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## Lust - Deep in the Heart of Texas: Federal EPA Regulations Affecting Underground Storage Tanks - The Texas Statutory and Regulatory Counterparts.

Blaine D. Edwards

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# COMMENT

## LUST—Deep in the Heart of Texas: Federal EPA Regulations Affecting Underground Storage Tanks—The Texas Statutory and Regulatory Counterparts

Blaine D. Edwards

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## I. INTRODUCTION

The United States Environmental Protection Agency (EPA) estimates there are approximately two million underground storage tanks (USTs) buried in the United States.<sup>1</sup> Of this amount, the Texas Water Commission reports there are more than 127,000 USTs registered in the State of Texas,<sup>2</sup> not including tanks exempt from registration.<sup>3</sup> Many types of businesses utilize USTs including service stations, petroleum bulk plants, municipal warehouses, school bus yards, farms, factories, private businesses, homes, and numerous other locations that store motor fuel, kerosene, jet fuel or other chemicals.<sup>4</sup> Problems arise when USTs contaminate underground water supplies, leak into the basements of homes or office buildings, or pollute streams and soil.<sup>5</sup> Congress considered these problems and directed the

1. *Underground Storage Tanks: Hearing Before the Subcomm. on Energy and Agriculture of the House Comm. on Small Business*, 100th Cong., 1st Sess. 15-17 (1987)(statement of Ronald Brand, Director, Office of Underground Storage Tanks, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency). The EPA estimate of two million USTs results from an extrapolation of registered tanks plus a factored number of unregistered tanks. *Id.*

2. Telephone interview with Tony Parlak, Underground Storage Tank Division-Registration, Texas Water Comm'n (Jan. 25, 1989)(127,240 USTs registered with Texas Water Commission as of January 25, 1989).

3. Act of May 31, 1989, ch. 228, § 1, 1989 Tex. Sess. Law Serv. 1007-08 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.344 (Vernon Supp. 1990)). This section conditionally exempts from regulation farm or residential fuel tanks of 1,100 gallons or less storage capacity when used for noncommercial purposes. *Id.* at 1007 (to be codified at TEX. WATER CODE ANN. § 26.344(a)(1)(Vernon Supp. 1990)). Additionally, this statute conditionally exempts heating oil tanks, septic tanks, surface pits, storm water systems, and flow-through process tanks. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.344(a)(2)-(6) (Vernon Supp. 1990)). Oil and gas production tanks, transformers or other electrical equipment, hazardous substance tanks in underground areas, pipelines, certain in-ground hydraulic systems, and certain aboveground storage tanks are also exempted from regulation. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.344(a)(7)-(8), (b)-(f)) (Vernon Supp. 1990); *see also id.* Tex. Water Comm'n, 14 Tex. Reg. 1180-1181 (1989), *adopted* 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.3) (statutory exclusions included in Texas regulations); Tex. Water Comm'n, 14 Tex. Reg. 4734 (1989) (codified at 31 TEX. ADMIN. CODE § 334.4)(commission exclusions from regulation and registration).

4. *See* M. ITALIANO, LIABILITY FOR UNDERGROUND STORAGE TANKS 1-2 (1987)(list of possible users of UST systems). This source also discusses various statutes governing leaking underground storage tanks (LUST), common-law liability for LUST, insurance considerations, and management of leaking tank cases. *Id.* at 1-219.

5. *See* *Socony Mobil Co. v. Southwestern Bell Tel. Co.*, 518 S.W.2d 257, 260-61 (Tex. Civ. App.—Corpus Christi 1974, no writ)(service station tanks leaked into underground conduit beneath street); *Vestal v. Bost*, 212 S.W.2d 847, 850 (Tex. Civ. App.—Fort Worth 1948, writ ref'd n.r.e.) (plaintiff's home situated adjacent to USTs); *Continental Oil Co. v. Berry*, 52 S.W.2d 953, 954 (Tex. Civ. App.—Fort Worth 1932, writ ref'd)(gasoline from leaking underground storage tank entered owner's water well); *see also* Comment, *Lust And The Common Law: A Marriage of Necessity*, 13 B.C. ENVTL. AFF. L. REV. 521, 527-29 (1986)(discusses

EPA in the Resource Conservation and Recovery Act<sup>6</sup> (RCRA) to establish regulations concerning underground storage tanks.<sup>7</sup>

In addition to the federal regulations,<sup>8</sup> the Texas Water Commission has promulgated additional regulations governing USTs.<sup>9</sup> This comment outlines the EPA financial responsibility<sup>10</sup> and technical regulations,<sup>11</sup> and discusses the current Texas statutes and regulations and how they differ from

documented leaking underground storage tank situations). Two specific instances of leaking underground storage tank contamination of underground aquifers have occurred in Canob Park, Rhode Island and in Provincetown, Massachusetts. *Id.* In Canob Park, gasoline contaminated a residential water well and rendered the nearby residents' water supply unfit for any use. *Id.* at 527. In Provincetown, an underground storage tank at a local service station leaked almost 3,000 gallons of gasoline into the local groundwater resulting in serious damage to the municipal water supply. *Id.* at 528.

6. Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6991 (1987). Congress amended RCRA in 1984 to address growing concerns about underground storage tanks. Section 6991 defines the term "underground storage tank" and lists the exemptions from regulation. Additionally, the statute requires owners of USTs to notify appropriate state agencies about existing tanks and releases of regulated substances. *Id.* RCRA also requires approval of state programs, calls for tank inspections, outlines federal enforcement, and allows concurrent state regulation. *Id.* See generally M. ITALIANO, LIABILITY FOR UNDERGROUND STORAGE TANKS 25-39 (1987)(discussing RCRA Subtitle I amendments and estimated costs for LUST cleanup); Marks, *Toward a National Groundwater Act: Current Contamination and Future Courses of Action*, 61 FLA. B.J. 10, 10-16 (April 1987)(discusses RCRA amendments and groundwater contamination legislation).

7. 42 U.S.C. §§ 6991(a)-6991(g) (1987); see also *Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective*, 53 Fed. Reg. 43,322-383 (1988) (to be codified at 40 C.F.R. §§ 280.90-.111)(final financial responsibility rules). The new federal regulations became effective January 24, 1988. *Id.* at 43,322. They list the financial responsibility requirements for UST operators, requirements for insurance, recordkeeping and approval of state UST programs. *Id.* at 43,326-383 (to be codified at 40 C.F.R. §§ 280.90-281.37); see also *Underground Storage Tanks; Technical Requirements*, 53 Fed. Reg. 37,194-212 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74)(final UST technical rules). This section of the rules lists the technical requirements for USTs and the effective dates thereof. *Id.*

8. *Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective*, 53 Fed. Reg. 43,370-82 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111); *Underground Storage Tanks; Technical Requirements*, 53 Fed. Reg. 37,194-212 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74).

9. Tex. Water Comm'n, 14 Tex. Reg. 1171-1269 (1989), *adopted* 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989)(codified at 31 TEX. ADMIN. CODE §§ 334.3, .13, .42, .53-.54, .77-.79, .82-.84, .91, .93-.94, .97-.103)(current Texas regulations printed in March 10, 1989 issue); Tex. Water Comm'n, 14 Tex. Reg. 4729-4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.1-.2, .4-.12, .41, .43-.52, .55, .71-.76, .80-.81, .85, .92, .95-.96, .104-.109)(current Texas regulations printed in September 15, 1989 issue).

10. *Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective*, 53 Fed. Reg. 43,370-82 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111)(UST financial responsibility regulations).

11. *Underground Storage Tanks; Technical Requirements*, 53 Fed. Reg. 37,194-212 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74)(technical regulations for USTs).

their federal counterparts.<sup>12</sup>

## II. BACKGROUND OF LEAKING UNDERGROUND STORAGE TANKS

### A. *Definition and Location of Underground Storage Tanks*

The federal statute and regulations define an underground storage tank as a tank that has more than ten percent of its volume underground, including all connected underground piping.<sup>13</sup> Underground storage tanks commonly contain gasoline, kerosene, diesel, motor oil, sewage, chemicals and other substances.<sup>14</sup> USTs usually are found at gasoline stations,<sup>15</sup> although petroleum bulk plants, refineries, farmers, small businesses, and governmental entities also use USTs.<sup>16</sup> The subsurface location of many USTs places them near fresh water wells, underground aquifers, homes, businesses, schools and other property.<sup>17</sup> Consequently, even small amounts of leakage from an un-

12. Compare Tex. Water Comm'n, 14 Tex. Reg. 4729-4784 (1989)(to be codified at 31 TEX. ADMIN. CODE §§ 334.1-.2, .4-.12, .41, .43-.52, .55, .71-.76, .80-.81, .85, .92, .95-.96, .104-.109)(Texas UST regulations contained in September 15, 1989 Texas Register) and Tex. Water Comm'n, 14 Tex. Reg. 1176-1269 (1989), adopted Tex. Water Comm'n, 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.3, .13, .42, .53-.54, .77-.79, .82-.84, .91, .93-.94, .97-.103)(UST regulations contained in March 10, 1989 Texas Register) with Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-212 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74)(federal technical regulations) and Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370-83 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111)(federal financial responsibility regulations).

13. 42 U.S.C. § 6991(1) (Supp. V 1987); Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988)(to be codified at 40 C.F.R. § 280.12). The regulations define an "underground storage tank" as any storage tank and its connected piping which has 10% or more of its total system volume underground. *Id.*

14. 2 OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, PROTECTING THE NATION'S GROUNDWATER FROM CONTAMINATION 277 (1984)(discussion of substances stored in USTs).

15. *Id.* at 278. The report states that service stations account for approximately 1.2 million steel underground tanks. *Id.* Thus, service station tanks comprise almost 50% of the total estimated number of steel tanks (2.4 million) cited in the report. *Id.* See generally 1 OFFICE OF PESTICIDES AND TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, UNDERGROUND MOTOR FUEL STORAGE TANKS: A NATIONAL SURVEY 1 (1986)(nationwide survey results of LUSTs).

16. 2 OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, PROTECTING THE NATION'S GROUNDWATER FROM CONTAMINATION 277 (1984)(discussion of common owners of USTs); see also M. ITALIANO, LIABILITY FOR UNDERGROUND STORAGE TANKS 2 (1987)(lists common UST owners).

17. See 2 OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, PROTECTING THE NATION'S GROUNDWATER FROM CONTAMINATION 277 (1984)(USTs concentrated in high population areas); see also *Socony Mobil Co. v. Southwestern Bell Tel. Co.*, 518 S.W.2d 257, 260-61 (Tex. Civ. App.-Corpus Christi 1974, no writ)(USTs located at service station leaked into underground conduit beneath street); *Vestal v. Bost*, 212 S.W.2d 847, 850 (Tex. Civ.

derground storage tank may lead to serious consequences.<sup>18</sup>

### B. *Why Do Underground Storage Tanks Leak?*

Two basic types of tanks comprise the bulk of USTs commonly used today: steel tanks and fiberglass tanks.<sup>19</sup> Currently, single wall and double wall steel tanks account for the majority of USTs.<sup>20</sup> Corrosion is the major cause of leaks in steel tanks and underground piping.<sup>21</sup> The second major cause is faulty installation.<sup>22</sup> Fiberglass reinforced plastic (FRP) tanks are a

App.—Fort Worth 1948, writ ref'd n.r.e.)(UST adjacent to plaintiff's home); *Continental Oil Co. v. Berry*, 52 S.W.2d 953, 954 (Tex. Civ. App.—Fort Worth 1932, writ ref'd)(owner's water well contaminated by gasoline from nearby UST).

18. See *Continental Oil*, 52 S.W.2d at 954 (gasoline leaked from UST and made water well unfit for some domestic purposes); see also Comment, *Lust And The Common Law: A Marriage of Necessity*, 13 B.C. ENVTL. AFF. L. REV. 521, 527-29 (1986)(case history of leaking tanks resulting in serious damage). Two specific instances of contamination of underground aquifers by LUSTs have occurred in Canob Park, Rhode Island and in Provincetown, Massachusetts. *Id.* In Canob Park, gasoline contaminated a residential water well and rendered the nearby residents' water supply unfit for any use. *Id.* at 527. "The water was so contaminated [that] it was . . . ignitable!" *Id.* at 528. In Provincetown, an UST at a local service station leaked almost 3,000 gallons of gasoline into the groundwater. *Id.* The town's water supply was seriously damaged, and more than 1.4 million dollars was spent to cleanup the contamination. *Id.* at 529.

19. EXPOSURE EVALUATION DIVISION, OFFICE OF TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, MORE ABOUT LEAKING UNDERGROUND STORAGE TANKS: A BACKGROUND BOOKLET FOR THE CHEMICAL ADVISORY 36-40 (1984)(discussing various types of USTs and characteristics); see also ENVIRONMENTAL MONITORING SYSTEMS LABORATORY, OFFICE OF RESEARCH AND DEVELOPMENT, U.S. ENVIRONMENTAL PROTECTION AGENCY, PROCESSES AFFECTING SUBSURFACE TRANSPORT OF LEAKING UNDERGROUND TANK FLUIDS 1-1 to 1-3 (1987)(technical discussion of steel and fiberglass underground tank environments). This report also outlines various causes of LUSTs and provides a diagram of an underground storage tank installation. *Id.* at 1-3 to 1-4. The remainder of the report contains a technical discussion of liquid and vapor flow from an UST, soil surface conditions, and subsurface biological activity for monitoring USTs. *Id.* at 2-1 to 5-4.

20. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,088-89 (1988).

21. EXPOSURE EVALUATION DIVISION, OFFICE OF TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, MORE ABOUT LEAKING UNDERGROUND STORAGE TANKS: A BACKGROUND BOOKLET FOR THE CHEMICAL ADVISORY 35-38 (1984); OFFICE OF TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAKING UNDERGROUND STORAGE TANKS CONTAINING MOTOR FUELS: A CHEMICAL ADVISORY 1 (1984). See generally *Installation: The Achilles Heel of Underground Tank Precautions*, NAT'L PETROLEUM NEWS, Aug. 1987, 44, 44-45 (discusses corrosion of USTs along with installation and EPA guidelines).

22. EXPOSURE EVALUATION DIVISION, OFFICE OF TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, MORE ABOUT LEAKING UNDERGROUND STORAGE TANKS: A BACKGROUND BOOKLET FOR THE CHEMICAL ADVISORY 35 (1984)(improper installation a major cause of LUST); see also *Installation: The Achilles Heel of Underground Tank Precautions*, NAT'L PETROLEUM NEWS, Aug. 1987 44, 44-46 (UST installation weakest link).

fairly recent development in tank technology and currently account for approximately twenty percent of the total number of USTs.<sup>23</sup> The major cause of fiberglass tank leaks is improper tank installation resulting in structural failure.<sup>24</sup>

### C. *What is Wrong with Leaking Underground Storage Tanks?*

Federal regulations require UST monitoring systems to detect leaks of as little as .2 gallons per hour.<sup>25</sup> Furthermore, owners of USTs must conduct tightness tests that can detect leaks of .1 gallon per hour.<sup>26</sup> Although these amounts seem minuscule, over the course of one year a leak of .1 gallon per hour could result in 876 gallons of gasoline settling in an adjacent basement, water well or aquifer.<sup>27</sup> An EPA survey estimates that one gallon of gasoline could contaminate a water supply for a city of 50,000 people.<sup>28</sup> Today, almost sixty percent of Texans depend on groundwater for their drinking water.<sup>29</sup> Considering Texas has 127,240 registered USTs,<sup>30</sup> the new federal<sup>31</sup>

23. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,088-89 (1988). Fiberglass tanks were developed almost 20 years ago and are very resistant to corrosive substances. *Id.* at 37,089.

24. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,088-89 (1988). Improper installation is the most frequent cause of fiberglass reinforced plastic (FRP) tank failures. *See* EXPOSURE EVALUATION DIV., OFFICE OF TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY, MORE ABOUT LEAKING UNDERGROUND STORAGE TANKS: A BACKGROUND BOOKLET FOR THE CHEMICAL ADVISORY 38 (1984)(discussion of fiberglass tanks). *See generally* *Installation: The Achilles Heel Of Underground Tank Precautions*, NAT'L PETROLEUM NEWS, Aug. 1987, 44, 44-46 (outlines problems and concerns for installing UST's).

25. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,202 (1988)(to be codified at 40 C.F.R. § 280.43(d)). The federal rules set a .2 gallons per hour standard for automatic tank gauging systems (ATGS). *Id.* at 37,160.

26. *Id.* at 37,159 (to be codified at 40 C.F.R. § 280.43(c)).

27. For example, .1 gal/hr × 24 hrs = 2.4 gals/day × 365 days = 876 gals/yr. In 3 hours an UST leaking at the rate of .1 gals/hr will discharge a little more than a quart of gasoline into the surrounding soil.

28. M. ITALIANO, LIABILITY FOR UNDERGROUND STORAGE TANKS 3 (1987).

29. Fisher, *The Groundwater Protection Act: Can We Live Without It?*, TEXAS OIL MARKETER, Oct.-Dec. 1988, 17, 17. Fresh water supplies for Texas come primarily from reservoirs or aquifers. *Id.*

30. Telephone interview with Tony Parlak, Underground Storage Tank Division-Registration, Texas Water Comm'n (Jan. 25, 1989). The Texas Water Commission reports 127,240 registered USTs as of January 25, 1989.

31. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-207 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74)(technical regulations for USTs); *see also* Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370-382 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111)(financial responsibility regulations for USTs).



and state regulations<sup>32</sup> take on critical importance because the EPA estimates that ten to twenty-five percent of all USTs either presently leak or may someday leak.<sup>33</sup>

### III. FINANCIAL RESPONSIBILITY REQUIREMENTS UNDER THE NEW EPA REGULATIONS

#### A. *Scope and Applicability of the Regulations*

The new EPA rules governing the financial responsibility (FR) requirements for UST operators<sup>34</sup> and owners<sup>35</sup> came into effect on January 24, 1989.<sup>36</sup> The EPA estimates that approximately 468,000 separate UST facilities will fall within the new rules.<sup>37</sup> Entities subject to the financial responsi-

32. Tex. Water Comm'n, 14 Tex. Reg. 1171-1269 (1989), *adopted* 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989)(codified at 31 TEX. ADMIN. CODE §§ 334.3, .13, .42, .53-.54, .77-.79, .82-.84, .91, .93-.94, .97-.103)(current Texas regulations printed in March 10, 1989 issue); Tex. Water Comm'n, 14 Tex. Reg. 4729-4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.1-.2, .4-.12, .41, .43-.52, .55, .71-.76, .80-.81, .85, .92, .95-.96, .104-.109)(current Texas regulations printed in September 15, 1989 issue).

33. *Underground Storage Tanks: Hearing Before the Subcomm. on Energy and Agriculture of the House Comm. on Small Business*, 100th Cong., 1st Sess. 14-17 (1987)(statement of Ronald Brand, Director, Office of Underground Storage Tanks, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency). Mr. Brand stated that approximately 10% to 20% of existing USTs will leak at some time. *Id.*; see also OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT 1 (1988)(EPA estimates approximately 25% of all USTs now leak).

34. See *Underground Storage Tanks; Technical Requirements*, 53 Fed. Reg. 37,196 (1988)(to be codified at 40 C.F.R. § 280.12) (an operator defined as any person having responsibility for, or in control of, day-to-day operations of UST system).

35. For the purposes of the regulations an owner is:

- (a) In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
- (b) In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

*Id.*

36. *Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective*, 53 Fed. Reg. 43,322 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111). Although the Federal Register lists the effective date as January 24, 1988, the final rule was published on October 26, 1988. *Id.* It is likely that a misprint occurred because the publication of final rules generally must occur at least 30 days prior to the effective date. 5 U.S.C. § 553(d) (1989). In fact, the EPA issued a correction date stating the regulations became effective on January 24, 1989. 53 Fed. Reg. 44,976 (1988). For the purposes of the FR requirements, an owner or operator refers to the party obtaining or who has obtained financial assurance. *Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective*, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.92(h)).

37. *Underground Storage Tanks Containing Petroleum-Financial Responsibility Require-*

bility regulations will include all owners and operators of UST facilities<sup>38</sup> with four exceptions: 1) USTs excluded by definition;<sup>39</sup> 2) UST systems containing hazardous wastes,<sup>40</sup> wastewater,<sup>41</sup> regulated substances for lift and

ments and State Program Approval Objective, 53 Fed. Reg. 43,368 (1988). Of this amount, over 40% of the affected establishments will constitute retail motor fuel outlets. Additionally, the EPA estimates the rules will affect more than 30,500 farms, 29,000 local governmental facilities, and 192,000 general business owners with UST systems. The present value cost of the financial and technical rules for UST systems over the next 30 years will exceed \$70,000,000,000. *Id.*

38. *Id.* at 43,370 (to be codified at 40 C.F.R. § 280.90(a)). Operators and owners of USTs de-activated before the compliance dates of the FR rules do not have to obtain financial assurance for those tanks. *Id.* at 43,327. Codification of this section occurs at 40 C.F.R. § 280.90(b). *Id.* at 43,370.

39. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988)(to be codified at 40 C.F.R. § 280.12). The term UST does not include:

- (a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
- (b) Tank used for storing heating oil for consumptive use on the premises where stored;
- (c) Septic tank;
- (d) Pipeline facility (including gathering lines ) regulated under:
  - (1) The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671 *et seq.*), or
  - (2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, *et seq.*), or
  - (3) Which an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition;
- (e) Surface impoundment, pit, pond, or lagoon;
- (f) Storm-water or waste-water collection system;
- (g) Flow-through process tank;
- (h) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or
- (i) Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term "underground storage tank" or "UST" does not include any pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.

*Id.* These tanks will not be subject to the FR rules because only UST systems must comply. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(a)).

40. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d)). The FR requirements do not apply to the UST systems excluded from the regulations listed in 40 C.F.R. § 280.10 (b)-(c). *Id.*; see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194 (1988)(to be codified at 40 C.F.R. § 280.10(b)(1))(specific exclusions from the FR and technical rules). The exclusions from the FR rules include UST systems that hold hazardous waste. *Id.* (to be codified at 40 C.F.R. § 280.10(b)(1)). Hazardous substances identified in subtitle C of the Solid Waste Disposal Act also fall under this section. *Id.* The EPA believed that congressional intent was best followed by not having multiple programs govern the storage of hazardous wastes. *Id.* at 37,107.

electrical equipment,<sup>42</sup> less than 110 gallons,<sup>43</sup> a de minimis amount of regulated substances,<sup>44</sup> or any UST spill or overflow containment system;<sup>45</sup> 3) UST systems used for wastewater treatment,<sup>46</sup> containment of radioactive material,<sup>47</sup> emergency power generating systems at nuclear plants,<sup>48</sup> airport

41. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d)). The FR rules exclude certain types of tanks and direct the researcher to the UST Technical Standards. *Id.*; see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194 (1988)(to be codified at 40 C.F.R. § 280.10(b)(2))(specific exclusion from technical and FR rules).

42. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(excludes UST systems listed in 40 C.F.R. § 280.10(b)-(c)); see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(b)(3))(electrical equipment tanks and hydraulic lift tanks excluded from technical and FR regulation).

43. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d)); see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(b)(4))(tanks holding 110 gallons or less excluded from FR and technical regulations).

44. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(UST systems described in 40 C.F.R. § 280.10(b) excluded from FR regulations); see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(b)(5))(EPA intended to exclude from FR and technical regulation those tanks that contain de minimis amounts of regulated substances). The state implementing agencies will determine this exclusion on a case-by-case basis. *Id.* at 37,108. Examples would include accidental contamination of an UST by a regulated substance or USTs that store food containing regulated preservatives. *Id.*

45. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d)). Specific exclusion from the FR regulations include listed UST systems in 40 C.F.R. § 280.10(b)-(c). *Id.*; see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.(b)(6))(emergency overfill and spill containment devices exempted from federal technical and FR regulations if emptied immediately after use).

46. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(exclusions from FR requirements listed in 40 C.F.R. § 280.10(b)-(c)); see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(c)(1))(EPA technical regulations also excuse wastewater treatment tanks from FR compliance and technical regulation compliance except for subparts A and F). Interim technical regulations do, however, govern these types of USTs and should be consulted when a question arises. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.11).

47. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d)). The FR regulations exclude several types of USTs listed in 40 C.F.R. § 280.10(b)-(c). *Id.*; see also Underground Storage Tanks; Technical Requirements, 53 Fed.

hydrant fuel systems,<sup>49</sup> and systems with field-constructed tanks<sup>50</sup> will be deferred from many of the technical regulations<sup>51</sup> plus FR exclusion;<sup>52</sup> and 4) state and federal governments.<sup>53</sup> Only one person, either the owner or the

Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(c)(2))(in addition to exemption from FR regulations technical regulations do not cover USTs used to store radioactive materials except subparts A and F). Interim technical regulations, however, do govern radioactive materials stored in USTs and should be consulted if a question arises. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.11).

48. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(FR regulations exclude USTs listed in 40 C.F.R. § 280.10(b)-(c)); *see also* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(c)(3))(EPA financial responsibility and technical regulations exempt USTs used for emergency generator systems at nuclear power plants except for technical requirements contained in subparts A and F). Interim technical regulations, however, govern emergency generator USTs and should be consulted if a question arises. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.11).

49. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(FR regulations exempt USTs enumerated in 40 C.F.R. § 280.10(b)-(c)); *see also* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(c)(4))(EPA technical and FR regulations exclude airport hydrant fuel except for subparts A and F of technical regulations). Interim technical regulations, however, do govern airport hydrant systems and should be consulted if questions arise on this specific subject. *Id.* (to be codified at 40 C.F.R. § 280.11). An airport hydrant fuel system utilizes bulk storage tanks that may be located either above or below ground. *Id.* at 37,113. In day-to-day operation, hydrant fuel systems use underground piping to deliver fuel to numerous aircraft refueling locations on the property. *Id.*

50. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(excludes USTs listed in 40 C.F.R. § 280.10(c)-(d) from FR requirements); *see also* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,195 (1988)(to be codified at 40 C.F.R. § 280.10(c)(5))(excluded from FR and technical regulations except subparts A and F of technical regulations). Interim technical regulations, however, do govern this section and will be codified at 40 C.F.R. § 280.11. *Id.* (to be codified at 40 C.F.R. § 280.11). Field-constructed tanks do not include tanks principally manufactured at the factory and assembled at the UST location. *Id.* at 37,110. Field-constructed tanks can be built from steel or concrete but will usually contain more than 50,000 gallons of product. *Id.*

51. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.10(c)). These USTs must comply with interim prohibitions in the technical regulations and the regulations contained in subpart F to the technical regulations. *Id.* at 37,195, 37,204-06 (to be codified at 40 C.F.R. §§ 280.11, 280.60-.67).

52. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370 (1988)(to be codified at 40 C.F.R. § 280.90(d))(deferred USTs listed in 40 C.F.R. § 280.10(b)-(c) excluded from FR regulations).

53. *Id.* (to be codified at 40 C.F.R. § 280.90(c)). The rule states: "State and Federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt [from the FR regulations]." *Id.* State and federal governments enjoy

operator of the UST, must demonstrate financial responsibility.<sup>54</sup> In the event of noncompliance both parties will share liability.<sup>55</sup> Consequently, the new FR regulations will cover almost all of the 127,240 UST systems currently registered in Texas.<sup>56</sup>

### B. *Compliance Timetable and Amounts of Required Responsibility*

Even though the FR regulations were issued on October 26, 1988,<sup>57</sup> most owners and operators with smaller operations have a grace period until they must meet the FR requirements.<sup>58</sup> The number of USTs owned by the entity,<sup>59</sup> the size of entity,<sup>60</sup> and the type of entity<sup>61</sup> comprise the determina-

exemption from the FR requirements because the EPA seeks to ensure the availability of funds in case of product release. *Id.* at 43,327. Even without the FR requirements, state and federal governments must pay for the corrective action costs resulting from product release. *Id.* at 43,328.

54. *Id.* at 43,370 (to be codified at 40 C.F.R. § 280.90(e)).

55. *Id.*

56. *Compare* Act of May 31, 1989, ch. 228, § 1, 1989 Tex. Sess. Law Serv. 1007-08 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.344 (Vernon Supp. 1990))(section 26.344 of Texas Water Code lists specific statutory exemptions for USTs) *and* Tex. Water Comm'n, 14 Tex. Reg. 4734 (1989) (codified at 31 TEX. ADMIN. CODE § 334.4(a)-(b))(complete and partial exclusions from TWC financial responsibility regulations) *with* 42 U.S.C. § 6991(1)(A)-(I) (Supp. IV 1986)(section details definition of UST and tanks not included in definition) *and* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988)(to be codified at 40 C.F.R. § 280.12)(section contains same definition as 42 U.S.C. § 6991(1)(A)-(I) along with identical exclusions); *see also* 42 U.S.C. § 6991(3)(A), (6), 6991a(a)(1)(Supp. V 1987)(owner of UST includes "person" which can include United States Government who must register USTs).

57. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,322 (1988).

58. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.91(a)-(d)). The largest firms must meet FR requirements by January 24, 1989. *Id.* (to be codified at 40 C.F.R. § 280.91(a)). Depending on the number of USTs, other owners have from October 26, 1989 until October 26, 1990 to comply. *Id.* (to be codified at 40 C.F.R. § 280.91(b)-(d)).

59. *Id.* at 43,371 (to be codified at 40 C.F.R. § 280.91(a)-(d)). The number of USTs owned is a critical factor in determining the effective dates of FR compliance. *Id.* Three out of the four sections of 40 C.F.R. § 280.91 contain phase-in requirements based on the number of USTs owned. *Id.* (to be codified at 40 C.F.R. § 280.91(a)-(c)).

60. *Id.* "[A]ll other UST owners that report a tangible net worth of \$20 million or more [reported] to the U.S. Securities and Exchange Commission (SEC), Dun and Bradstreet, the Energy Information Administration, or the Rural Electrification Administration," must comply with the FR requirements by January 24, 1989. *Id.* (to be codified at 40 C.F.R. § 280.91(a)). The rules define "tangible net worth" as tangible assets minus liabilities. *Id.* (to be codified at 40 C.F.R. § 280.92(n)). Tangible assets "do not include intangibles such as goodwill and rights to patents or royalties." *Id.* Additionally, "assets" is defined as "all existing and all probable future economic benefits obtained or controlled by a particular entity as a result of past transactions." *Id.*

tive factors for compliance deadlines. Entities owning an UST and having a tangible net worth<sup>62</sup> greater than \$20,000,000<sup>63</sup> and petroleum marketing firms with 1,000 or more USTs must have demonstrated financial responsibility by January 24, 1989.<sup>64</sup> Consequently, the largest petroleum marketing firms and public companies must have already complied with the FR regulations.<sup>65</sup> For the remaining UST owners, petroleum marketing firms with 100 to 999 USTs face an October 26, 1989 deadline to meet FR compliance guidelines.<sup>66</sup> Petroleum marketing firms with thirteen to ninety-nine USTs located at multiple facilities must comply by April 26, 1990.<sup>67</sup> All other petroleum UST owners, including local governmental entities, have an October 26, 1990 deadline.<sup>68</sup>

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61. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.92(a)-(c))(petroleum marketing firms specifically listed). The regulations define petroleum marketing firms as those firms that own petroleum marketing facilities. *Id.* (to be codified at 40 C.F.R. § 280.92(j)). A petroleum marketing facility includes "all facilities at which petroleum is produced or refined and all facilities at which petroleum is sold or transferred to other petroleum marketers or to the public." *Id.* (to be codified at 40 C.F.R. § 280.92(i)). Examples of what the EPA does and does not consider to be petroleum marketing facilities is discussed in the October 26, 1988 Federal Register. *Id.* at 43,330. The EPA considers gas stations, bulk plants, truck stops, convenience stores, and "all facilities selling petroleum products to the public to be retail petroleum marketing facilities, even if the amount of petroleum sold is minimal," to constitute petroleum marketing facilities. The agency also considers other facilities than the ones listed to fall within this definition. *Id.*

62. *Id.* at 43,371 (to be codified at 40 C.F.R. § 280.92(n)). The regulations define "tangible net worth" as:

[T]he tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity as a result of past transactions.

*Id.*

63. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.91(a)). Studies conducted by the EPA indicate that most firms in this category can meet the self-insurance requirements provided they submit financial statements to the respective governmental agencies or Dun and Bradstreet. *Id.* at 43,331. Tangible net worth data submitted to Dun and Bradstreet must receive a 4A or 5A rating to qualify for the financial test of self-insurance. *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.95(b)(4)(ii)).

64. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.91(a)).

65. *Id.*

66. *Id.* (to be codified at 40 C.F.R. § 280.91(b)). The EPA also provides a compliance date and category table with the comments to the FR rules. *Id.* at 43,330.

67. *Id.* at 43,371 (to be codified at 40 C.F.R. § 280.91(c)).

68. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.91(d)).

With the compliance dates in mind, the logical question is how much financial responsibility must an UST owner or operator demonstrate? Estimated cleanup costs per spill for a leaking underground storage tank (LUST) can range from \$100,000 to \$2,000,000 or more;<sup>69</sup> therefore, UST owners must demonstrate \$500,000 to \$2,000,000 financial responsibility<sup>70</sup> to cover accidental UST releases<sup>71</sup> because protection of the environment and human health constitutes the main rationale behind the new rules.<sup>72</sup> An owner or operator must consider two different amounts when securing the FR required under this section: per-occurrence amounts<sup>73</sup> and annual aggregate amounts.<sup>74</sup>

The FR regulations require \$1,000,000 in per-occurrence coverage for operators or owners of petroleum USTs located at petroleum marketing facili-

69. OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT 1 (1988)(discusses estimated LUST cleanup costs); Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,337 (1988)(insurers report no release costs exceeding \$2,000,000).

70. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.93). Owners and operators must demonstrate the requisite FR to pay for corrective action and compensation of third parties for property damage or bodily injury. *Id.* The regulations define bodily injury according to state law, but this definition will not include liabilities commonly excluded from coverage by the insurance industry in liability policies for bodily injury. *Id.* (to be codified at 40 C.F.R. § 280.92(b)). Property damage will also be defined according to state law but will not include liabilities commonly excluded from coverage by the insurance industry in liability policies for property damage. *Id.* (to be codified at 40 C.F.R. § 280.92(k)). Property damage policies, however, shall not exclude corrective action costs (i.e. cleanup of the site, soil removal) due to UST releases covered by the policy. *Id.*

71. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.92(a)). An accidental release is any release of petroleum contained in an UST resulting in compensation for property damage, bodily injury or a need for corrective action which is neither intended nor expected by the UST owner or operator. *Id.*

72. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,083 (1988)(background information and operating principles for EPA rules).

73. *Id.* (to be codified at 40 C.F.R. § 280.93(a)(1)-(2))(per-occurrence coverage for accidental releases listed). An owner or operator must maintain FR that will provide the appropriate level of coverage for individual UST releases. *Id.* at 43,336. The EPA believes that the per-occurrence coverage amounts specified for the different types of operators in 40 C.F.R. 280.93(a)(1)-(2) will result in adequate financial responsibility levels to cover the expenses of 99% of UST releases. *Id.*

74. *Id.* at 43,371 (to be codified at 40 C.F.R. § 280.93(b)(1)(2)). In addition to per-occurrence coverage, an operator or owner must also maintain annual aggregate coverage of either \$1,000,000 or \$2,000,000 depending upon the number of petroleum USTs operated. *Id.* The EPA provides an in-depth discussion of the reasons behind the aggregate coverage levels in subpart D of the Section-by-Section Analysis in the October 26, 1988 Federal Register. *Id.* at 43,335-38.

ties.<sup>75</sup> Additionally, any UST facility used for petroleum storage that handles more than 10,000 gallons per month, based on a yearly average, must provide \$1,000,000 FR coverage per-occurrence.<sup>76</sup> All other operators or owners of USTs used for petroleum storage must maintain \$500,000 FR coverage per-occurrence.<sup>77</sup>

In addition to the per-occurrence FR requirements, operators or owners with petroleum USTs must maintain annual aggregate amounts of FR.<sup>78</sup> At the high end, an owner or operator must demonstrate \$2,000,000 in annual aggregate FR if he owns more than 100 petroleum USTs.<sup>79</sup> Anyone who owns or operates 100 USTs or less for petroleum storage must maintain annual aggregate FR coverage of \$1,000,000.<sup>80</sup> Thus an owner required to maintain \$500,000 per-occurrence FR (for each incident where an UST leaks) still must maintain a total policy of \$1,000,000 (which would cover two LUST incidents) to meet the annual aggregate FR requirements.<sup>81</sup>

To calculate annual aggregate amounts, an operator or owner must count each individual tank to arrive at a total number of USTs.<sup>82</sup> If an operator or

75. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.93(a)(1)). By definition, a petroleum marketing facility includes all facilities where petroleum is refined, produced, sold, or transferred to the public or other petroleum marketers. *Id.* (to be codified at 40 C.F.R. § 280.92(i)).

76. *Id.* (to be codified at 40 C.F.R. § 280.93(a)(1)). This section is not limited to just petroleum marketing facilities but includes all petroleum UST facilities that handle more than 10,000 gallons per month. *Id.*

77. *Id.* (to be codified at 40 C.F.R. § 280.93(a)(2)).

78. *Id.* (to be codified at 40 C.F.R. § 280.93(b)). Operators and owners must provide annual aggregate levels of FR to provide for corrective action, bodily injury, or property damage resulting from accidental petroleum UST releases. *Id.* Compliance levels for this section are based on the total number of USTs as outlined in Table 3-Aggregate Schedule. *Id.* at 43,337 (to be codified at 40 C.F.R. § 280.93(b)(1)-(2)). In setting coverage levels of \$1,000,000 and \$2,000,000, depending upon the number of USTs, the EPA sought to require aggregate FR amounts that would "provide adequate funding 99% of the time." *Id.* at 43,336.

79. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.93(b)(2)).

80. *Id.* (to be codified at 40 C.F.R. § 280.93(b)(1)).

81. *See* Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.93(a)(2)). For example, a plumbing company with one UST which handles less than 10,000 gallons per month would have to demonstrate FR of only \$500,000 per-occurrence. *See id.* The annual aggregate regulation, however, requires the plumbing company to maintain a \$1,000,000 policy because the company would have between 1 to 100 USTs, which in effect would cover two possible UST releases. *See id.* (to be codified at 40 C.F.R. § 280.93(b)(1)).

82. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371 (1988)(to be codified at 40 C.F.R. § 280.93(c)). Counting multiple USTs linked by equalization pipes or other devices as



owner installs additional USTs during the year, such that a different annual aggregate category will apply (more than 100 USTs), the operator or owner must increase his annual aggregate FR coverage before the effective anniversary date of the earliest occurring insurance policy or other coverage device.<sup>83</sup> An owner or operator may combine any of the approved FR mechanisms<sup>84</sup> to provide FR for bodily injury, property damage, or corrective action.<sup>85</sup> The required coverage, however, excludes legal defense costs<sup>86</sup> and does not limit the liability of the operator or owner for damages caused by the leakage.<sup>87</sup> When an operator or owner uses two or more different FR mechanisms to meet regulatory requirements, he must provide full FR for each method of coverage and type of injury covered.<sup>88</sup>

C. *What are the Allowable Financial Responsibility Mechanisms and How Can You Combine Them?*

A financial responsibility mechanism is any combination of the following approved instruments as long as two elements are met and minimum FR

one tank is incorrect. An operator or owner must count each tank individually for purposes outlined in 40 C.F.R. § 280.93(b) and (f). *Id.*

83. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372 (1988)(to be codified at 40 C.F.R. § 280.93(f)). The regulation allows the extra time between the addition of USTs requiring a higher level of FR and the implementation of the new level of FR because letters of credit and insurance policies commonly have one-year terms. *Id.* at 43,338. If an owner or operator uses a single FR mechanism (insurance policy) and during the course of the year moves into a higher FR level (greater than 100 USTs), he has until the renewal date of the policy to increase his limit and meet regulatory requirements. If the operator or owner uses multiple FR mechanisms (letter of credit and insurance policy, for example), he has until the renewal date of the first expiring mechanism to update his FR requirements. *Id.*

84. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372-80 (1988)(to be codified at 40 C.F.R. §§ 280.93-103). Additionally, if the operator or owner uses some types of FR mechanisms, the rules require the establishment of a standby trust fund. *Id.* at 43,378 (to be codified at 40 C.F.R. § 280.103).

85. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371-72 (1988)(to be codified at 40 C.F.R. § 280.93).

86. *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.93(g)).

87. *Id.* (to be codified at 40 C.F.R. § 280.93(h)).

88. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,371-72 (1988)(to be codified at 40 C.F.R. § 280.93(d)(1)-(3)). For example, if a service station operator provides an insurance policy for corrective action and bodily injury and a separate policy for property damage occasioned by a LUST, he must provide \$1,000,000 coverage under the corrective action and bodily injury policy and \$1,000,000 coverage under the property damage policy. *See id.* The agency included this provision to ensure full coverage amounts for bodily injury, personal injury or corrective action costs in case of a product release. *See id.* at 43,338.

levels are fulfilled.<sup>89</sup> These mechanisms include a financial test of self-insurance,<sup>90</sup> guarantees,<sup>91</sup> insurance and risk retention group coverage (RRG),<sup>92</sup>

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89. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372 (1988)(to be codified at 40 C.F.R. § 280.94). The two additional elements listed in 40 C.F.R. 280.94 are detailed below. *Id.* (to be codified at 40 C.F.R. § 280.94(a)). First, the Attorney General in the state where the USTs are located must submit to the implementing agency (in Texas, the Texas Water Commission) a written statement that the guarantee or surety bond constitutes “a legally valid and enforceable obligation in that state.” *Id.* (to be codified at 40 C.F.R. § 280.94(b)). Second, if an operator or owner uses the financial test of self-insurance (40 C.F.R. § 280.95) along with the guarantee mechanism (40 C.F.R. § 280.96), he may not consolidate the operator’s or owner’s financial statements with the guarantor’s financial statements. *Id.* (to be codified at 40 C.F.R. § 280.94(c)). An implementing agency means the “EPA, or, in the case of a state with a program approved under section 9004 (or pursuant to a memorandum of agreement with the EPA), the designated state or local agency responsible for carrying out an approved UST program.” Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,196 (1988)(to be codified at 40 C.F.R. § 280.12).

90. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372-74 (1988)(to be codified at 40 C.F.R. § 280.95). An operator or owner wishing to use the financial self-insurance test specified in this section must use current year-end financial statements to meet the regulatory criteria outlined in paragraphs (b) or (c) of 40 C.F.R. § 280.95. *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.95(a)). Paragraph (b) requires computations of tangible net worth to meet self-insurance specifications and requires operators, owners or guarantors to have a tangible net worth of *at least* \$10,000,000. *Id.* (to be codified at 40 C.F.R. § 280.95(b)(1)-(2)). Additionally, subsection (b) requires financial statement filing with specified governmental agencies or Dun and Bradstreet, submission of a letter by the chief financial officer (CFO), and a clean audit report. *Id.* (to be codified at 40 C.F.R. § 280.95(b)(3)-(5)). Subsection (d) of 40 C.F.R. § 280.95 outlines the required letter by the CFO and directs a company using the tangible net worth test in subsection (b) to utilize Alternative I to demonstrate FR compliance. *Id.* at 43,372-73 (to be codified at 40 C.F.R. § 280.95(d)). Compliance with the self-insurance test under subsection (c) of 40 C.F.R. § 280.95 requires the operator, owner or guarantor to meet the financial guidelines under 40 C.F.R. 264.147(f)(1) with the FR amounts substituted for “amount of liability coverage each time specified in that section.” *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.95(c)(1)). Additional requirements are listed in subsection (c) to qualify for self-insurance. *Id.* (to be codified at 40 C.F.R. § 280.95(c)(2)-(5)). When using the subsection (c) option, the CFO letter and Alternative II must be used as listed in subsection (d). *Id.* at 43,372-73 (to be codified at 40 C.F.R. § 280.95(d)). The regulations also contain provisions for discontinuance of self-insurance. *Id.* at 43,373-74 (to be codified at 40 C.F.R. § 280.95(e)-(g)). The operator, owner or guarantor must also remember to follow the rule against consolidation of financial statements. *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.94(c)).

91. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,374 (1988)(to be codified at 40 C.F.R. § 280.96). An operator or owner may use a guarantee to meet FR requirements. *Id.* (to be codified at 40 C.F.R. § 280.96(a)). A guarantor must either possess an ownership interest in the company owning the USTs or engage in a “substantial business relationship with the owner or operator and issue the guarantee as an act incident to that business relationship.” *Id.* (to be codified at 40 C.F.R. § 280.96(a)(1)-(2)). A substantial business relationship means: the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee

surety bonds,<sup>93</sup> irrevocable standby letters of credit,<sup>94</sup> state-required mechanisms,<sup>95</sup> state funds,<sup>96</sup> or trust funds.<sup>97</sup> If an operator or owner uses a guar-

contract is issued incident to that relationship if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

*Id.* at 43,371 (to be codified at 40 C.F.R. § 280.92(m)). Guarantors must meet the financial self-insurance test in 40 C.F.R. § 280.95 no later than 120 days after the fiscal year end along with other requirements. *Id.* at 43,374 (to be codified at 40 C.F.R. § 280.96(b)-(c)). Operators or owners must also establish a standby trust fund (40 C.F.R. § 280.103) if they provide a guarantee, surety bond or standby letter of credit to meet FR levels. *Id.* at 43,375, 43,377, (to be codified at 40 C.F.R. § 280.96(d), .98(d), .99(c)). Finally, one must remember the Attorney General's requirements in 40 C.F.R. § 280.94(b) when using guarantees or surety bonds. *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.94(b)).

92. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,375-76 (1988)(to be codified at 40 C.F.R. § 280.97). Owners or operators may use a new insurance policy or an endorsement from qualified insurance or risk retention groups. *Id.* at 43,375 (to be codified at 40 C.F.R. § 280.97(a)). Endorsements or certificates of insurance must contain the specific language listed in the FR regulations. *Id.* at 43,375-76 (to be codified at 40 C.F.R. § 280.97(b)). The EPA also lists additional requirements for the company providing coverage. *Id.* at 43,376 (to be codified at 40 C.F.R. § 280.97(c)).

93. *Id.* at 43,376-77 (to be codified at 40 C.F.R. § 280.98). Operators and owners may meet FR levels by furnishing a surety bond of an acceptable company and meeting other EPA requirements. *Id.* (to be codified at 40 C.F.R. § 280.98(a)). The FR regulations detail the exact wording for the surety bond. *Id.* (to be codified at 40 C.F.R. § 280.98(b)). Additional requirements for surety bonds are found in 40 C.F.R. § 280.94(b). *Id.* at 43,372 (to be codified at 40 C.F.R. § 280.94(b)). A standby trust fund also must be established if using a surety bond. *Id.* at 43,377 (to be codified at 40 C.F.R. § 280.98(d)).

94. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,377-78 (1988)(to be codified at 40 C.F.R. § 280.99). Qualifying institutions may issue standby letters of credit to fulfill levels of FR assurance but must specifically word the letter of credit in accordance with the regulations. *Id.* at 43,377 (to be codified at 40 C.F.R. § 280.99(a)-(b)). The institution must issue an irrevocable letter of credit, and the operator or owner has to establish a standby trust fund in accordance with 40 C.F.R. § 280.103. *Id.* (to be codified at 40 C.F.R. § 280.99(c)). Financial institutions issuing letters of credit for FR purposes must also comply with EPA notification instructions. *Id.* at 43,377-78 (to be codified at 40 C.F.R. § 280.99(d)).

95. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,378 (1988)(to be codified at 40 C.F.R. § 280.100)(used by EPA to evaluate state-required mechanisms when state has no approved program).

96. *Id.* (to be codified at 40 C.F.R. § 280.101). This section lists the requirements and validation procedures for state FR assurance funds. *Id.* (to be codified at 40 C.F.R. § 280.101(a)-(c)). If the EPA approves the state program, the state must provide FR information to the operator or owner who must retain the letter or certificate as proof of FR. *Id.* (to be codified at 40 C.F.R. § 280.101(d)); *see also* Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1014-16 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3573 (Vernon Supp. 1990))(established Texas Petroleum Storage Tank Remediation Fund). *See generally* Fisher, *The Groundwater Protection Act: Can We Live Without It?* TEXAS OIL MARKETER, Oct.-Dec. 1988, 16, 17-21 (discussing proposed Texas legislation providing for FR mechanism).

antee, surety bond, or letter of credit to meet FR requirements, he must establish a standby trust fund.<sup>98</sup> Because the rules for the individual FR mechanisms have many specific provisions, an attorney should consult each section of the federal regulations to become familiar with the requirements.<sup>99</sup>

As a rule, only the largest companies may use the financial test of self-insurance because of the requirement of at least a \$10,000,000 tangible net worth.<sup>100</sup> Thus, many owners or operators with small or medium-sized operations must use other available methods of coverage.<sup>101</sup> The EPA, however, estimates that the resultant costs from imposition of FR and technical requirements will result in the closure of almost forty-five percent of all small firm owned outlets in five years.<sup>102</sup> Texas has passed legislation providing FR coverage for businesses owning USTs in response to this

97. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,378 (1988)(to be codified at 40 C.F.R. § 280.102). The rules allow an operator or owner to establish a trust fund to meet FR requirements. *Id.* (to be codified at 40 C.F.R. § 280.102(a)). If used exclusively, the trust must be fully funded, or if partially funded, must be used in connection with other FR mechanisms. *Id.* (to be codified at 40 C.F.R. § 280.102(c)). The wording of the trust agreement must meet specifications required in 40 C.F.R. § 280.103(b)(1). *Id.* (to be codified at 40 C.F.R. § 280.102(b)). This section also discusses additional requirements for use of this type of FR mechanism. *Id.* (to be codified at 40 C.F.R. § 280.102(d)-(f)).

98. *Id.* at 43,378-80 (to be codified at 40 C.F.R. § 280.103). Operators and owners must establish a standby trust fund if they use a guarantee, surety bond or letter of credit to provide any FR coverage. *Id.* at 43,378 (to be codified at 40 C.F.R. § 280.103(a)). The wording of the trust agreement must follow the guidelines in this section. *Id.* at 43,379-80 (to be codified at 40 C.F.R. § 280.103(b)(1)). The EPA, however, has made several small corrections to the Trust Agreement. 53 Fed. Reg. 51,274 (to be codified at 40 C.F.R. § 280.103(b)(1)).

99. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372-80 (1988)(to be codified at 40 C.F.R. §§ 280.94-.103)(allowable mechanisms for FR coverage). The EPA provides an in-depth discussion on each rule in the section-by-section analysis accompanying the FR requirements. *Id.* at 43,338-56. The analysis follows the FR rule sections exactly and provides a useful research tool for the attorney. *Id.* If an attorney does not have access to the Federal Register containing the FR and technical regulations and comments, the Underground Storage Tanks Division of the regional EPA Office will send a copy upon request or contact 1-800-424-9346.

100. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,372 (1988)(to be codified at 40 C.F.R. § 280.95(b)(2)). A complete discussion of both alternatives to the financial self-insurance test is contained in the section-by-section analysis. *Id.* at 43,340-45.

101. *Id.* at 43,374-78 (to be codified at 40 C.F.R. §§ 280.96-.102).

102. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,369 (1988). The number of small-firm-owned closures will rise with time according to the EPA. In 15 years, the EPA estimates a closure rate for small businesses of almost 53%. The survival figures for retail outlets owned by large firms show a much better survival rate. *Id.*

problem.<sup>103</sup>

D. *Substitution of Mechanisms, Cancellation, Reporting, Recordkeeping, Release, Bankruptcy, and Replenishment*

This section serves as a "catch-all" for the remaining EPA financial responsibility requirements.<sup>104</sup> The FR rules include a provision allowing substitution of FR mechanisms as long as the operator or owner maintains full coverage at all times.<sup>105</sup> If for any reason an operator or owner has his FR coverage cancelled, he must procure alternative coverage within sixty days of notification.<sup>106</sup> Insurance companies, risk retention groups, and state funds must allow the operator or owner sixty days after receipt of the termi-

103. Act of May 31, 1989, ch. 228, §§ 15-18, 1989 Tex. Sess. Law Serv. 1014-20 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3571-.3574, .358)(Vernon Supp. 1990)). The enacted legislation establishes the Groundwater Protection Cleanup Program and provides for the Petroleum Storage Tank Remediation Fund by levying a fee on the delivery of specified petroleum products. *Id.*; see also Fisher, *The Groundwater Protection Act: Can We Live Without It?* TEXAS OIL MARKETER, Oct.-Dec. 1988, 16, 17-19. (discussing groundwater protection problem and financial aspects of proposed act). The article also details the insurance element of the act and how the state fund will provide FR coverage for the UST operator. *Id.* at 21.

104. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,380-82 (1988)(to be codified at 40 C.F.R. §§ 280.104-.111). The remaining sections include:

1. "Substitution of financial assurance mechanisms by owner or operator" [*Id.* at 43,380-81 (to be codified at 40 C.F.R. § 280.104)];
2. "Cancellation or nonrenewal by a provider of financial assurance" [*Id.* at 43,381 (to be codified at 40 C.F.R. § 280.105)];
3. "Reporting by owner or operator" [*Id.* (to be codified at 40 C.F.R. § 280.106)];
4. "Recordkeeping" [*Id.* (to be codified at 40 C.F.R. § 280.107)];
5. "Drawing on financial assurance mechanisms" [*Id.* at 43,381-82 (to be codified at 40 C.F.R. § 280.108)];
6. "Releases from the requirements" [*Id.* at 43,382 (to be codified at 40 C.F.R. § 280.109)];
7. "Bankruptcy or other incapacity of owner or operator or provider of financial assurance" [*Id.* (to be codified at 40 C.F.R. § 280.110)];
8. "Replenishment of guarantees, letters of credit, or surety bonds" [*Id.* (to be codified at 40 C.F.R. § 280.111)].

105. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,380-81 (1988)(to be codified at 40 C.F.R. § 280.104(a)). After substituting the FR mechanism, the operator or owner may cancel the replaced coverage. *Id.* (to be codified at 40 C.F.R. § 280.104(b)).

106. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,381 (1988)(to be codified at 40 C.F.R. § 280.105(b)). The 60-day time limit for procuring new coverage commences upon the operator's or owner's receipt of the termination notice. *Id.* The director of the implementing agency (in Texas, the executive director of the UST Division of the Texas Water Commission) must receive notice of the cancellation if the operator or owner does not procure new FR assurance. *Id.* (to be codified at 40 C.F.R. § 280.105(b)(1)-(3)).

nation notice before cancellation.<sup>107</sup> Entities providing FR coverage by letters of credit, surety bonds and guarantees, however, must give a minimum of 120 days notice.<sup>108</sup> If the FR provider issues a letter of credit, guarantee or surety bond, and an operator or owner cannot provide replacement coverage within sixty days of the cancellation notice, the FR provider may have to place the money into a standby trust fund.<sup>109</sup> Because of burdensome reporting<sup>110</sup> and recordkeeping requirements,<sup>111</sup> the operator or owner must develop and maintain an accurate filing system.<sup>112</sup> Furthermore, the regulations address the release of an owner or operator,<sup>113</sup> bankruptcy,<sup>114</sup> and replenishment of FR mechanisms.<sup>115</sup>

107. *Id.* (to be codified at 40 C.F.R. § 280.105(a)(2)).

108. *Id.* (to be codified at 40 C.F.R. § 280.105(a)(1)). The timeframe for cancellation begins to run after receipt of the notice by the operator or owner. *Id.* All notices of cancellation or termination must be sent by certified mail. *Id.* (to be codified at 40 C.F.R. § 280.105(a)).

109. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,381-82 (1988)(to be codified at 40 C.F.R. § 280.108(a)). Funding will occur when the operator or owner cannot provide replacement coverage, the director of the implementing agency suspects or determines that an UST has leaked or the operator or owner notifies the director of a leak. *Id.* (to be codified at 40 C.F.R. § 280.108(a)(1)(i)-(ii)). The director may also fund the FR mechanism if a final judgment is entered against the operator or owner because of an UST release. *Id.* at 43,382 (to be codified at 40 C.F.R. § 280.108(a)(2)). The director may draw on an established standby trust fund for other reasons, including certification of liability by the operator or owner or execution on a valid judgment. *Id.* at 43,382 (to be codified at 40 C.F.R. § 280.108(2)(i)-(ii)). The EPA has mandated that FR coverage first cover corrective action and next third party claims for personal injury or property damage. *Id.* (to be codified at 40 C.F.R. § 280.108(c)).

110. Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,381 (1988)(to be codified at 40 C.F.R. § 280.106). This section lists numerous reporting requirements which the operator or owner must know. *Id.*

111. *Id.* (to be codified at 40 C.F.R. § 280.107). Owners or operators must maintain detailed records of FR mechanisms and other information relating to the FR rules. *Id.*

112. *See id.* (details records owners must maintain).

113. *Id.* at 43,382 (to be codified at 40 C.F.R. § 280.109). The operator or owner may discontinue FR coverage upon proper closure of the UST system or after all corrective action has been completed and the UST is properly closed. *Id.*

114. *Id.* (to be codified at 40 C.F.R. § 280.110). This section enumerates the proper procedures upon the bankruptcy or incapacity of the operator, owner, guarantor, state fund or state assurance mechanism. *Id.*

115. *Id.* (to be codified at 40 C.F.R. § 280.111)(requirements for replenishment of FR mechanisms if standby trust funded).

#### IV. TECHNICAL REQUIREMENTS FOR USTs UNDER THE NEW EPA REGULATIONS

##### A. *Applicability of the Technical Regulations*

In addition to the financial responsibility requirements, numerous technical regulations now govern USTs.<sup>116</sup> The UST technical standards promulgated by the EPA became effective on December 22, 1988.<sup>117</sup> The technical requirements cover all operators and owners of UST systems<sup>118</sup> with certain exceptions.<sup>119</sup> These exceptions include regulations excluding specific types of UST systems,<sup>120</sup> regulations deferring compliance by specific types of UST systems,<sup>121</sup> and regulations excluding tanks that are not USTs by definition.<sup>122</sup>

116. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-207 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74).

117. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,082 (1988). One section, however, has an effective date of October 24, 1988. *Id.* This section concerns notification requirements for USTs brought into use after May 8, 1986. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.22). If an owner has brought an UST into use after May 8, 1986, he must notify the state or local agency of the new system. *Id.* (to be codified at 40 C.F.R. § 280.22(a)).

118. *Id.* at 37,196 (to be codified at 40 C.F.R. § 280.12). An UST system may also be a "petroleum UST system" which is an UST system that contains petroleum or a de minimis amount of other regulated substances along with petroleum. As noted, an UST is any combination of tanks and underground pipes with more than 10% of its volume underground. *Id.* at 37,197.

119. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-97 (1988)(to be codified at 40 C.F.R. §§ 280.10 (a)-(d), 280.12).

120. *Id.* at 37,194-95 (to be codified at 40 C.F.R. § 280.(b)(1)-(6)). The excluded systems comprise hazardous waste USTs, certain wastewater treatment tank systems, hydraulic lift and electrical equipment tanks, UST systems with a capacity of 110 gallons or less, UST systems that contain a de minimis amount of regulated substances, and any emergency overfill and spill containment systems that is expeditiously emptied after use. *Id.*

121. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.10(c)-(d)). Certain UST systems enjoy a deferral from some parts of the technical regulations. *Id.* (to be codified at 40 C.F.R. § 280.10(c)). These systems include wastewater treatment tank systems, certain UST systems that contains radioactive material, UST systems used for emergency power generation at nuclear power plants, systems used for airport hydrant fuel distribution, and UST systems utilizing field-constructed tanks. *Id.* (to be codified at 40 C.F.R. § 280.10(c)(1)-(5)). Additionally, certain deferrals apply to UST systems that store fuel used by emergency power generators. *Id.* (to be codified at 40 C.F.R. § 280.10(d)). The regulations, however, contain interim prohibitions for the deferred UST systems. *Id.* (to be codified at 40 C.F.R. § 280.11(a)-(b)).

122. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988)(to be codified at 40 C.F.R. § 280.12). The term UST does not include the following:

- (a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
- (b) Tank used for storing heating oil for consumptive use on the premises where stored;
- (c) Septic tank;
- (d) Pipeline facility (including gathering lines) regulated under:

B. *Technical Regulations Governing Design, Construction, and Installation of New UST Systems—Upgrading of Existing UST Systems—Notification Requirements*

The EPA has outlined the performance criteria for newly installed UST systems along with UST upgrading and notification requirements in subpart B of the UST technical requirements.<sup>123</sup> Any new UST system<sup>124</sup> must comply with the new UST system performance standards.<sup>125</sup> Federal guidelines contain specific requirements for fiberglass-reinforced plastic tanks,<sup>126</sup> steel tanks,<sup>127</sup> and steel-fiberglass-reinforced-plastic composite tanks<sup>128</sup> con-

- (1) The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671 *et seq.*), or
- (2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, *et seq.*), or
- (3) Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition;
- (e) Surface impoundment, pit, pond, or lagoon;
- (f) Storm-water or wastewater collection system;
- (g) Flow-through process tank;
- (h) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or
- (i) Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term "underground storage tank" or "UST" does not include any pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.

*Id.*

123. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197-99 (1988)(to be codified at 40 C.F.R. § 280.20-.22). The first section of Subpart B of the technical regulations outlines new UST system performance standards. *Id.* at 37,197 (to be codified at 40 C.F.R. § 280.20). The second section lists the technical standards for upgrading existing UST systems. *Id.* at 37,198-99 (to be codified at 40 C.F.R. § 280.21). The regulations also discuss the notification requirements for UST systems placed in use after May 8, 1986. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.22).

124. *Id.* at 37,196 (to be codified at 40 C.F.R. § 280.12). A new tank system subject to the regulations in 40 C.F.R. § 280.20 is defined as any tank system which will be used to contain regulated substances for which installation commenced on the new tank system after December 22, 1988. *Id.*

125. *Id.* at 37,197-98 (to be codified at 40 C.F.R. § 280.20(a)-(e)).

126. *Id.* at 37,197 (to be codified at 40 C.F.R. § 280.20(a)(1)). The regulations require correct design and construction for all tanks and corrosion protection for all underground portions containing product. *Id.* (to be codified at 40 C.F.R. § 280.20(a)). Industry codes or independent testing laboratories may specify the correct standards. *Id.* For fiberglass-reinforced plastic tanks, the industry codes specified in the note to 40 C.F.R. § 280.20(a)(1) may be used to meet regulatory requirements. *Id.* (to be codified at 40 C.F.R. § 280.20(a)(1)).

127. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988)(to be codified at 40 C.F.R. § 280.20(a)(2)(i)-(iv)). Steel tanks used in new tank systems must meet rigorous installation requirements. *Id.* The rules require cathodic protection of all newly installed steel tanks in one of three ways. *Id.* Cathodic protection techniques protect



tained in UST systems. All three types of tanks must comply with recognized industry codes for design, construction, and cathodic protection.<sup>129</sup> Additionally, the EPA has promulgated standards for fiberglass-reinforced plastic piping<sup>130</sup> and steel piping<sup>131</sup> used in new UST systems. The regulations also require that piping design, construction and cathodic protection

metal surfaces from corrosion. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.12). Steel tanks must have a suitable dielectric coating, a field-installed cathodic protection system designed by a corrosion expert, and an impressed current system to meet cathodic protection requirements. *Id.* at 37,197 (to be codified at 40 C.F.R. § 280.20(a)(2)(i)-(iii)). Certain rules also govern the maintenance of cathodic protection systems. *Id.* (to be codified at 40 C.F.R. § 280.20(2)(iv)). The industry standards listed in the note to 40 C.F.R. § 280.20(2)(iv) may be used to meet cathodic protection requirements. *Id.* Some types of steel tanks, (e.g. stainless steel, steel encased in polyethylene, or concrete) however, may not require corrosion protection. *Id.* (to be codified at 40 C.F.R. § 280.20(a)(4)-(5)). In order for such a tank to be acceptable, a corrosion expert must determine the site is not corrosive enough to cause a "release due to corrosion during its operating life," and the operator or owner must also maintain records certifying this proposition. *Id.* (to be codified at 40 C.F.R. § 280.20(a)(4)). Approval from the implementing agency is required if an owner desires to install tanks constructed differently than those described in the regulations which address steel, fiberglass-reinforced plastic, or a steel-fiberglass-reinforced plastic tank. *Id.* (to be codified at 40 C.F.R. § 280.20(a)(5)). The preliminary comments to the technical rules also discuss the needed qualifications and accreditation for corrosion experts. *Id.* at 37,122.

128. *Id.* at 37,197 (to be codified at 40 C.F.R. § 280.20(a)(3)). The industry codes listed in the note to 40 C.F.R. § 280.20(a)(3) will enable an owner or operator to comply with this section. *Id.*

129. *Id.* (to be codified at 40 C.F.R. § 280.20(a)(1)-(3)). The note to the C.F.R. sections listed above contains the industry codes needed for compliance. *Id.* An interested party may obtain the codes by contacting the appropriate listed agency and requesting a copy. Appendix 3 to this comment contains information for contacting industrial organizations and governmental agencies.

130. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198 (1988)(to be codified at 40 C.F.R. § 280.20(b)). Both fiberglass-reinforced plastic and steel piping must meet industry standards and be properly designed and constructed. *Id.* The technical regulations also require corrosion protection for underground piping. *Id.* The EPA regulations detail the applicable industry codes for fiberglass-reinforced plastic piping in the note to 40 C.F.R. § 280.20(b)(1). *Id.*

131. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.20(b)(2)). The regulations also require cathodic protection and certain maintenance schedules for steel piping, similar to the steel tank regulations contained in 40 C.F.R. § 280.20(a)(2)(i)-(iii). *Id.* (to be codified at 40 C.F.R. § 280.20(b)(2)(i)-(iv)). The technical regulations also list the applicable industry standards for steel piping in the note to 40 C.F.R. § 280.20(b)(2). *Id.* Other types of piping (e.g. copper) may also forego corrosion protection provided certain conditions occur. *Id.* (to be codified at 40 C.F.R. § 280.20(b)(3)(i)-(ii)). A corrosion expert must determine that the site is not corrosive enough to have a release from the piping due to corrosion, and the operator or owner must also maintain records demonstrating compliance. *Id.* Industry standards applicable to this section are listed in the note to 40 C.F.R. § 280.20(b)(3). *Id.* Operators and owners should realize the implementing agency may also issue regulations concerning underground piping. *Id.* (to be codified at 40 C.F.R. § 280.20(b)(4)).

meet industry standards.<sup>132</sup> Mandatory spill and overfill regulations for new UST systems also require mechanisms that will prevent product release into the environment.<sup>133</sup> Finally, newly installed UST systems must meet specified installation<sup>134</sup> and certification<sup>135</sup> provisions.

Any UST operator or owner bringing an UST facility into use after May 9, 1986, must notify the responsible state or local agency<sup>136</sup> within thirty days.<sup>137</sup> Operators or owners in Texas may notify the Texas Water Commission with the forms provided in Appendix 1 to the EPA technical regulations.<sup>138</sup> Owners or operators must also notify the implementing agency of compliance with all applicable regulations for newly installed UST systems and compliance with UST installation regulations.<sup>139</sup> Another regulatory

132. *Id.* (to be codified at 40 C.F.R. § 280.20(b)(1)-(3)). The notes to each section list applicable industry codes for fiberglass-reinforced plastic design, corrosion protection, and non-corrosion protected underground piping. *Id.*

133. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198 (1988)(to be codified at 40 C.F.R. § 280.20(c)). The regulations require the use of spill and overfill control on UST systems. *Id.* Spill prevention equipment must prevent product release to the environment upon detachment of the transfer hose (spill catchment basin, for example). *Id.* (to be codified at 40 C.F.R. § 280.20(c)(1)(i)). Overfill equipment must automatically shut off product flow when the tank is 95% full or must restrict product flow into the UST at 90% of the UST capacity. *Id.* (to be codified at 40 C.F.R. § 280.20(c)(1)(ii)(A)-(B)). Alternatively, the implementing agency may specify different spill and overfill equipment. *Id.* (to be codified at 40 C.F.R. § 280.20(c)(2)(i)). If the UST is only filled 25 gallons at a time, spill and overfill equipment is not required. *Id.* (to be codified at 40 C.F.R. § 280.20(c)(2)(ii)).

134. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198 (1988)(to be codified at 40 C.F.R. § 280.20(d)). All underground tanks and piping must meet the industry standards for installation as outlined in the note to 40 C.F.R. § 280.20(d). *Id.*

135. *Id.* (to be codified at 40 C.F.R. § 280.20(e)(1)-(6)). This section lists several different methods for ensuring certification of installation compliance. *Id.* This rule requires the owner or operator to obtain the signature of the UST installer. *Id.* at 37,129. Additionally, notification of the new UST system must occur in accordance with 40 C.F.R. § 280.22(f). *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.20(e)).

136. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,199 (1988)(to be codified at 40 C.F.R. § 280.22(a)). Appendix II to the technical rules lists the applicable state agencies. *Id.* at 37,211-12.

137. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.22(a)). Depending on state law, the operator or owner may have to use the notification form in Appendix I to the technical regulations. *Id.* at (to be codified at 40 C.F.R. § 280.22(a)-(b)). Appendix I to the regulations illustrates the notification form. *Id.* at 37,208-10. Operators or owners who have USTs at multiple places of operation must also use one notice form for each site. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.22(c)). If the operator or owner has multiple tanks at one site, he may list those tanks on one form. *Id.*

138. *Id.* at 37,208-10. Texas utilizes the EPA form as indicated in Appendix II to the technical regulations. *Id.* at 37,212.

139. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,199 (1988)(to be codified at 40 C.F.R. § 280.22(e)-(f)). Notification must state that the operator or owner has complied with installation regulations, cathodic protection requirements, financial responsibility requirements, and release detection requirements. *Id.* (to be codified at 40

section requires that anyone selling an UST beginning October 24, 1988 and thereafter must notify the purchaser of the applicable notification requirements.<sup>140</sup>

The notification requirements previously discussed will require less of the owner's time and money when compared with the upgrading provisions for existing UST systems.<sup>141</sup> By December 22, 1998, every UST system must meet one of the following requirements:<sup>142</sup> 1) requirements for newly installed UST systems under 40 C.F.R. section 280.20;<sup>143</sup> or 2) the UST upgrading requirements contained in 40 C.F.R. section 280.21 (b)-(d);<sup>144</sup> or 3) closure requirements for an UST system.<sup>145</sup> The following section discusses UST upgrading requirements.<sup>146</sup>

Owners must upgrade all existing UST systems no later than December 22, 1998.<sup>147</sup> Upgrading requirements most directly affect steel tanks<sup>148</sup> and

C.F.R. § 280.22(e)(1)-(4)). Additionally, the owner must ensure the installer certifies the UST system installation. *Id.* (to be codified at 40 C.F.R. § 280.22(f)).

140. *Id.* (to be codified at 40 C.F.R. § 280.22(g)).

141. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198-99 (1988)(to be codified at 40 C.F.R. § 280.21). The EPA admits that the new UST rules will require large expenditures by operators and owners of USTs. *Id.* at 37,190 (table 3). The EPA estimates the final rule will cost UST owners and operators almost \$69,250,000,000 over the next 30 years, or almost \$2,500,000,000 per year! *Id.* Of this amount, UST repair, replacement, and upgrading will cost approximately \$32,300,000,000, and leak detection and testing will cost an additional \$4,980,000,000 over the next 30 years. *Id.* The remaining \$31,970,000,000 in total cost will result from corrective action costs from UST releases. *Id.*

142. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198 (1988)(to be codified at 40 C.F.R. § 280.21(a)). The EPA allows a maximum phase-in period of 10 years for upgrading requirements. *Id.* at 37,130.

143. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.21(a)(1)). Technical standards for newly installed UST systems include regulations concerning underground tanks, underground piping, overflow and spill prevention equipment, installation and certification of installation. *Id.* at 37,197-98 (to be codified at 40 C.F.R. § 280.20(a)-(e)). Additionally, all newly installed tanks must conform to general operating requirements contained in 40 C.F.R. §§ 280.30-34. *Id.* at 37,199-201 (to be codified at 40 C.F.R. §§ 280.30-34). Leak detection requirements also govern newly installed USTs. *Id.* at 37,201-04 (to be codified at 40 C.F.R. §§ 280.40-45).

144. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198 (1988)(to be codified at 40 C.F.R. § 280.21(a)(2)). The regulations detail the necessary upgrading requirements for underground tanks, underground piping and overflow and spill prevention equipment. *Id.* at 37,198-99 (to be codified at 40 C.F.R. § 280.21(b)-(d)).

145. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.21(a)(3)). The technical regulations detail closure rules for USTs at 40 C.F.R. §§ 280.70-74. *Id.* at 37,206-07.

146. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198-99 (1988)(to be codified at 40 C.F.R. § 280.21(a)-(d)).

147. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.21(a)).

148. *Id.* (to be codified at 40 C.F.R. § 280.21(b)(1)-(3)). Steel tanks are the only existing tanks singled out for extensive upgrading requirements contained in 40 C.F.R. § 280.21. *Id.* (to be codified at 40 C.F.R. § 280.21(b)). Upgrading of steel tanks must meet industry specifications as listed in the note following 40 C.F.R. § 280.21(b)(3). *Id.*

mandate the installation of either interior lining,<sup>149</sup> cathodic protection,<sup>150</sup> or a combination of both.<sup>151</sup> Moreover, the regulations require installation of cathodic protection for existing metal underground piping.<sup>152</sup> Owners or operators also must install overfill and spill prevention equipment on ex-

149. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198-99 (1988)(to be codified at 40 C.F.R. § 280.21(b)(i)-(ii)). Interior lining constitutes an acceptable method for upgrading existing underground tanks. *Id.* (to be codified at 40 C.F.R. § 280.21(b)(1)). Installation of interior lining must comply with regulations regarding UST repairs listed in 40 C.F.R. § 280.33. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.21(b)(1)(i)). Industry standards and codes will detail the technical requirements for installation of an internal tank liner with the appropriate codes found in the note following 40 C.F.R. § 280.21(b)(3). *Id.* at 37,198-99 (to be codified at 40 C.F.R. § 280.21(b)). After installation of the tank liner, the EPA technical regulations require an internal inspection within ten years and every five years thereafter. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.21(b)(1)(ii)). At each subsequent inspection after the original lining, the tank must remain structurally sound and the lining must still perform within the original design specifications. *Id.*

150. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.21(b)(2)). As an alternative to interior lining, an operator or owner may retrofit his underground tank with cathodic protection. *Id.* Any cathodic protection system must meet the standard in 40 C.F.R. § 280.20(a)(2)(ii)-(iv). *Id.* A cathodic protection system must include: 1) A field-installed cathodic system designed by a corrosion expert; 2) Impressed current systems allowing system monitoring; and 3) Operation of the cathodic system in accordance with 40 C.F.R. § 280.31. *Id.* at 37,197 (to be codified at 40 C.F.R. § 280.20(a)(2)(ii)-(iv)). Applicable industry codes for cathodic protection systems added to existing USTs are located in the note following 40 C.F.R. § 280.20(a)(2). *Id.* (to be codified at 40 C.F.R. § 280.20(a)(2)). Before installation of a cathodic protection system, owners or operators must ensure the integrity of the tank by one of four methods. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.21(b)(2)(i)-(iv)). These methods include internal inspection (for tanks of all ages), monthly monitoring in accordance with 40 C.F.R. § 280.43(d)-(h) (tanks installed less than 10 years), tank tightness testing (tanks installed less than 10 years), or any other method approved by the implementing agency. *Id.* Tank tightness testing requires two separate tests, one before installation of the cathodic protection system and another test three to six months after installation. *Id.* (to be codified at 40 C.F.R. § 280.21(b)(2)(iii)). The note following 40 C.F.R. § 280.21(b)(3) details the applicable industry codes and standards for upgrading existing USTs. *Id.* (to be codified at 40 C.F.R. § 280.20(b)(3)).

151. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,199 (1988)(to be codified at 40 C.F.R. § 280.21(b)(3)(i)-(ii)). In order to combine both internal lining and cathodic protection systems, lining installation must meet the requirements of 40 C.F.R. § 280.33 and cathodic protection systems must meet the standard in 40 C.F.R. § 280.20(a)(2)(i)-(iv). *Id.*

152. *Id.* (to be codified at 40 C.F.R. § 280.21(c)). Operators or owners must install cathodic protection for existing unprotected underground piping by December 22, 1998. *Id.* at 37,198 (to be codified at 40 C.F.R. § 280.21(a)). This regulation applies to underground piping containing regulated substances and in contact with the soil. *Id.* at 37,199 (to be codified at 40 C.F.R. § 280.21(c)). Applicable industry codes and standards are listed in the note after 40 C.F.R. § 280.20(b)(2) on page 37,198. *Id.*

isting UST systems by December 22, 1998.<sup>153</sup> Leak detection systems must be operative no later than December 22, 1993.<sup>154</sup>

### C. General Operating Requirements for UST Systems

The general operating requirements for an UST system relate to product spill and overflow control,<sup>155</sup> corrosion protection of steel UST systems,<sup>156</sup> product compatibility with the storage vessel,<sup>157</sup> repairs,<sup>158</sup> recordkeeping and reporting.<sup>159</sup> Operators and owners must prevent product overfills and spills<sup>160</sup> and immediately clean up any released product.<sup>161</sup> As a rule, petroleum overfills and spills greater than twenty-five gallons must be reported to

153. *Id.* (to be codified at 40 C.F.R. § 280.21(d)). Spill and overflow upgrading for existing UST systems must meet the EPA requirements set out in 40 C.F.R. § 280.20(c). *Id.*

154. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40(c)). Leak detection phase-in periods begin December 22, 1989, for USTs installed before 1965 or if the operator or owner does not know when the UST was installed. *Id.* Installation of USTs from 1965-69 require leak detection by December 22, 1990; USTs installed from 1970-74 require leak detection by December 22, 1991; USTs installed from 1975-79 require leak detection by December 22, 1992; and USTs installed from 1980-88 require leak detection by December 22, 1993. *Id.*

155. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,199-201 (1988)(to be codified at 40 C.F.R. § 280.30). Spills and overfills most often occur as a result of human error. *Id.* at 37,133. A spill usually results when the delivery hose is disconnected from the UST fill pipe before all product has drained from the hose. *Id.* An overflow occurs when the UST product level exceeds the tank capacity. *Id.*

156. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.31). Operators or owners must maintain all UST corrosion protection systems according to the technical standards and industry codes. *Id.* (to be codified at 40 C.F.R. § 280.31(b)(2)).

157. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.32). Operators and owners must be aware that alcohol-blended fuels containing more than 10% alcohol may not be compatible with some fiber-glass-reinforced-plastic tanks. *Id.* at 37,138. The EPA recommends that the owner contact the tank manufacturer to determine product/tank compatibility if changing the product in an UST. *Id.*

158. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.33). The EPA will allow multiple repairs on USTs provided that industry standards are followed in the repair process and the repairs comply with technical regulations. *Id.* at 37,139. If, however, an owner or operator discovers a product release during the repair, the corrective action standards must be met. *Id.* This could entail removal of the UST to clean up the release even if the tank is repairable. *Id.*

159. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.34).

160. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,199 (1988)(to be codified at 40 C.F.R. § 280.30(a)). The industry codes listed in the note following 40 C.F.R. § 280.30(a) may be used to meet the regulatory requirements. *Id.*

161. *Id.* at 37,199-200 (to be codified at 40 C.F.R. § 280.30(b)). The regulation requires operators and owners to investigate, clean up, and report all overfills and spills in accordance with 40 C.F.R. § 280.53. *Id.*

the implementing agency within twenty-four hours.<sup>162</sup>

If an owner or operator uses corrosion protection devices with a steel UST system, the regulations require regular maintenance,<sup>163</sup> inspection, and recordkeeping.<sup>164</sup> Alcohol blended fuels may require specific types of USTs; therefore, owners or operators should consult industry codes to determine compliance.<sup>165</sup> All tank and piping repairs also must comply with manufacturer's specifications or industry codes.<sup>166</sup> Additionally, operators and own-

162. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.53(a)(1)). The implementing agency may reduce the 25 gallon rule to another reasonable amount. *Id.* Additionally, all overfills and spills that cause "a sheen on nearby surface water" must also be reported to the implementing agency within 24 hours. *Id.* Spills or overfills of hazardous substances equal to or greater than the CERCLA reportable quantities contained in 40 C.F.R. Part 302 must also be reported to the implementing agency. *Id.* (to be codified at 40 C.F.R. § 280.53(a)(2)).

163. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.31(a)). The regulations require regular maintenance of steel UST system cathodic protection devices so as to ensure continuous anti-corrosion protection for metal components in the ground. *Id.*

164. *Id.* at 37,200 (to be codified at 40 C.F.R. § 280.31(b)). Operators and owners must use qualified cathodic protection testers to inspect cathodic protection systems for proper operation. *Id.* Operators or owners must also conduct cathodic protection tests "within 6 months of installation and at least every 3 years thereafter or according to another reasonable time frame established by the implementing agency . . ." *Id.* (to be codified at 40 C.F.R. § 280.31(b)(1)). Inspection records of cathodic protection tests must be maintained for the three previous inspections in accordance with 40 C.F.R. § 280.34(b)(2). *Id.* (to be codified at 40 C.F.R. § 280.31(d)(2)). Operators and owners must use industry codes and guidelines as the inspection criteria for corrosion protection systems. *Id.* (to be codified at 40 C.F.R. § 280.31(b)(2)). The note following 40 C.F.R. § 280.31(b)(2) lists the appropriate industry codes and standards. *Id.* The regulations also require inspection of impressed current cathodic protection systems every 60 days to ensure proper operation. *Id.* (to be codified at 40 C.F.R. § 280.31(c)). Inspection results for an impressed current cathodic protection system must be maintained for the three previous inspections. *Id.* (to be codified at 40 C.F.R. § 280.31(d)(1)). A cathodic protection tester must also demonstrate and understand the principles behind corrosion protection systems for steel USTs. *Id.* at 37,195 (to be codified at 40 C.F.R. § 280.12). The cathodic protection tester must have experience and education in structure-to-soil potential, soil resistivity, stray current, and "component electrical isolation measurements of buried metal piping and tank systems." *Id.*

165. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.32). Owners and operators must realize that alcohol-blended fuels, with more than 10% alcohol, may not be suitable for certain types of fiberglass tanks. *Id.* at 37,138. It is necessary to consult the industry codes listed in the note following 40 C.F.R. § 280.32 to determine compliance with the compatibility regulations. *Id.* at 37,200 (to be codified at 40 C.F.R. § 280.32).

166. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.33(a)). Applicable industry codes and standards follow the note to 40 C.F.R. § 280.33(a). *Id.* An authorized manufacturer's representative or anyone meeting industry standards may repair fiberglass-reinforced plastic tanks. *Id.* (to be codified at 40 C.F.R. § 280.33(b)). Additional rules govern repairs on metal pipe sections, fittings, and fiberglass fittings and pipes. *Id.* (to be codified at 40 C.F.R. § 280.33(c)).

ers need to ensure that repairs to UST systems will prevent releases.<sup>167</sup> For repaired tanks, the regulations require either post-repair tightness tests,<sup>168</sup> inspections,<sup>169</sup> or monitoring.<sup>170</sup> Owners will have to test cathodic protection systems within six months after repairs<sup>171</sup> and maintain records of all repairs for the remaining life of the UST.<sup>172</sup> The general operating regulations also outline all reporting and recordkeeping requirements for operators and owners.<sup>173</sup>

167. *Id.* (to be codified at 40 C.F.R. § 280.33).

