifer, the executive director may prescribe a corrective action plan and compliance schedule to remedy such hazard as a condition for continued construction, use, or operation.

§361.11. Construction Standards for Shafts.

(a) The provisions of this subchapter apply to new shafts within the department's jurisdiction.

(b) All shafts shall be constructed to prevent migration of fluids that may cause or allow the pollution of aquifers. Construction materials used in each shaft shall be designed for the life expectancy of the shaft.

(c) Appropriate surveys, logs, and other tests shall be conducted during the construction of shafts. All surveys, logs, and tests shall be interpreted by qualified persons.

(d) Any proposed changes or alterations to construction plans after permit issuance shall be filed with the executive director and approval obtained before incorporating such changes.

§361.12. Resident Inspector. The executive director may designate a resident inspector to oversee all phases of shaft activities. The resident inspector shall monitor compliance with the terms of the permit for all testing, construction, completion, and operation of the shaft and report to the executive director.

§361.13. Operating Standards.

(a) The construction, use, and operation of a new shaft shall be as authorized by the permit.

(b) All shafts must have mechanical integrity.

(1) A lined shaft or lined portion of a shaft has mechanical integrity if there is no significant leak or physical deterioration in the casing, liners, and seals, and if there is no detectable fluid movement through vertical fluid channels adjacent to the shaft which could cause pollution of an aquifer.

(2) An unlined shaft, or unlined portion of a shaft, has mechanical integrity if there is no detectable deterioration of the wallrock which could cause pollution of an aquifer.

(3) In the event that a lined shaft, unlined shaft, or portion of an unlined shaft may have inflows of groundwater, the executive director may require a shaft and mine water management plan be submitted as part of the shaft permit application.

(4) Mechanical integrity of the shaft (wallrock or casing, liners, and seals) must be demonstrated as required by the permit during the life of the shaft, and shall

be accomplished by a method approved by the executive director.

(c) Shafts lacking mechanical integrity shall undertake corrective maintenance actions.

(1) The permittee shall notify and obtain the approval of the executive director before commencing any corrective maintenance that is necessitated by failure to achieve or maintain mechanical integrity.

(2) The notification shall be in writing and shall include plans for the proposed work. The executive director may grant an exception to the requirement for prior written notification when immediate action is required.

§361.14. Monitoring and Reporting Standards.

(a) The permittee shall submit daily construction chronology reports to the executive director and to the resident inspector, if applicable, providing data for each day during the drilling or mining and casing or lining of the shaft. The data shall be presented in tabular form and shall report date, thickness and lithology penetrated, material settings and volumes, and problems.

(b) Within 90 days after the completion of the shaft, the permittee shall submit an engineering drawing showing the "as built" construction details of the shaft, liners and seals, including the depth, thickness, and lithology of the rock units penetrated in constructing the shaft.

(c) The permittee shall, prior to commencing construction, provide written notice to the executive director that a copy of the permit has been filed with the commissioners court for the county where the shaft is located.

(d) The permittee shall notify the executive director in writing of the anticipated first date when the shaft will be used or operated for its stated purpose at least 30 days prior to commencing use of the shaft. Compliance with all preoperation terms of the permit must occur prior to beginning operations.

(e) The permittee shall notify the executive director within 24 hours of the discovery of any unplanned leakage or other failure of the shaft or associated chambers.

(f) Within 90 days after the completion of a corrective maintenance action, a report shall be filed with the executive director providing the reason for the shaft corrective maintenance action and the details of all work performed and results of remedial action.

§361.15. Surface Facilities. Surface facilities must be constructed, maintained, and operated in compliance with applicable permits and rules governing that facility.

§361.16. Certification of Construction and Completion. Prior to commencing operations, the permittee must certify that the shaft was constructed and completed in compliance with permit requirements.

§361.17. Additional Requirements.

(a) The permittee shall keep complete and accurate records of:

- (1) all construction records;
- (2) mechanical integrity testing;
- (3) geotechnical testing;
- (4) water level and water quality testing;
- (5) record of postconstruction operations;
- (6) corrective maintenance actions; and
- (7) any additional information that the executive

director determines might reasonably affect the construction and operation of the shaft.

(b) All records or copies of all records shall be filed on-site and made available for review upon request by a representative of the department.

(c) The permittee shall retain, for the lifetime of the shaft and for at least five years after decommissioning, records of all information concerning the construction, use, and operation of the shaft.

(d) The permittee may be required, prior to commencing operations, to secure and maintain a performance bond or other equivalent form of financial assurance or guarantee, approved by the executive director, to assure:

(1) the costs to the department of monitoring and of on-site, full-time surveillance; and

(2) the cost to ensure the safe decommissioning and closure of the shaft.

(e) A permittee may satisfy the conditions of subsection (d) of this section by demonstrating as required by §341.193(c)-(o) of this title (relating to Financial Responsibility).

§361.18. *Decommissioning.* Shaft decommissioning and closure shall be in accordance with plans and specifications approved by the executive director. Decommissioning seals shall be placed in the shaft so as to prevent the migration of fluids into a major or minor aquifer. Shaft seal mix designs shall be based on formulations developed for borehole sealing and shall be compatible with existing lining, if applicable, and adjacent strata.

§361.19. *Appendix A.* Appendix A is a flow diagram of the procedures to obtain authorization for a drilled or mined shaft.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's authority to adopt.

Issued in Austin, Texas, on September 26, 1984.

TRD-849763

Susan Plettman
General Counsel
Texas Department of Water
Resources

Earliest possible date of adoption:

November 5, 1984

For further information, please call (512) 475-7851.

361.19 Appendix A