168. *Id.* (to be codified at 40 C.F.R. § 280.33(d)). If an operator or owner repairs an underground tank or piping, tank tightness tests must be conducted in accordance with 40 C.F.R. § 280.43(c) and § 280.44(b) no more than 30 days after the repairs are completed. *Id.* Tank tightness testing, however, may not be required in certain circumstances. *Id.* (to be codified at 40 C.F.R. § 280.33(d)(1)-(2)).

169. *Id.* (to be codified at 40 C.F.R. § 280.33(d)(1)). If an internal inspection is conducted on a repaired tank in accordance with industry standards (note following 40 C.F.R. § 280.33(a)), then tank tightness testing is not necessary. *Id.*

170. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200 (1988)(to be codified at 40 C.F.R. § 280.33(d)(2)). Monthly monitoring according to 40 C.F.R. § 280.43(d)-(h) will eliminate the need for post-repair tightness testing. *Id.* Operators and owners may use any test methods approved by an implementing agency in lieu of tightness testing. *Id.* (to be codified at 40 C.F.R. § 280.33(d)(3)).

171. *Id.* (to be codified at 40 C.F.R. § 280.33(e)). Cathodic repair testing must meet the standards outlined in 40 C.F.R. § 280.31(b) and (c) to ensure proper operation. *Id.*

172. *Id.* (to be codified at 40 C.F.R. § 280.33(f)).

173. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,200-01 (1988)(to be codified at 40 C.F.R. § 280.34). Operators and owners must allow implementing agency inspections, testing and monitoring, along with other requests under RCRA. *Id.* at 37,200. The reporting and recordkeeping section has three sections: reporting requirements, recordkeeping requirements, and records availability and maintenance requirements. *Id.* at 37,200-201 (to be codified at 40 C.F.R. § 280.34(a)-(c)). Operators and owners must report to the implementing agency the following information: 1) notification of all new and existing UST systems (40 C.F.R. § 280.22) including installation certification for new UST systems (40 C.F.R. § 280.20(e)); 2) reports of all UST releases, which include suspected releases (40 C.F.R. § 280.50), spills and overfills (40 C.F.R. § 280.53), and any confirmed releases (40 C.F.R. § 280.61); 3) initial abatement measures or corrective actions (40 C.F.R. § 280.62), any initial site characterization (40 C.F.R. § 280.63), any free product removal actions (40 C.F.R. § 280.64), soil investigations and groundwater cleanup (40 C.F.R. § 280.65), and any corrective action plans (40 C.F.R. § 280.66); 4) any change-in-service or permanent closures (40 C.F.R. § 280.71). *Id.* at 37,200 (to be codified at 40 C.F.R. § 280.34(a)(1)-(4)). Operators and owners must also keep all of the following records: 1) site corrosion analysis conducted by a corrosion expert if the owner or operator does not use corrosion protection equipment (40 C.F.R. § 280.20(a)(4); 40 C.F.R. § 280.20(b)(3)); 2) records of corrosion protection equipment operation (40 C.F.R. § 280.31); 3) records of UST system repairs (40 C.F.R. § 280.33(f)); 4) records of compliance with release detection requirements (40 C.F.R. § 280.45); 5) site investigation results conducted at permanent closure (40 C.F.R. § 280.74). *Id.* (to be codified at 40 C.F.R. § 280.34(b)(1)-(5)). Finally, operators and owners must maintain the required records at either the UST site or another available alternative site. *Id.* at 37,201 (to be codified at 40 C.F.R. § 280.34(c)(1)-(2)). In either case, the records must be readily accessible for inspection by the implementing agency. *Id.* In the case of a permanent UST closure, closure records may

#### D. *Leak Detection Requirements and Compliance Deadlines*

##### 1. General Release Detection Requirements

Release detection requirements represent a major portion of the new regulations, and compliance will likely result in significant capital expenditures by owners or operators.<sup>174</sup> Release detection requirements for USTs fall into three major categories: all USTs,<sup>175</sup> petroleum USTs,<sup>176</sup> and hazardous substance USTs.<sup>177</sup> Operators and owners must provide all new and existing UST systems with an approved method of release detection.<sup>178</sup> Additional

be mailed to the implementing agency provided the records cannot be maintained according to 40 C.F.R. § 280.34(c)(1)-(2). *Id.* (to be codified at 40 C.F.R. § 280.34(c)(3)).

174. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201-04 (1988)(to be codified at 40 C.F.R. §§ 280.40-45). This section details the release detection requirements for USTs. *Id.*; *see also id.* at 37,190 (discussion of leak detection costs); OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT, 2 (1988)(discussing external leak detection methods in USTs). Leak detection systems are of two basic types, internal and external OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT 2 (1988). An internal leak detector monitors fuel levels within the UST, whereas an external leak detector monitors conditions outside of the UST. *Id.* The EPA estimates that external leak detectors may cost between \$100 to \$14,000 per tank plus installation costs. *Id.* at 4. The EPA LEAK LOOKOUT does not discuss any estimated costs for internal leak detection systems. *Id.*

175. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40). Operators and owners of UST systems must ensure that release detection devices are eventually installed. *Id.* (to be codified at 40 C.F.R. § 280.40(a)). Release detection systems must meet certain performance standards contained in 40 C.F.R. § 280.43 or § 280.44, and if a leak occurs, the operator or owner must notify the implementing agency. *Id.* (to be codified at 40 C.F.R. § 280.40(b)).

176. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41). This section contains the specific requirements for petroleum UST systems. *Id.* These standards apply in addition to the standards contained in 40 C.F.R. § 280.40 for all USTs. *Id.*

177. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201-02 (1988)(to be codified at 40 C.F.R. § 280.42). A hazardous substance is any substance meeting the extensive definition contained in the CERCLA Act of 1980. 42 U.S.C. § 9601(14) (Supp. IV 1986). Petroleum USTs do not fall in this category. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,196 (1988)(to be codified at 40 C.F.R. § 280.12)(definitions for technical regulations). Existing hazardous substance UST systems must meet the same requirements as petroleum UST systems. *Id.* at 37,201 (to be codified at 40 C.F.R. § 280.42(a)). Leak detection requirements for petroleum UST systems are contained in 40 C.F.R. § 280.41. Additionally, new UST systems that contain hazardous substances must integrate additional systems into construction. *Id.* at 37,201-02 (to be codified at 40 C.F.R. § 280.42(b)(1)-(5)). The systems mandated for new hazardous substance USTs must also be integrated into all existing hazardous substance USTs by December 22, 1998. *Id.* at 37,201 (to be codified at 40 C.F.R. § 280.42(a)).

178. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40(a)). The release detection system must detect leaks from the tank and underground piping and must be installed according to manufacturer's specifications. *Id.* (to be codified at 40 C.F.R. § 280.40(a)(1)-(2)). The regulations detail the



requirements also apply to all UST systems.<sup>179</sup> The initial commencement of release detection requirements begins December 22, 1989, for all types of UST systems installed before 1965, and the same date is applicable if the installation date is unknown.<sup>180</sup> Operators and owners must realize that if they do not comply with the release detection requirements by the mandated deadlines, the UST must be closed.<sup>181</sup> The release detection phase-in requirements previously discussed also govern petroleum USTs<sup>182</sup> with additional leak detection regulations concerning petroleum tanks,<sup>183</sup> pressurized piping,<sup>184</sup> and suction piping systems.<sup>185</sup> Every thirty days, operators or

approved leak detection methods for tanks in 40 C.F.R. § 280.43 and underground piping in 40 C.F.R. § 280.44. *Id.* at 37,202-03 (to be codified at 40 C.F.R. § 280.43-.44).

179. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40(a)(3), (b), (d)). The UST general requirements regulation details certain probability levels of detection and false alarms. *Id.* (to be codified at 40 C.F.R. § 280.40(a)(3)). Additionally, if an operator or owner discovers a product leak, he must notify the implementing agency according to 40 C.F.R. §§ 280.50-.53. *Id.* (to be codified at 40 C.F.R. § 280.40(b)). If an operator or owner cannot bring the UST into compliance with the release detection requirements by the applicable date, the owner must close the UST in accordance with 40 C.F.R. §§ 280.70-.74. *Id.* (to be codified at 40 C.F.R. § 280.40(d)).

180. *Id.* (to be codified at 40 C.F.R. § 280.40(c)). UST systems installed from 1965-69 require release detection by December 22, 1990, while systems installed from 1970-74 must have release detection by December 22, 1991. *Id.* Newer USTs installed between 1975-79 must comply with the regulations by December 22, 1992, and USTs installed from 1980-88 must meet release detection requirements by December 22, 1993. *Id.* The phase-in requirements just discussed apply to underground tanks that utilize suction piping systems. *Id.* Pressurized piping in all UST systems must have release detection applied to the piping by December 22, 1990, regardless of when the companion tank must meet release detection requirements. *Id.*; see also OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT 17 (1988)(leak detection deadline tables).

181. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40(d))(comply or close UST).

182. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.40(c)). The release detection phase-in requirements apply to *all* USTs. *Id.*

183. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41(a)(1)-(2))(general leak detection guidelines for petroleum tanks).

184. *Id.* (to be codified at 40 C.F.R. § 280.41(b)(1)(i)-(ii)). Operators or owners who use pressurized piping must have the necessary leak detection systems operational by December 22, 1990. *Id.* (to be codified at 40 C.F.R. § 280.40(c)). Mandatory release detection systems include automatic line leak detectors (40 C.F.R. § 280.44(a)) and annual line tightness tests (40 C.F.R. § 280.44(b)) or monthly monitoring procedures (40 C.F.R. § 280.44(c)). *Id.* (to be codified at 40 C.F.R. § 280.41(b)(1)(i)-(ii)). An automatic line leak detector (ALLD) alerts the operator of any releases from the pressurized piping system. *Id.* at 37,203 (to be codified at 40 C.F.R. § 280.44(a)). An ALLD stops product flow through the piping system or triggers an alarm to alert the operator of a product release. Leak detection with an ALLD must "detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour." Additionally, an annual test of the ALLD's operation must be conducted according to the manufac-

owners must monitor all USTs for leaks<sup>186</sup> according to the listed methods in 40 C.F.R. section 280.43(d)-(h).<sup>187</sup> The immediate applicability of the monthly monitoring regulation, however, depends upon whether or not the tank complies with the performance standards in section 280.20 (new UST systems) or section 280.21 (upgrading existing UST systems) of 40 C.F.R.<sup>188</sup> This regulation is best illustrated graphically and is contained in Appendix 1.<sup>189</sup>

## 2. Tank Release Detection Systems and Recordkeeping Requirements

Leak detection methods for underground tanks fall into three broad categories<sup>190</sup> which an operator or owner may use depending upon the "status" of the UST system.<sup>191</sup> These categories include monthly inventory con-

turer's specifications. *Id.* Operators or owners also need to conduct annual line tightness testing or monthly monitoring methods in conjunction with an ALLD system. *Id.* at 37,201 (to be codified at 40 C.F.R. § 280.41(b)(1)(ii)). Line tightness testing should detect a leak of 0.1 gallon per hour at a pressure of 1.5 times normal operating pressure. *Id.* at 37,203 (to be codified at 40 C.F.R. § 280.44(b)). Use of monthly monitoring methods for pressurized piping will follow the methods listed for tank monitoring in 40 C.F.R. § 280.43(e)-(h). *Id.* (to be codified at 40 C.F.R. § 280.44(c)). Appendix 3 to this comment illustrates the release detection requirements for petroleum piping.

185. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41(b)(2)). Suction piping systems will have to meet release detection requirements at the same time as the accompanying underground tanks. *Id.* (to be codified at 40 C.F.R. § 280.40(c)). Applicable methods of leak detection for suction piping systems include line tightness testing (40 C.F.R. § 280.44(b)) at least every three years or monthly monitoring methods (40 C.F.R. § 280.44(c)). *Id.* (to be codified at 40 C.F.R. § 280.41(b)(2)). An operator or owner may forego release detection systems in suction piping if certain conditions are met. *Id.* (to be codified at 40 C.F.R. § 280.41(b)(2)(i)-(v)).

186. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41(a)).

187. *Id.* The methods include automatic tank gauging, vapor monitoring, groundwater monitoring, interstitial monitoring, or other approved methods. *Id.* at 37,202-03 (to be codified at 40 C.F.R. § 280.43(d)-(h)).

188. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41(a)(1)-(2))(interaction of release detection standards and tank status). One other exception to the monthly monitoring rule exists for USTs of 550 gallons or less. *Id.* (to be codified at 40 C.F.R. § 280.41(a)(3)). If a UST falls within this category, weekly tank gauging (40 C.F.R. § 280.43(b)) may be used. *Id.*

189. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,149 (1988). Figure 4, contained in the comments to the technical regulations, best illustrates the release detection regulations and served as the basis for Appendix 1 hereto. *Id.*; see also OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, MUSTS FOR USTs 17 (1988)(illustrates interaction of release detection methods and tank status).

190. See Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,202-03 (1988)(to be codified at 40 C.F.R. § 280.43(a)-(h))(monthly inventory methods, tank tightness testing, monthly monitoring methods).

191. See Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201

trol,<sup>192</sup> tank tightness testing,<sup>193</sup> and monthly monitoring methods (MMMs).<sup>194</sup> Eventually, all UST systems will employ MMMs,<sup>195</sup> and the

(1988)(to be codified at 40 C.F.R. § 280.41(a)(1)-(2))(requirements for petroleum UST systems). The regulations differentiate between new or upgraded tanks and existing tanks that have not been upgraded. *See id.* Upgraded or new UST systems (40 C.F.R. §§ 280.20-21) may use monthly monitoring (40 C.F.R. § 280.43(d)-(h)), or monthly inventory control (40 C.F.R. § 280.43(a) or (b)), and tank tightness testing (40 C.F.R. § 280.43(c)) every five years. *Id.* (to be codified at 40 C.F.R. § 280.41(a)(1)). Existing UST systems may use the same options as upgraded or new USTs but must undergo *annual* tank tightness testing (40 C.F.R. § 280.43(c)). *Id.* (to be codified at 40 C.F.R. § 280.41(a)(2)). Appendix 1 to this comment illustrates the interaction of these rules with tank status and also shows the final deadline for monthly monitoring by all USTs. The comments to the technical regulations also list this information. *Id.* at 37,149.

192. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,202 (1988)(to be codified at 40 C.F.R. § 280.43(a)-(b)). Monthly inventory methods comprise two separate types of release detection: inventory control and manual tank gauging. *Id.* Inventory control is a method whereby UST inventory volume measurements are recorded daily and reconciled on a monthly basis. *Id.* (to be codified at 40 C.F.R. § 280.43(a)). This method must detect releases "of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis." *Id.* The section further describes the exact steps necessary to perform inventory control. *Id.* (to be codified at 40 C.F.R. § 280.43(a)(1)-(6)). The industry code in the note following 40 C.F.R. § 280.43(a) will help the operator or owner comply with this section. *Id.* Manual tank gauging is the second monthly inventory control method. *Id.* (to be codified at 40 C.F.R. §§ 280.41(a)(2), .43(b)). An operator or owner may only use this method for tanks that contain 2,000 gallons or less. *Id.* (to be codified at 40 C.F.R. § 280.43(b)(5)). Manual tank gauging constitutes the sole method of leak detection for tanks of 550 gallons or less capacity. *Id.* Manual tank gauging may be used instead of monthly inventory control (40 C.F.R. § 280.43(a)) for tanks that contain 551 to 2,000 gallons. *Id.* The procedures for manual tank gauging are also listed in this section. *Id.* (to be codified at 40 C.F.R. § 280.43(b)(1)-(4)).

193. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,202 (1988)(to be codified at 40 C.F.R. § 280.43(c)). Tank tightness testing systems must detect leaks of .1 gallons per hour from any part of the tank containing product. Tightness testing systems must be able to account for many variables including thermal contraction or expansion of the product, tank deformation, vapor pockets, condensation, evaporation and the water table location. *Id.*

194. *Id.* at 37,202-03 (to be codified at 40 C.F.R. § 280.43(d)-(h)). The operator or owner may use five types of monthly monitoring systems. These systems include: automatic tank gauging systems, vapor monitoring systems, groundwater monitoring systems, interstitial monitoring systems, and other approved methods. *Id.* An automatic tank gauging system electronically tests for product releases and must detect leaks of .2 gallons per hour. *Id.* at 37,202 (to be codified at 40 C.F.R. § 280.43(d)(1)). Operators and owners must use automatic tank gauging in conjunction with monthly inventory control (40 C.F.R. § 280.43(a)). *Id.* (to be codified at 40 C.F.R. § 280.43(d)(2)). A vapor monitoring system works to monitor product fumes in the soil surrounding the UST system. *Id.*; *see also* OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, LEAK LOOKOUT 6 (1988)(discusses leak detectors). Specific requirements govern the UST excavation zone and monitoring well positions if an operator or owner will use a vapor monitoring system. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,202-03 (1988)(to be codified at 40 C.F.R. § 280.43(e)(1)-(7)). Operators and owners may also use groundwater monitoring

regulations will eventually phase out the combined use of tank tightness and inventory control methods.<sup>196</sup> Appendix 1 illustrates the interaction of leak detection implementation requirements with the "status" of the UST system.<sup>197</sup> Appendix 2 also illustrates leak detection requirements and the interaction with UST piping.<sup>198</sup> Additionally, the operator or owner must maintain extensive records of leak detection compliance.<sup>199</sup>

E. *Reporting, Investigation and Confirmation of Petroleum and Hazardous Substance UST Releases*

Operators and owners of UST systems must report product releases,<sup>200</sup> unusual operating conditions,<sup>201</sup> or monitoring results indicating a release<sup>202</sup>

methods to detect product in subsurface water when the ground water lies no more than 20 feet below the surface. *Id.* at 37,203 (to be codified at 40 C.F.R. § 280.43(f)(2)). Specific technical requirements also govern the design and placement of monitoring wells. *Id.* (to be codified at 40 C.F.R. § 280.43(f)(1)-(7)). Interstitial monitoring systems detect leaks in the space between the underground tanks and the surrounding soils and concerns three situations: double-walled steel tanks, secondary barrier systems, and tanks with internally fitted liners. *Id.* (to be codified at 40 C.F.R. § 280.43(g)(1)-(3)). Specific regulations concern each type of system. *Id.* Finally, an operator or owner may use other leak detection methods if they can detect leaks of .2 gallons per hour or a 150 gallon release within a month. *Id.* (to be codified at 40 C.F.R. § 280.43(h)(1)). The accuracy of alternative methods must have "a probability of detection of 0.95 and a probability of false alarm of 0.05." *Id.* The implementing agency may also approve other methods of leak detection. *Id.* (to be codified at 40 C.F.R. § 280.43(h)(2)).

195. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,201 (1988)(to be codified at 40 C.F.R. § 280.41(a)(1)-(2)). The regulations state that operators or owners will use MMMs but then lists the exceptions to the rule and the applicable time periods for the alternative methods. *Id.*

196. *Id.* (to be codified at 40 C.F.R. § 280.41(a)(1)-(2)). The combination of inventory control and tank tightness testing must be phased out by December 22, 1998, or 10 years after the UST system was upgraded or newly installed, whichever is later. *Id.*

197. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,149 (1988). Appendix 2 is based partially on Figure 4 contained in the comments to the technical regulations. *Id.*; see also OFFICE OF UNDERGROUND STORAGE TANKS, U.S. ENVIRONMENTAL PROTECTION AGENCY, MUSTS FOR USTs 16-17 (1988)(graphic depiction of minimum requirements, important deadlines and release detection implementation).

198. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,152 (1988). Figure 5 to the technical regulations details pipe interaction with leak detection requirements.

199. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,203-04 (1988)(to be codified at 40 C.F.R. § 280.45). Records must be maintained in accordance with 40 C.F.R. § 280.34(b)(4) and should include written performance claims on release detection systems, monitoring, testing and sampling results, and various maintenance documents. *Id.* (to be codified at 40 C.F.R. § 280.45(a)-(c)).

200. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.50(a)). Product releases could include vapor presence or free product in the surrounding soil, utility and sewer lines, basements or nearby surface water. *Id.*

201. *Id.* (to be codified at 40 C.F.R. § 280.50(b)). Unusual operating conditions, for ex-

to the implementing agency within twenty-four hours.<sup>203</sup> False alarms caused by defective leak monitoring equipment or inventory control errors do not have to be reported if the problem is corrected and no regulated substance has been lost.<sup>204</sup> If the implementing agency suspects an UST has caused an off-site impact, the owner or operator might have to implement a release investigation.<sup>205</sup> A release investigation may require that operators or owners conduct an UST system check<sup>206</sup> or site check.<sup>207</sup> The outcome

ample, may include sudden product loss, erratic dispensing equipment operation or unexplained water in the UST. *Id.* The regulations, however, do not require notice to the implementing agency if the operator determines the equipment is defective but not leaking. *Id.* The equipment must be repaired or replaced immediately. *Id.*

202. *Id.* (to be codified at 40 C.F.R. § 280.50(c)). Under this section, if the release detection device malfunctions and is subsequently repaired and no release has occurred, the implementing agency does not have to be notified. *Id.* (to be codified at 40 C.F.R. § 280.50(c)(1)). Additionally, an operator or owner does not have to notify the implementing agency if a monthly inventory control method indicates a product release and the next month's data does not confirm the suspected release. *Id.* (to be codified at 40 C.F.R. § 280.50(c)(2)). The regulations allow the accumulation of another month's data; however, the regulation states that an operator or owner must notify the implementing agency within 24 hours of the reportable event. *Id.* (to be codified at 40 C.F.R. § 280.50 (c)(2)).

203. *Id.* (to be codified at 40 C.F.R. § 280.50). The implementing agency may set a time period of less than 24 hours. *Id.*

204. *Id.* at 37,204 (to be codified at 40 C.F.R. § 280.50(b), (c)(1), (2)).

205. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.51). If required, the operator or owner may have to implement a release investigation in accordance with 40 C.F.R. § 280.52. *Id.*

206. *Id.* (to be codified at 40 C.F.R. § 280.52). The release investigation must begin within seven days, or within another time specified by an implementing agency, after the initial reporting in 40 C.F.R. § 280.50. *Id.* (to be codified at 40 C.F.R. § 280.52(a)). A system test requires tank and pipe tightness testing according to 40 C.F.R. § 280.43(c) and § 280.44(b). *Id.* (to be codified at 40 C.F.R. § 280.52(a)). If tightness testing indicates a product release, the operator or owner must commence corrective action (40 C.F.R. §§ 280.60-.67). *Id.* (to be codified at 40 C.F.R. § 280.52(a)(1)). If tightness testing does not indicate a product release, an operator or owner need not take further action unless environmental contamination is the basis for the suspected release. *Id.* (to be codified at 40 C.F.R. § 280.52(a)(2)). If environmental contamination indicates a release and tightness testing does not indicate a leak, a site check in accordance with 40 C.F.R. § 280.52(b) must be implemented. *Id.* (to be codified at 40 C.F.R. § 280.52(a)(3)).

207. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.52(b)). A site check measures the UST site for contamination from product releases. *Id.* In conducting a site check, an operator or owner should consider numerous factors. *Id.* The EPA indicates that soil samples taken around and at depths below the suspected UST *will generally* meet the requirements of 40 C.F.R. § 280.52(b). *Id.* at 37,172. Operators and owners do have some flexibility in implementing and designing site check plans; however, the main purpose is to determine whether or not a release has occurred. *Id.* If an off-site impact has been reported, soil samples near property lines may also be helpful. *Id.* If the site check results indicate a product release, corrective action detailed in 40 C.F.R. §§ 280.60-.67 must begin. *Id.* at 37,204 (to be codified at 40 C.F.R.

of the system or site check will determine whether or not the owner or operator must commence corrective action under 40 C.F.R. sections 280.60-.67.<sup>208</sup> As a rule, owners or operators do not have to report petroleum overfills or spills of twenty-five gallons or less, provided the implementing agency has not set a different level.<sup>209</sup> Reportable spills, however, require notification to the implementing agency within twenty-four hours, and all overfills or spills must be cleaned up immediately.<sup>210</sup> In the case of hazardous substances, different spill amounts may apply.<sup>211</sup>

F. *Responding and Correcting Releases from Petroleum or Hazardous Substance USTs*

Upon the confirmation of an UST release, operators and owners must promptly report the release,<sup>212</sup> immediately act to prevent further releases,<sup>213</sup> and mitigate any fire, explosion or vapor hazards.<sup>214</sup> Next, the initial release abatement procedures must commence.<sup>215</sup> The federal regulations include procedures for: 1) the removal of the regulated product from the UST;<sup>216</sup> 2) the visual inspection of any releases;<sup>217</sup> 3) the continuous monitoring of hazards;<sup>218</sup> 4) the commencement of any remedial action for contaminated soil;<sup>219</sup> 5) the measurement of site contamination;<sup>220</sup> 6) the

§ 280.52(b)(1)). Where the site check results prove negative, no further investigation is required. *Id.* (to be codified at 40 C.F.R. § 280.52(b)(2)).

208. *Id.* (to be codified at 40 C.F.R. § 280.52(a)(1), (b)(1)).

209. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.53(a)-(b)). If a spill of less than 25 gallons cannot be cleaned up within 24 hours, the implementing agency must be notified. *Id.* (to be codified at 40 C.F.R. § 280.53(b)).

210. *Id.* (to be codified at 40 C.F.R. § 280.53(a)).

211. *Id.* (to be codified at 40 C.F.R. § 280.53(a)(2)). The note following 40 C.F.R. § 280.53(b) also details regulations in case of a hazardous substance spill. *Id.* (to be codified at 40 C.F.R. § 280.53(b)).

212. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204 (1988)(to be codified at 40 C.F.R. § 280.61). The regulations require reporting within 24 hours or within the timeframe set by the implementing agency. *Id.*

213. *Id.* (to be codified at 40 C.F.R. § 280.61(b)).

214. *Id.* at 37,205 (to be codified at 40 C.F.R. § 280.61(c)).

215. *Id.* (to be codified at 40 C.F.R. § 280.62(a)).

216. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.62(a)(1))(main goal of removal is prevention of further release into environment).

217. *Id.* (to be codified at 40 C.F.R. § 280.62(a)(2)). Visual inspection includes the inspection of any aboveground releases or any exposed belowground releases. The regulation seeks to prevent further product migration into groundwater or surrounding soils. *Id.*

218. *Id.* (to be codified at 40 C.F.R. § 280.62(a)(3)). The regulations seek to prevent product from entering surrounding structures or underground utilities. *Id.*

219. *Id.* (to be codified at 40 C.F.R. § 280.62(a)(4)). Operators and owners must prop-

determination of free product presence;<sup>221</sup> and 7) the commencement of free product removal, if necessary.<sup>222</sup> No later than twenty days after a confirmed release, operators and owners must report to the implementing agency "the initial abatements steps taken" and any information gathered.<sup>223</sup>

Within forty-five days after release confirmation, operators and owners must file an initial site characterization report with the implementing agency.<sup>224</sup> This report must contain a plethora of information gathered during the initial UST release response.<sup>225</sup> This information includes, but is not limited to, the quantity of product released,<sup>226</sup> surrounding ecological factors,<sup>227</sup> site check results,<sup>228</sup> and free product investigation results.<sup>229</sup> If the free product investigation indicates the presence of free product, operators and owners "must remove free product to the maximum extent practicable as determined by the implementing agency."<sup>230</sup> Additional requirements

erly dispose of contaminated soil excavated from the UST by complying with state or local requirements. *Id.*

220. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.62(a)(5)). An operator or owner must take soil samples from the UST excavation site. The regulation lists several factors to be considered. *Id.*

221. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,196 (1988)(to be codified at 40 C.F.R. § 280.12). Free product is defined as "a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water)." *Id.*

222. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.62(a)(6)). If investigation determines the presence of any free product, removal must begin as soon as practicable following the guidelines in 40 C.F.R. § 280.64. *Id.*

223. *Id.* (to be codified at 40 C.F.R. § 280.62(b)). The implementing agency may set a reporting deadline less than 20 days. *Id.*

224. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.63(b)). Operators and owners must file the required report unless otherwise directed by the implementing agency. *Id.* (to be codified at 40 C.F.R. § 280.63(a)).

225. *Id.* (to be codified at 40 C.F.R. § 280.63(a)(1)-(4)). Operators and owners must include all information gained in complying with 40 C.F.R. §§ 280.60-.61 along with the additional requirements of this section. *Id.*

226. *Id.* (to be codified at 40 C.F.R. § 280.63(a)(1)).

227. *Id.* (to be codified at 40 C.F.R. § 280.63(a)(2)). Ecological factors must include information on surrounding land use, populations, and water well facilities. *Id.* Additionally, the operator and owner should also determine subsurface soil conditions, climatological conditions, and the location of nearby sewer lines. *Id.*

228. *Id.* (to be codified at 40 C.F.R. § 280.63(a)(3)). The initial site check results conducted according to 40 C.F.R. § 280.62(a)(5) must also be included. *Id.*

229. *Id.* (to be codified at 40 C.F.R. § 280.63(a)(4)). An operator or owner must include the results of the free product investigation mandated by 40 C.F.R. § 280.62(a)(6) in the initial site characterization report. *Id.*

230. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.64). During the free product removal process, the

apply for free product removal, and the operator must file another required report with the implementing agency.<sup>231</sup> In some situations, operators and owners may have to analyze surrounding soil and groundwater conditions to determine the spread of contamination<sup>232</sup> and submit the gathered information to the implementing agency.<sup>233</sup>

In addition to the required reports, the implementing agency can require operators and owners to submit a corrective action plan.<sup>234</sup> The corrective action plan represents the major goals of the owner, operator and implementing agency. These goals are as follows: 1) clean up the product release, 2) protect the environment, and 3) preserve human health.<sup>235</sup> A corrective action plan, if required, details the necessary steps for the clean-up of the product release and must also address a variety of factors.<sup>236</sup> Once the im-

operator or owner must continue any initial response actions (40 C.F.R. § 280.61), initial abatement steps (40 C.F.R. § 280.62), or initial site characterization actions (40 C.F.R. § 280.63). *Id.*

231. *Id.* (to be codified at 40 C.F.R. § 280.64(a)-(d)). Operators and owners must remove free product so as to minimize contamination into previously uncontaminated areas. *Id.* (to be codified at 40 C.F.R. § 280.64(a)). Consequently, abatement of free product migration into the surrounding soil should constitute the minimum objective of a free product removal program. *Id.* (to be codified at 40 C.F.R. § 280.64(b)). Additionally, operators and owners must handle flammable products safely and competently. *Id.* (to be codified at 40 C.F.R. § 280.64(c)). The required free product removal report must be submitted to the implementing agency by the operator or owner within 45 days after release confirmation unless the implementing agency directs otherwise. *Id.* (to be codified at 40 C.F.R. § 280.64(d)). The free product removal report has to include: name of party responsible for free product removal, estimated amount of free product, "type of free product recovery system used," location of free product discharge, treatment and effluent levels of discharge, steps taken to obtain discharge permits, and information about free product disposal. *Id.* (to be codified at 40 C.F.R. § 280.64(d)(1)-(7)).

232. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,205 (1988)(to be codified at 40 C.F.R. § 280.65(a)). The regulations require this action if circumstances show water well contamination or the need for free product removal. *Id.* (to be codified at 40 C.F.R. § 280.65(a)(1)-(2)). Additionally, if evidence shows that contaminated soil has contacted ground water and the implementing agency asks for an investigation, the owner or operator must investigate. *Id.* (to be codified at 40 C.F.R. § 280.65(a)(3)-(4)).

233. *Id.* (to be codified at 40 C.F.R. § 280.65(b))(gathered information must be submitted immediately).

234. *Id.* (to be codified at 40 C.F.R. § 280.66(a)).

235. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.66(a)).

236. *Id.* (to be codified at 40 C.F.R. § 280.66(b)(1)-(6)). If the implementing agency requires a corrective action plan, appropriate considerations include:

- (1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;
- (2) The hydrogeologic characteristics of the facility and the surrounding area;
- (3) The proximity, quality, and current and future uses of nearby surface water and ground water;
- (4) The potential effects of residual contamination on nearby surface water and ground water;



plementing agency approves the corrective action plan, operators and owners must carry out the plan and report the results to the agency.<sup>237</sup> An owner or operator may initiate a clean-up operation prior to approval of a corrective action plan provided certain conditions are met.<sup>238</sup> These conditions include notification to the implementing agency,<sup>239</sup> compliance with the implementing agency's imposed directives,<sup>240</sup> and submittal of a final corrective action plan.<sup>241</sup> The regulations also require public notice and public access to the corrective action plan.<sup>242</sup>

### G. Guidelines for Out-Of-Service USTs and System Closures

Closure of UST systems fall within one of three categories: 1) temporary closure,<sup>243</sup> 2) permanent closure,<sup>244</sup> or 3) change-in-service.<sup>245</sup> An owner or operator may temporarily close his UST system, but he must maintain corrosion protection and leak detection systems.<sup>246</sup> Removal of all regulated substances stored in the UST, however, will allow the operator or owner to discontinue leak detection procedures.<sup>247</sup> Additional rules apply if the temporary closure will last longer than three months.<sup>248</sup> As a rule, temporary

(5) An exposure assessment; and

(6) Any information assembled in compliance with this subpart.

*Id.*

237. *Id.* (to be codified at 40 C.F.R. § 280.66(c)). The implementing agency will establish the schedule and format for reporting. *Id.*

238. *Id.* (to be codified at 40 C.F.R. § 280.66(d)).

239. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.66(d)(1)).

240. *Id.* (to be codified at 40 C.F.R. § 280.66(d)(2)).

241. *Id.* (to be codified at 40 C.F.R. § 280.66(d)(3)).

242. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.67(a)-(d)). The implementing agency must provide public notice if a corrective action plan fails to meet stated cleanup levels and the implementing agency is considering termination of the plan. *Id.* (to be codified at 40 C.F.R. § 280.67(d)).

243. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.70).

244. *Id.* at 37,206-07 (to be codified at 40 C.F.R. § 280.71(a)-(b)).

245. *Id.* (to be codified at 40 C.F.R. § 280.71(c)).

246. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.70(a)). The regulations contain leak detection standards at 40 C.F.R. §§ 280.40-45. *Id.* If an owner temporarily closes an UST and a product release is confirmed or suspected, he must comply with 40 C.F.R. §§ 280.50-67. *Id.*

247. *Id.* Consequently, "the UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system." *Id.*

248. *Id.* (to be codified at 40 C.F.R. § 280.70(b)(1)-(2)). To temporarily close an UST for three months or more, vent lines must be left open and functioning while all other lines, manways, pumps and ancillary equipment must be capped or secured. *Id.*

closure may only continue for twelve months unless the implementing agency has granted an extension.<sup>249</sup>

To permanently close an UST system, the operator or owner must provide the implementing agency with at least thirty days notice,<sup>250</sup> begin site assessment,<sup>251</sup> empty the tank, and either remove the tank from the ground or fill the tank with inert solid material.<sup>252</sup> The EPA also lists industry codes that owners and operators must use to comply with closure requirements.<sup>253</sup> Specific regulations also govern a change-in-service of existing USTs.<sup>254</sup>

Prior to the completion of a permanent closure or a change-in-service, the operator or owner must assess the UST site.<sup>255</sup> The assessment requires inspection of the UST site for contamination from released product.<sup>256</sup> If the closure assessment indicates contaminated soil or groundwater, or the presence of free product in vapor or liquid form, the operator or owner must implement corrective action in accordance with 40 C.F.R. sections 280.60-.67.<sup>257</sup> In certain circumstances, UST systems closed before December 22, 1988, may fall within the present closure requirements.<sup>258</sup> Operators or

249. *Id.* (to be codified at 40 C.F.R. § 280.70(c)). If an UST remains temporarily closed longer than 12 months, the system must be closed if new UST standards (40 C.F.R. § 280.20) or upgrading standards (40 C.F.R. § 280.21) excluding overfill and spill requirements are not met. *Id.* Before an operator or owner may get an extension from the implementing agency, an UST site assessment (40 C.F.R. § 280.72) must be conducted. *Id.*

250. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.71(a)). The implementing agency may modify the 30 day period to some other reasonable time. *Id.*

251. *Id.* The site assessment must be conducted in accordance with 40 C.F.R. § 280.72. *Id.*

252. *Id.* (to be codified at 40 C.F.R. § 280.71(b)). The operator or owner must also clean the UST by removing all accumulated sludge and liquid. *Id.*

253. *Id.* at 37,206-07 (to be codified at 40 C.F.R. § 280.71). The note following this section contains the industry codes. *Id.*

254. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,206 (1988)(to be codified at 40 C.F.R. § 280.71(c)). If an operator or owner continually stores a non-regulated substance in an UST, a change-in-service has occurred. *Id.* Before a change-in-service, operators and owners must empty the tank, clean it, and remove all accumulated sludge or liquid. *Id.* Additionally, the operator or owner must conduct a site assessment according to 40 C.F.R. § 280.72. *Id.*

255. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,207 (1988)(to be codified at 40 C.F.R. § 280.72(a)).

256. *Id.* An operator or owner may utilize various methods for site assessment, including soil sampling or soil gas sampling. *Id.* at 37,184. If closure is effectuated by tank removal, a visual inspection may suffice. *Id.* The operator and owner must also consider the type of product stored in the UST, local geological factors, and original backfill materials. *Id.* at 37,207 (to be codified at 40 C.F.R. § 280.72(a)).

257. *Id.* (to be codified at 40 C.F.R. § 280.72(b)).

258. Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,207 (1988)(to be codified at 40 C.F.R. § 280.73). If the implementing agency believes the UST

owners must maintain change-in-service and closure records for a minimum of three years<sup>259</sup> in conformity with one of three listed methods in the regulations.<sup>260</sup>

## V. TEXAS STATUTES AFFECTING UNDERGROUND AND ABOVEGROUND STORAGE TANKS

### A. Subchapter I. Underground and Aboveground Storage Tanks

The 71st Texas Legislature in House Bill 1588 substantially amended subchapter I of the Texas Water Code.<sup>261</sup> These statutes now govern both underground storage tanks and aboveground storage tanks.<sup>262</sup> The new amendments to subchapter I include: 1) additions to the legislative purpose;<sup>263</sup> 2) new definitions for aboveground storage tank,<sup>264</sup> claim,<sup>265</sup> eligible owner or operator,<sup>266</sup> hazardous substance,<sup>267</sup> petroleum product,<sup>268</sup> petro-

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poses a potential or current threat to the environment or human health, the operator or owner must comply with closure and assessment requirements if so directed. *Id.*

259. *Id.* (to be codified at 40 C.F.R. § 280.74). The closure records need to demonstrate compliance with the closure requirements of 40 C.F.R. §§ 280.71-74. *Id.*

260. *Id.* (to be codified at 40 C.F.R. § 280.74(a)-(c)). The required records may be maintained by the operator or owner who closed the UST, the current operator or owner of the UST site, or by mailing the records to an implementing agency if on-site maintenance is impossible. *Id.*

261. Act of May 31, 1989, ch. 228, § 1-22, 1989 Tex. Sess. Law Serv. 1006 (Vernon).

262. *Id.* § 19.

263. *Id.* § 1 (to be codified at TEX. WATER CODE ANN. § 26.341 (Vernon Supp. 1990)). The legislature found LUSTs "storing certain hazardous, toxic, or otherwise harmful substances have caused and continue to pose serious groundwater contamination problems in Texas." *Id.* The section seeks to protect the state's natural groundwater and surface water resources from LUSTs and leaking aboveground storage tanks (LASTs). *Id.*

264. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342 (1) (Vernon Supp. 1990)). The statute defines the term as follows:

(1) "Above ground storage tank" means a nonvehicular device that is:

(A) made of nonearthen materials;

(B) located on or above the surface of the ground or on or above the surface of the floor of a structure below ground such as a mineworking, basement, or vault; and

(C) designed to contain an accumulation of petroleum.

*Id.*

265. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342(2) (Vernon Supp. 1990)). A claim is a written demand for a "certain sum" of money. *Id.*

266. Act of May 31, 1989, ch. 228, § 1, 1989 Tex. Sess. Law Serv. 1007 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.342(3)) (Vernon Supp. 1990)). "Eligible owner or operator means a person designated as an eligible owner or operator for purposes of this subchapter by the commission under Section 26.3571(d) of this code." *Id.*; see also *id.* note 31 and accompanying text (defines "eligible owner or operator").

267. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342(4) (Vernon Supp. 1990)). "Hazardous substance has the meaning assigned by Section 101(14) of the Comprehensive

leum storage tank,<sup>269</sup> release;<sup>270</sup> and 3) revisions to the exemptions from regulation under subchapter I.<sup>271</sup> The Water Code also mandates the regis-

Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. Section 9601 *et seq.*.)” *Id.* The federal act defines “hazardous substance” in the following manner:

The term “hazardous substance” means (A) any substance designated pursuant to section 1321(b)(2)(A) of title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act [42 U.S.C. 6921] (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S.C. 6901 *et seq.*] has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act [42 U.S.C. 7412], and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 2606 of title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). 42 U.S.C. § 9601(14) (Supp. V 1987).

268. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342(6) (Vernon Supp. 1990)).

- (6) “Petroleum product” means a petroleum product that is obtained from distilling and processing crude oil and that is capable of being used as a fuel for the propulsion of a motor vehicle or aircraft, including motor gasoline, gasohol, other alcohol blended fuels, aviation gasoline, kerosene, distillate fuel oil, and #1 and #2 diesel. The term does not include naphtha-type jet fuel, kerosene-type jet fuel, or a petroleum product destined for use in chemical manufacturing or feedstock of that manufacturing.

*Id.*

269. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342(7) (Vernon Supp. 1990)).

A petroleum storage tank means:

- (A) any one or combination of aboveground storage tanks that contain petroleum products and that are regulated by the commission; or  
 (B) any one or combination of underground storage tanks and any connecting underground pipes that contain petroleum products and that are regulated by the commission.

*Id.*

270. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.342(9)). A “release” now includes any spill, overflow, leak, or discharge into subsurface soil, surface water, or groundwater from an underground or aboveground storage tank. *Id.* The new amendments do not redefine person, regulated substance, or underground storage tank. *Compare* Act of May 31, 1989, ch. 228, § 1, 1989 Tex. Sess. Law Serv. 1006-07 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.342(5), (8), (10) (Vernon Supp. 1990)) (defined terms in amended statute) *with* TEX. WATER CODE ANN. § 26.342(1), (2), (4) (Vernon 1988)(definitions of terms in statute).

271. Act of May 31, 1989, ch. 228, § 1, 1989 Tex. Sess. Law Serv. 1007-08 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.344 (Vernon Supp. 1990)). Perhaps the most important tank exemption pertains to noncommercial residential or farm gasoline tanks less than or equal to 1,100 gallons, septic tanks and heating oil tanks. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.344(a)(1) (Vernon Supp. 1990)). The statute also lists several other exemptions. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.344(a)(2)-(8), (b)-(e) (Vernon Supp. 1990)). The amendment also exempts from regulation certain aboveground storage tanks (“ASTs”) used at petrochemical plants, refineries, bulk facilities, and power plants along

tration and regulation of all non-exempt aboveground and underground storage tanks.<sup>272</sup> Furthermore, many other sections were amended or added to the present legislation.<sup>273</sup> For example, the prior registration requirements contained in section 26.346 of the Texas Water Code were amended and now require the Texas Water Commission (TWC) to furnish each petroleum storage tank operator or owner with a registration certificate detailing his responsibilities under the code and the rights of "the owner or operator to participate in the petroleum storage tank remediation fund and groundwater protection cleanup program."<sup>274</sup> The legislature also requires the adoption of performance standards for existing USTs and new UST systems by the TWC,<sup>275</sup> and the inclusion of aboveground storage tanks in release reporting requirements along with USTs.<sup>276</sup>

In the case of an aboveground or underground storage tank release, the TWC possesses the primary regulatory authority for the cleanup.<sup>277</sup> The Texas Water Code directs the TWC to adopt corrective action rules to respond to aboveground or underground storage tank releases.<sup>278</sup> The TWC may also enforce UST regulations with commission orders<sup>279</sup> or emergency

with storage tank systems used by common carrier railroads. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.344(f), (g) (Vernon Supp. 1990)).

272. *Id.* § 2-3 (to be codified at TEX. WATER CODE ANN. § 26.3441, 26.345(a), (e)(Vernon Supp. 1990)).

273. Act of May 31, 1989, ch. 228, §§ 1-18, 1989 Tex. Sess. Law Serv. 1006-20 (Vernon)(to be codified at TEX. WATER CODE ANN. §§ 26.341-.342, .344, .3441, .345-.347, .349, .351, .3511-.3513, .352-.357, .3571-.3574, .358 (Vernon Supp. 1990)).

274. Act of May 31, 1989, ch. 228, § 4, 1989 Tex. Sess. Law Serv. 1009 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.346(c) (Vernon Supp. 1990)).

275. *Id.* § 5 (to be codified at TEX. WATER CODE ANN. § 26.347 (Vernon Supp. 1990)).

276. *Id.* § 6 (to be codified at TEX. WATER CODE ANN. § 26.349(a) (Vernon Supp. 1990)); *see also* Tex. Water Comm'n, 14 Tex. Reg. 4764-4766 (1989)(subchapter D partial release reporting and corrective action requirements for USTs to be codified at 31 TEX. ADMIN. CODE §§ 334.71-.76, .80-.81, .85); Tex. Water Comm'n, 14 Tex. Reg. 1213-1215 (1989), *adopted* 14 Tex. Reg. 4766 (1989)(remaining subchapter D release reporting requirements and corrective action requirements for USTs to be codified at 31 TEX. ADMIN. CODE §§ 334.77-.79, .82-.84).

277. Act of May 31, 1989, ch. 228, § 7, 1989 Tex. Sess. Law Serv. 1009-10 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.351(e) (Vernon Supp. 1990))(TWC vested with primary authority for petroleum releases provided no imminent fire or explosion danger exists).

278. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.351(a)-(e) (Vernon Supp. 1990)). The statute also details appropriate types of clean-up procedures and directs operators or owners to take immediate action in the event of a release. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.351(a)(1)-(6), (b) (Vernon Supp. 1990)). The TWC may also take direct action when the operator or owner is unable, unwilling, or cannot be located. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.351(c) (Vernon Supp. 1990)). The TWC may also act on its own initiative and may retain agents to undertake corrective action. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.351(c)(4), (d) (Vernon Supp. 1990)).

279. *Id.* § 10 (to be codified at TEX. WATER CODE ANN. § 26.353 (Vernon Supp.

orders.<sup>280</sup> Additionally, the TWC may inspect underground or aboveground storage tank facilities<sup>281</sup> and seek recovery of damages from operators or owners for any tank release clean up costs incurred by the TWC.<sup>282</sup>

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1990))(TWC may issue commission orders to enforce UST regulations but must follow procedures listed in section 26.019 of Texas Water Code).

280. *Id.* § 11 (to be codified at TEX. WATER CODE ANN. § 26.354 (Vernon Supp. 1990)). The executive director of the TWC may issue an emergency order to an operator or owner of an UST or aboveground storage tank if there is a threatened or actual UST release and the executive director believes immediate action is necessary to protect the environment or public health and safety. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.354(a)(1)-(2) (Vernon Supp. 1990)). The emergency order may prohibit future releases or require a person to take action to correct the problem. TEX. WATER CODE ANN. § 26.354(b) (Vernon 1988). Additional regulations detail emergency order delivery requirements, hearing requirements, and service requirements. *Id.* § 26.354(c)-(d). An emergency order may be issued by the executive director to the operator or owner of an aboveground or underground storage tank. Act of May 31, 1989, ch. 228, § 11, 1989 Tex. Sess. Law Serv. 1012 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.354(e) (Vernon Supp. 1990)).

281. Act of May 31, 1989, ch. 228, § 13, 1989 Tex. Sess. Law Serv. 1013-14 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.356(b)-(c) (Vernon Supp. 1990)). Operators and owners shall also furnish tank information and allow TWC employees access to tank records upon request of the TWC. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.356(a)(1)-(3) (Vernon Supp. 1990)). In enforcing the statutes or regulations for aboveground or underground storage tanks, the TWC personnel may enter property at reasonable times to obtain samples or inspect the contents of a tank, and monitor or test tanks, contents, associated equipment, groundwater, surrounding soil, surface water or air. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.356(b)(1)-(3) (Vernon Supp. 1990)). The TWC may also order an operator or owner to monitor or test his tanks provided reasonable cause exists to suspect a product release. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.356(c) (Vernon Supp. 1990)). Before an inspection, the TWC must give reasonable notice to the operator or owner and exhibit proper credentials upon arrival. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.356(d) (Vernon Supp. 1990)).

282. *Id.* § 12 (to be codified at TEX. WATER CODE ANN. § 26.355(a) (Vernon Supp. 1990)). Operators or owners of aboveground or underground storage tanks are liable to the state for any UST releases unless "an act of God[,] an act of war[,] the negligence of the State of Texas or the United States; or an act or omission of a third party" caused the release. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.355(b)(1)-(4) (Vernon Supp. 1990)). An operators' or owners' liability, however, is limited to \$10,000 for each release if the petroleum storage tank remediation fund is used for the corrective action costs incurred. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.355(d) (Vernon Supp. 1990)). Additional sections of this statute discuss indemnification and hold harmless agreements, subrogation, proceedings by the attorney general to recover costs, and recovery of funds under this section. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.355(e)-(i) (Vernon Supp. 1990)). See also Nellerhoe, *Toxic Waste: Who Pays the Piper? A Private Party's Federal And Texas Rights To Recovery Of Voluntary Cleanup Costs of Toxic Waste*, 20 ST. MARY'S L.J. 339, 369 (1989)(USTs and recovery of cleanup costs).

B. *Subchapter I. The Groundwater Protection Cleanup Program and the Petroleum Storage Tank Remediation Fund*

The Texas Legislature enacted the Groundwater Protection Cleanup Program and associated statutes in the 1989 legislative session.<sup>283</sup> The Groundwater Protection Cleanup Program<sup>284</sup> directs the TWC to: 1) “negotiate with or direct the responsible parties in site assessment and remediation matters”;<sup>285</sup> 2) approve corrective action plans for affected sites;<sup>286</sup> 3) inspect and review remedial activities, reports, and site assessments;<sup>287</sup> 4) handle claims made against the Petroleum Storage Tank Remediation Fund,<sup>288</sup> and 5) adopt rules to determine the nature and necessity of site assessments.<sup>289</sup>

The most important aspect of the Groundwater Protection Cleanup Program is the Petroleum Storage Tank Remediation Fund (hereinafter referred to as “the Fund”) because it allows owners or operators to meet the state financial responsibility requirements.<sup>290</sup> To qualify for the Fund, a person must first qualify as an “eligible owner or operator.”<sup>291</sup> Upon qualification, eligible owners or operators may receive up to \$1,000,000 to “pay expenses associated with the corrective action for each occurrence taken in response

283. Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1014-20 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3572 (Vernon Supp. 1990)); *see also id.* § 15, 17 (to be codified at TEX. WATER CODE ANN. § 26.3571, .3573-.3574 (Vernon Supp. 1990)).

284. Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1014-15 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3572 (Vernon Supp. 1990)).

285. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3572(b)(1) (Vernon Supp. 1990)).

286. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3572(b)(2) (Vernon Supp. 1990)).

287. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3572(b)(3) (Vernon Supp. 1990)).

288. Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1014 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3572(b)(4) (Vernon Supp. 1990)).

289. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3572(c)(1)-(2) (Vernon Supp. 1990)).

290. *See* Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1015-16 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3573(k) (Vernon Supp. 1990))(Fund provides for use of funds to pay corrective action costs); *see also* Tex. Water Comm’n, 14 Tex. Reg. 1215-16 (1989), *adopted* 14 Tex. Reg. 4784 (1989)(codified at 31 TEX. ADMIN. CODE § 334.93)(TWC regulations relating to scope and amount of required financial responsibility).

291. Act of May 31, 1989, ch. 228, § 15, 1989 Tex. Sess. Law Serv. 1014 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3571 (Vernon Supp. 1990)). In order to qualify as an eligible owner or operator, a person must own or operate a Subchapter I regulated petroleum storage tank, comply with applicable regulations, and meet qualifying standards. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3571(b)(1)-(3) (Vernon Supp. 1990)). In determining compliance with Subchapter I, the TWC may consider various factors and will then designate the person who qualifies as the eligible owner or operator. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3571(c)-(d) (Vernon Supp. 1990)).

to a release from a petroleum storage tank.”<sup>292</sup> The Fund, however, will only provide coverage for petroleum releases and will not cover tanks that solely or principally contain a hazardous substance.<sup>293</sup> Additionally, owners and operators may use the Fund to pay for corrective action costs associated with a release on the petroleum storage tank property or a release beyond property boundaries.<sup>294</sup> The Fund, however, cannot be used to pay for bodily injury or property damage to third parties.<sup>295</sup>

The funding for the Petroleum Storage Tank Remediation Fund will come from a fee imposed on the delivery of petroleum products.<sup>296</sup> The Texas Water Code, section 26.3574, also outlines numerous requirements imposed on the delivery of petroleum products<sup>297</sup> and even includes criminal penalties for non-compliance.<sup>298</sup> Finally, the statutory amendments in the 1989 legislative session set a new annual fee structure for each aboveground and underground storage tank of twenty-five and fifty dollars, respectively.<sup>299</sup>

## VI. TEXAS REGULATIONS AFFECTING UNDERGROUND STORAGE TANKS<sup>300</sup>

On September 8, 1989, the Texas Water Commission issued the final underground storage tank regulations after initial publication on March 10,

292. Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1015-16 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3573(k) (Vernon Supp. 1990)).

293. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3573(l) (Vernon Supp. 1990)); *see also supra* note 267 (definition of hazardous substance).

294. *Id.* § 16 (to be codified at TEX. WATER CODE ANN. § 26.3573(m) (Vernon Supp. 1990)).

295. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3573(n) (Vernon Supp. 1990)). The Fund statute also contains sections that provide for the following: 1) detailed list of sources of funding; 2) list of allowable expenses and people the Fund can pay; 3) direct the TWC to adopt guidelines for the Fund; 4) allow a registration program for corrective action contractors; 5) require the TWC to hear complaints concerning the Fund; and 6) require satisfaction of valid claims brought against the Fund. Act of May 31, 1989, ch. 228, § 16, 1989 Tex. Sess. Law Serv. 1015-16 (to be codified at TEX. WATER CODE ANN. § 26.3573(a), (b), (d)-(j) (Vernon Supp. 1990)).

296. Act of May 31, 1989, ch. 228, § 17, 1989 Tex. Sess. Law Serv. 1016-20 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3574 (Vernon Supp. 1990)); *see also supra* note 268 (defines petroleum product).

297. *Id.* § 17 (to be codified at TEX. WATER CODE ANN. § 26.3574(a)-(z) (Vernon Supp. 1990)).

298. *Id.* (to be codified at TEX. WATER CODE ANN. § 26.3574(t) (Vernon Supp. 1990)).

299. *Id.* § 18 (to be codified at TEX. WATER CODE ANN. § 26.358(f) (Vernon Supp. 1990)). Operators or owners must pay these fees on an annual basis.

300. The remainder of this comment focuses on the Texas regulations affecting underground storage tanks. Earlier sections discussed the federal UST regulations. The following sections discussing similar Texas regulations will refer to the earlier federal discussions.



1989.<sup>301</sup> All regulations become effective on September 29, 1989.<sup>302</sup> Title 31, Chapter 334 of the Texas Administrative Code will contain the new regulations.<sup>303</sup> Until re-publication and distribution of Title 31, two different issues of the *Texas Register* will contain the storage tank regulations.<sup>304</sup>

#### A. Subchapter A. General Provisions

The Texas underground storage tank regulations provide a regulatory framework for UST systems storing toxic, harmful, or hazardous substances,<sup>305</sup> and protect the environment, human health and safety.<sup>306</sup> Subchapter A of the Texas regulations contain the following sections: the regulatory purpose and applicability,<sup>307</sup> definitions,<sup>308</sup> statutory exemptions,<sup>309</sup> commission exclusions,<sup>310</sup> general prohibitions,<sup>311</sup> construction no-

301. Tex. Water Comm'n, 14 Tex. Reg. 1171-1269 (1989), *adopted* 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989)(codified at 31 TEX. ADMIN. CODE §§ 334.3, .13, .42, .53-.54, .77-.79, .82-.84, .91, .93-.94, .97-.103)(current Texas regulations printed in March 10 issue); Tex. Water Comm'n, 14 Tex. Reg. 4729-4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.1-.2, .4-.12, .41, .43-.52, .55, .71-.76, .80-.81, .85, .92, .95-.96, .104-.109)(current Texas regulations printed in September 15 issue).

302. Tex. Water Comm'n, 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989)(effective date of regulations).

303. Tex. Water Comm'n, 14 Tex. Reg. 4714 (1989)(title page of preamble).

304. Tex. Water Comm'n, 14 Tex. Reg. 4714 (1989)). Appendix 4 to this comment contains a list of the published regulations contained in the *Texas Register*. Persons interested in obtaining the *Texas Register* may call the Office of the Secretary of State at (512) 463-5561. Issues cost \$4.00.

305. *See supra* note 267.

306. Tex. Water Comm'n, 14 Tex. Reg. 4729 (1989) (codified at 31 TEX. ADMIN. CODE § 334.1(a)(1)-(3)).

307. *Id.* at 4729-4730 (codified at 31 TEX. ADMIN. CODE § 334.1(a)-(b)). Regulated UST systems include defined UST systems (31 TEX. ADMIN. CODE § 334.2), UST systems containing regulated substances (31 TEX. ADMIN. CODE § 334.2), and systems not exempted by statute (31 TEX. ADMIN. CODE § 334.3(a)) or by commission exclusion (31 TEX. ADMIN. CODE § 334.4(a)). *Id.* at 4729 (codified at 31 TEX. ADMIN. CODE § 334.1(b)(1)(A)-(D)). The Texas regulations apply to all entities owning regulated USTs. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.1(b)(3)). Additionally, any tank holding a regulated substance, either a compartmental tank, dual-use or multiple-use tank, must comply with the regulations. *Id.* at 4729-4730 (codified at 31 TEX. ADMIN. CODE § 334.1(b)(4)(A)-(B)).

308. *Id.* at 4730-4734 (codified at 31 TEX. ADMIN. CODE § 334.2). Certain definitions either differ from or are not defined in the federal regulations. These definitions include corrosion technician, farm, farm tank, and owner. *Id.*

309. Tex. Water Comm'n, 14 Tex. Reg. 1180-1181 (1989) (codified at 31 TEX. ADMIN. CODE § 334.3). The following USTs and containment devices are completely exempt from regulation: 1) "farm or residential tanks with a capacity of 1,100 gallons or less used for storing motor fuel for noncommercial purposes"; 2) heating oil tanks; 3) septic tanks; 4) pits, ponds, lagoons, or surface impoundments; 5) collection systems for stormwater or wastewater; 6) flow-through process tanks; 7) tanks or facilities used in oil and gas production, exploration, or development; 8) storage tanks located above the floor of underground areas; 9) pipeline

tification,<sup>312</sup> registration,<sup>313</sup> certification,<sup>314</sup> seller's disclosure,<sup>315</sup> reporting

facilities regulated by certain federal acts; and 10) interstate pipeline facilities regulated by certain state laws. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.3(a)(1)-(10)). The regulations also provide a partial exemption for “. . . in-ground hydraulic lifts that use a compressed air/hydraulic fluid system and which hold less than 100 gallons of hydraulic oil.” *Id.* at 1181 (codified at 31 TEX. ADMIN. CODE § 334.3(b)). Hydraulic lifts enjoy exemption from all areas except release reporting and corrective action requirements (31 Tex. Admin. Code §§ 334.71-.85). *Id.* An important definition to consider in the statutory exemption section is farm and farm tank. The Texas regulations define a farm and farm tank as follows:

Farm - A tract or tracts of land (including all associated structures and improvements) which are principally devoted to the raising of agricultural or other types of crops, . . . animals, or fish . . . fiber, . . . and plant nurseries with growing operations, but not including timber-growing land and operations dedicated primarily to recreational, aesthetic, or other non-agricultural activities (e.g. golf courses and parks).

Farm tank - A tank located on a farm where the stored regulated substance is or will be utilized directly in the farm activities.

Tex. Water Comm'n, 14 Tex. Reg. 4731 (1989) (codified at 31 TEX. ADMIN. CODE § 334.2).

310. Tex. Water Comm'n, 14 Tex. Reg. 4734 (1989)(codified at 31 TEX. ADMIN. CODE § 334.4). This section completely excludes the following tanks from regulation: USTs containing hazardous waste or a mixture of hazardous waste and regulated substances, wastewater treatment tanks permitted by certain statutes, sumps that hold less than 110 gallons, emergency spill or overflow tanks routinely emptied within 48 hours and inspected at least monthly, and UST systems containing dilute concentrations of regulated substances. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.4(a)(1)-(5)). Other tanks are partially excluded from regulation. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.4(b)-(c)). The TWC, however, *does not exclude airport hydrant fuel systems and field constructed tanks* from regulation. *Compare* Tex. Water Comm'n, 14 Tex. Reg. 4734 (1989) (codified at 31 TEX. ADMIN. CODE § 334.4(a)-(c))(commission exclusions) *with* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-95 (1988)(to be codified at 40 C.F.R. § 280.10(c)(4)-(5))(federal deferral of airport hydrant fuel systems and field constructed tanks for UST systems).

311. Tex. Water Comm'n, 14 Tex. Reg. 4734-35 (1989) (codified at 31 TEX. ADMIN. CODE § 334.5). This section of the regulations requires: 1) UST systems to prevent releases because of corrosion or structural failure; 2) corrosion protection for UST system components; and 3) construction of UST systems in a manner to ensure compatibility with the stored substance. *Id.* at 4734 (codified at 31 TEX. ADMIN. CODE § 334.5(a)(1)-(3)). Section 334.5 also prohibits delivery, after January 1, 1990, of a regulated substance into an unregistered UST system. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.5(b)). Notification and registration provisions also apply to UST systems. *Id.* at 4735 (codified at 31 TEX. ADMIN. CODE § 334.5(c)-(d)).

312. *Id.* at 4735-4737 (codified at 31 TEX. ADMIN. CODE § 334.6). Effective September 1, 1987, the state regulations require an operator or owner to notify the TWC of any installation, replacement, removal or abandonment activities affecting an UST system. *Id.* at 4735 (codified at 31 TEX. ADMIN. CODE § 334.6(a)(1)). Special rules also govern UST systems located in the recharge zone of the Edwards Aquifer. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.6(a)(3)). Additional rules also apply for notification, technical requirements, and authorized people and place, to notify the TWC. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.6(a)(4)-(7)). Specific regulations require notification of the executive director of the TWC at least 30 days before commencement of any major construction activities involving UST systems; however, minor and routine maintenance activities do not require notification. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.6(a)(2), (b)(1)(A)&(B), (b)(2)). Numerous regu-

and recordkeeping,<sup>316</sup> enforcement,<sup>317</sup> other general provisions,<sup>318</sup> and joint

lations are also contained in section 334.6 concerning information the TWC may request, notification of the TWC 24 to 72 hours prior to initiation of the proposed activity, rescheduling, waiver requests, expiration, notification form, and alternative notification procedures. *Id.* at 4735-4737 (codified at 31 TEX. ADMIN. CODE § 334.6(b)(2)(B)&(C), (b)(3)-(6), (c)). An individual may be able to use alternative notification procedures in certain circumstances: 1) when a release is suspected or has occurred and immediate action is required; 2) upon discovery of an unknown UST system during construction activities; 3) when an authorized public official orders an immediate repair or removal of an UST system; 4) or in other situations determined by the executive director of the TWC. *Id.* at 4736-4737 (codified at 31 TEX. ADMIN. CODE § 334.6(c)(1)-(2)). Section 334.6(1) lists the alternative notification procedures. *Id.* at 4736.

313. Tex. Water Comm'n, 14 Tex. Reg. 4737-4738 (1989) (codified at 31 TEX. ADMIN. CODE § 334.7). This section of the regulations discusses general registration provisions, registration for existing tanks, new or replacement tanks, changes or additional information, registration forms, and inadequate information. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.7(a)-(f)). As a general rule, all existing non-exempt, non-excluded UST systems must be registered with the TWC. *Id.* at 4737 (codified at 31 TEX. ADMIN. CODE § 334.7(a)(1)(A)-(D)).

314. Tex. Water Comm'n, 14 Tex. Reg. 4738 (1989) (codified at 31 TEX. ADMIN. CODE § 334.8). An operator or owner who installs a replacement or new UST after September 29, 1989, must ensure the completion of all certification forms and certify to the TWC that the installation meets the technical standards (31 TEX. ADMIN. CODE § 334.45), installation standards (31 TEX. ADMIN. CODE § 334.46), corrosion protection standards (31 TEX. ADMIN. CODE § 334.49), and release detection standards (31 TEX. ADMIN. CODE § 334.50) outlined in the regulations. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.8(1)(A)-(C)). The installer must also certify compliance with the regulations and both the installer's and owner's or operator's forms shall be filed with the TWC. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.8(a)(2)-(3)). All operators and owners must also complete the financial responsibility sections of the registration forms and certify compliance with applicable financial responsibility requirements (31 TEX. ADMIN. CODE §§ 334.91-109). *Id.* (codified at 31 TEX. ADMIN. CODE § 334.8(b)(1)). Additional regulations govern the time limits for filing these forms. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.8(b)(2)(A)-(B)).

315. Tex. Water Comm'n, 14 Tex. Reg. 4738 (1989) (codified at 31 TEX. ADMIN. CODE § 334.9). Sellers of tanks or tank systems to be used in USTs must notify the purchaser of the state regulations concerning registration (31 TEX. ADMIN. CODE § 334.7), and construction notification (31 TEX. ADMIN. CODE § 334.6). *Id.*

316. *Id.* at 4738-4740 (codified at 31 TEX. ADMIN. CODE § 334.10). The regulations require all operators or owners to timely meet all filing and reporting deadlines. *Id.* Applicable reports include: construction notification (31 TEX. ADMIN. CODE § 334.6), Edwards Aquifer notices (31 TEX. ADMIN. CODE § 334.6(a)(2)), registration reports (31 TEX. ADMIN. CODE § 334.7), installation and financial responsibility certification (31 TEX. ADMIN. CODE § 334.8), variance and alternative requests (31 TEX. ADMIN. CODE § 334.43), extension of time requests (31 TEX. ADMIN. CODE § 334.54(d)(2)), site assessment or release determination reports (31 TEX. ADMIN. CODE § 334.55(a)(6)), and UST fee reports (31 TEX. ADMIN. CODE Subchapter B). *Id.* at 4738 (codified at 31 TEX. ADMIN. CODE § 334.10(a)(1)-(8)).

Operators and owners must also ensure the timely filing of all plans, certifications, and reports relating to suspected releases (31 TEX. ADMIN. CODE § 334.72), cleanup of surface spills and overfills (31 TEX. ADMIN. CODE § 334.75), initial release response (31 TEX. ADMIN. CODE § 334.76), site check methods (31 TEX. ADMIN. CODE § 334.74(c)), initial abatement (31 TEX. ADMIN. CODE § 334.77(b)), initial site characterization (31 TEX. ADMIN. CODE § 334.78(b)), free product removal (31 TEX. ADMIN. CODE § 334.79(d)), soil and ground-

and several liability.<sup>319</sup> Currently, the existing regulations only affect under-

water contamination (31 TEX. ADMIN. CODE § 334.80(b)), corrective action (31 TEX. ADMIN. CODE § 334.81), notification of cleanup initiation (31 TEX. ADMIN. CODE § 334.81(e)), compliance with a corrective action plan (31 TEX. ADMIN. CODE § 334.81(g)), and public notices (31 TEX. ADMIN. CODE § 334.82(b)). *Id.* at 4738-4739 (codified at 31 TEX. ADMIN. CODE § 334.10(a)(9)(A)-(J)).

Financial responsibility reports, notifications and other required reports must also be timely filed. *Id.* at 4739 (codified at 31 TEX. ADMIN. CODE § 334.10(a)(10)-(11)). Financial responsibility reports include: financial condition reports (31 TEX. ADMIN. CODE § 334.95(f)), notification of failure of owner or operator securing alternate financial assurance (31 TEX. ADMIN. CODE § 334.95(g)), nonrenewal or cancellation of financial assurance (31 TEX. ADMIN. CODE § 334.103(b)), bankruptcy (31 TEX. ADMIN. CODE § 334.108(c)), release of an operator's or owner's excess guaranteed funds (31 TEX. ADMIN. CODE § 334.100(d)-(f)), financial responsibility reports (31 TEX. ADMIN. CODE § 334.104), and related bankruptcy proceedings (31 TEX. ADMIN. CODE § 334.108(a)). *Id.* (codified at 31 TEX. ADMIN. CODE § 334.10(a)(10)(A)-(E)). Operators and owners must also comply with numerous recordkeeping requirements. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.10(b)).

Operators and owners must develop and maintain all required records for their UST and provide for access to those records by the TWC. As a rule, required records must be maintained on the premises of the UST facility, unless certain conditions are met, which allow storage of the required records at an alternate location or possible storage with the TWC. *Id.* at 4739-4740 (codified at 31 TEX. ADMIN. CODE § 334.10(b)(1)-(2)).

317. Tex. Water Comm'n, 14 Tex. Reg. 4740 (1989) (codified at 31 TEX. ADMIN. CODE § 334.11). In enforcing any TWC regulations, the executive director may require an owner to submit to the TWC more information on the UST, or conduct additional activities to bring an UST system into regulatory compliance. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.11(a)(1)-(2)). The executive director of the TWC may also initiate formal enforcement action, seek administrative penalties, or issue Commission orders. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.11(a)(3), (b)).

318. *Id.* at 4740-4741 (codified at 31 TEX. ADMIN. CODE § 334.12). An UST owner or operator is still liable for compliance with all other regulations affecting tanks and/or regulated substances and must comply with all other applicable TWC regulations. *Id.* at 4740 (codified at 31 TEX. ADMIN. CODE § 334.12(a)-(b)). Operators and/or owners must also, upon request of the TWC or the executive director, furnish UST information, conduct testing or monitoring, permit TWC access to UST records, and allow the TWC to copy UST records. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.12(c)(1)(A)-(C)). Additionally, the TWC may enter an establishment where an UST is located to promptly inspect, obtain samples, or conduct monitoring and testing activities. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.12(c)(2)-(3)).

319. Tex. Water Comm'n, 14 Tex. Reg. 1188 (1989) (codified at 31 TEX. ADMIN. CODE § 334.13). This section of the regulation states: "Past and present owners and/or past and present operators of underground storage tanks may be considered jointly and severally liable for corrective action purposes under the Texas Water Code, § 26.351, and Subchapter D of this title (relating to Release Reporting and Corrective Action)." *Id.*; see also Act of May 31, 1989, ch. 228, § 8, 1989 Tex. Sess. Law Serv. 1010-12 (Vernon)(to be codified at TEX. WATER CODE ANN. § 26.3513(f)-(g) (Vernon Supp. 1990))(statute outlining liability and costs where multiple owners and operators). It seems, however, that the TWC has forgotten to delete the word "past" from this regulation because "owner" and "operator" are not defined to include "past owners or operators." Tex. Water Comm'n, 14 Tex. Reg. 4732 (1989)(codified at 31 TEX. ADMIN. CODE § 334.2). Additionally, in the preamble to the regulations, "the TWC has

ground storage tanks, however, regulations concerning aboveground storage tanks should be published at a later date.<sup>320</sup>

### B. *Subchapter E. Financial Responsibility*

Like the federal regulations, Texas now requires UST owners to demonstrate financial responsibility for their USTs.<sup>321</sup> The effective date of the FR regulations is September 29, 1989.<sup>322</sup> The state FR regulations closely follow the federal financial responsibility regulations.<sup>323</sup> Operators or owners, however, must use the following Texas forms: Letter from Chief Financial Officer,<sup>324</sup> Guarantee,<sup>325</sup> Endorsement or Certificate of Insurance,<sup>326</sup> Performance Bond,<sup>327</sup> Irrevocable Standby Letter of Credit,<sup>328</sup> Trust Fund and

removed all references to past owners or past operators from these definitions. The commission is not intending to impose strict liability for underground storage tank obligations on past owners and operators." *Id.* at 4716. Section 26.3513(f)-(g) of the Texas statutes clearly allow joint and several liability, however, it would seem that section 334.13 of the Texas regulations conflicts with the stated intent of the TWC and should be amended to allow joint and several liability only for "present owners and operators."

320. *See* Tex. Water Comm'n, 14 Tex. Reg. 1180-1181, 1188 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.3, .13)(regulations concerning USTs); *see also* Tex. Water Comm'n, 14 Tex. Reg. 4729-4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.1-.2, .4-.12)(remaining general provisions relating to USTs).

321. Tex. Water Comm'n, 14 Tex. Reg. 1215-1216, 1232-1265 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.91, .93-.94, .97-.103)(partial listing of financial responsibility regulations); Tex. Water Comm'n, 14 Tex. Reg. 4766-4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.92, .95-.96, .104-.109)(remaining financial responsibility regulations).

322. Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989).

323. *Compare* Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370-82 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111)(federal FR regulations) *with* Tex. Water Comm'n, 14 Tex. Reg. 1215-1216, 1232-1265 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.91, .93-.94, .97-.103)(partial listing of financial responsibility regulations); *and* Tex. Water Comm'n, 14 Tex. Reg. 4766-4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.92, .95-.96, .104-.109)(remaining financial responsibility regulations); *see also* Tex. Water Comm'n, 14 Tex. Reg. 1175 (1989) (commission rules follow federal FR rules). For a discussion of the federal FR regulations, see *supra* notes 34-115 and accompanying text.

324. Tex. Water Comm'n, 14 Tex. Reg. 4767-4773 (1989) (codified at 31 TEX. ADMIN. CODE § 334.95)(operators or owners must use form to meet financial test of self-insurance).

325. *Id.* at 4774-4780 (codified at 31 TEX. ADMIN. CODE § 334.96) (guarantee).

326. Tex. Water Comm'n, 14 Tex. Reg. 1232-1242 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.97)(forms for insurance and risk retention group coverage).

327. Tex. Water Comm'n, 14 Tex. Reg. 1242-1249 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.98)(surety bond requirements).

328. Tex. Water Comm'n, 14 Tex. Reg. 1249-1253 (1989), *adopted* Tex. Water Comm'n,

Standby Trust Fund,<sup>329</sup> Certification of Acknowledgement for the Trust and Standby Trust Fund,<sup>330</sup> Certification of Financial Responsibility,<sup>331</sup> and Certification of Valid Claim.<sup>332</sup>

### C. Subchapter C. Technical Standards

#### 1. Applicability, General Standards and Variance and Alternative Procedures

The Texas technical regulations affecting USTs closely follow the federal technical regulations. The Texas regulations, however, contain requirements that are more stringent and detailed than their federal counterparts.<sup>333</sup> The UST technical standards in Texas will apply to all USTs covered by 31 Texas Administrative Code section 334.1(b).<sup>334</sup> The technical standards also list two additional exclusions from regulation: in-ground hydraulic lift systems using compressed air and hydraulic fluid systems;<sup>335</sup> and UST systems falling within the commission exclusions.<sup>336</sup> Additional regulations govern the applicability of the technical standards, and the regulations also state that "a new [UST] system . . . shall refer to any system for which

14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.99)(letter of credit regulations).

329. Tex. Water Comm'n, 14 Tex. Reg. 1253-1264 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.100-.101)(trust fund and standby trust fund provisions).

330. Tex. Water Comm'n, 14 Tex. Reg. 1265 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4784 (1989) (codified at 31 TEX. ADMIN. CODE § 334.101(c)).

331. Tex. Water Comm'n, 14 Tex. Reg. 4781-4782 (1989) (codified at 31 TEX. ADMIN. CODE § 334.105)(regulations about financial assurance recordkeeping).

332. *Id.* at 4782-4783 (codified at 31 TEX. ADMIN. CODE § 334.106). This section details the necessary steps to draw on a financial assurance mechanism. *Id.*

333. Tex. Water Comm'n, 14 Tex. Reg. 1173 (1989)(discusses proposed regulations for USTs). *Compare* Tex. Water Comm'n, 14 Tex. Reg. 4729-4784 (1989)(to be codified at 31 TEX. ADMIN. CODE §§ 334.1-.2, .4-.12, .41, .43-.52, .55, .71-76, .80-.81, .85, .92, .95-.96, .104-.109)(Texas UST regulations contained in September 15 Texas Register) *and* Tex. Water Comm'n, 14 Tex. Reg. 1176-1269 (1989), *adopted* Tex. Water Comm'n, 14 Tex. Reg. 4741, 4764, 4766, 4784 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.3, .13, .42, .53-.54, .77-.79, .82-.84, .91, .93-.94, .97-.103)(UST regulations contained in March 10 Texas Register) *with* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,194-212 (1988)(to be codified at 40 C.F.R. §§ 280.10-.74)(federal technical regulations) *and* Underground Storage Tanks Containing Petroleum-Financial Responsibility Requirements and State Program Approval Objective, 53 Fed. Reg. 43,370-83 (1988)(to be codified at 40 C.F.R. §§ 280.90-.111)(federal financial responsibility regulations).

334. Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.41(a)); *see also supra* notes 306-310 and accompanying text.

335. Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.41(b)(1)).

336. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.41(b)(2)); *see also supra* note 310.

installation has commenced on or after [September 29, 1989] . . . ."<sup>337</sup>

Texas UST standards require: proper design, installation, and operation of all UST components so as to prevent releases; construction with materials compatible with the stored substance; compliance with the most recent applicable industry codes or standards; and compliance with other applicable governmental regulations.<sup>338</sup> An UST owner or operator must remember that the state technical requirements will always apply over industry codes or manufacturers' specifications unless a variance has been granted.<sup>339</sup> The executive director of the TWC may grant variances from the technical regulations.<sup>340</sup> Operators or owners must request a variance if contemplating the use of alternative or new products, methods, procedures, or equipment or if conformance with the applicable regulations is not reasonable or practicable.<sup>341</sup> Additionally, any metallic UST components installed on or after December 22, 1988, must either have cathodic protection or complete isolation from groundwater, backfill material, and other metallic components.<sup>342</sup>

## 2. Implementation Schedules, Technical and Installation Standards for New UST Systems

The Texas regulations outline a comprehensive schedule for implementation and compliance with enacted technical regulations. New UST systems

337. Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.41(c), (d)).

338. Tex. Water Comm'n, 14 Tex. Reg. 1188 (1989), *adopted* 14 Tex. Reg. 4764 (1989)(codified at 31 TEX. ADMIN. CODE § 334.42(a)-(e)).

339. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.42(f)). The TWC may grant variances under 31 TEX. ADMIN. CODE § 334.43. Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.43).

340. Tex. Water Comm'n, 14 Tex. Reg. 4741 (1989) (codified at 31 TEX. ADMIN. CODE § 334.43(b)). The regulation states:

The executive director shall approve such requests only if the owner or operator can reasonably demonstrate that the proposed variance or alternative procedure will result in an underground storage tank system that is no less protective of human health and safety and the environment than a system meeting the requirements of this subchapter.

*Id.*

341. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.43(c)(1)-(2)). The operator or owner must present alternative procedure or variance requests in writing, sign and date them, and provide additional documentation. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.43(d)); *see also id.* (to be codified at 31 TEX. ADMIN. CODE § 334.43(d)(1)-(6))(additional documentation to accompany alternative procedure or variance request). Operators and owners shall also maintain records relating to the variance or alternative procedure request. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.43(e)).

342. Tex. Water Comm'n, 14 Tex. Reg. 1188 (1989), *adopted* 14 Tex. Reg. 4764 (1989)(codified at 31 TEX. ADMIN. CODE § 334.42(g)(1)-(3)). The regulations require cathodic protection or component isolation according to section 334.49 of the TEX. ADMIN. CODE. *Id.*

storing regulated substances<sup>343</sup> must comply with all applicable technical standards.<sup>344</sup> Additional regulations apply to new and existing UST systems storing hazardous substances.<sup>345</sup> Existing "UST systems [storing regulated substances] for which installation has commenced or has been completed on or prior to December 22, 1988," must be cathodically protected and tested for tank integrity (31 TEX. ADMIN. CODE § 334.47(b)(1)) on or before December 22, 1998.<sup>346</sup> The Texas regulations mandate installation of equipment designed to prevent spills and overfills on all existing UST systems "no later than December 22, 1994," a full four years earlier than the federal regulations.<sup>347</sup> Additionally, existing UST systems must meet release detection requirements for piping and existing tanks.<sup>348</sup>

New UST systems installed on September 29, 1989, or later, must meet the TWC technical standards for new UST systems.<sup>349</sup> The regulations include technical standards concerning: 1) general requirements;<sup>350</sup> 2) new

343. Tex. Water Comm'n, 14 Tex. Reg. 4733 (1989) (codified at 31 TEX. ADMIN. CODE § 334.2). The regulations define a regulated substance as:

An element, compound, mixture, solution, [sic] or substance that, when released into the environment, may present substantial danger to the public health, welfare, or the environment. For the purposes of this chapter, a regulated substance shall be limited to any ["hazardous substance" (as defined in this section), any petroleum substance as defined (in this section), any mixture of two or more hazardous substances and/or petroleum substances, and any other substance designated by the commission to be regulated under the provisions of this chapter Aboveground Storage Tanks.

*Id.* This section of the regulations also contains the definitions of "Hazardous substance" and "Petroleum substance." *Id.* at 4731-4732.

344. Tex. Water Comm'n, 14 Tex. Reg. 4741-4742 (1989) (codified at 31 TEX. ADMIN. CODE § 334.44(a)(1)(A)-(D)). The technical standards include new UST system and installation standards (31 TEX. ADMIN. CODE § 334.45-46), corrosion protection standards (31 TEX. ADMIN. CODE § 334.49), release detection standards (31 TEX. ADMIN. CODE § 334.50), spill and overfill standards (31 TEX. ADMIN. CODE § 334.51). *Id.* at 4741-4759.

345. *Id.* at 4742 (to be codified at 31 TEX. ADMIN. CODE § 334.44(a)(2), (b)(2)).

346. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.44(b)(1)(A)).

347. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.44(b)(1)(B)) (emphasis added); see also Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,198-99 (1988)(to be codified at 40 C.F.R. § 280.21(a), (d))(deadline for overfill and spill prevention equipment).

348. Tex. Water Comm'n, 14 Tex. Reg. 4742 (1989) (codified at 31 TEX. ADMIN. CODE § 334.44(b)(1)(C)-(D)). Pressurized piping must have leak detection equipment installed "no later than December 22, 1990." *Id.* (31 TEX. ADMIN. CODE § 334.44(b)(1)(C)(i)). Release detection requirements for gravity and suction piping, and existing tanks must be phased-in based on the age of the tank. *Id.* (31 TEX. ADMIN. CODE § 334.44(b)(1)(C)(ii), (D)). The release detection phase-in dates correspond with the federal regulations. See Tex. Water Comm'n, 14 Tex. Reg. 4754-4758 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50)(release detection requirements); see also *supra* note 180 and accompanying text.

349. Tex. Water Comm'n, 14 Tex. Reg. 4742 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45(a)(1)).

350. *Id.* at 4742-4743 (to be codified at 31 TEX. ADMIN. CODE § 334.45(a)). The general



tanks;<sup>351</sup> 3) new piping;<sup>352</sup> 4) USTs requiring secondary containment systems;<sup>353</sup> 5) other equipment used in new UST systems;<sup>354</sup> and 6) recordkeeping.<sup>355</sup> Operators or owners, however, may request a variance from new tank, piping, or secondary containment regulations subject to TWC

UST technical standards require USTs to prevent product release because of corrosion or structural failure for "the operational life of the UST system," and proper lining of components contacting regulated substances. *Id.* at 4742 (to be codified at 31 TEX. ADMIN. CODE § 334.45(a)(2)-(3)). All UST components contacting regulated substances must have proper corrosion protection (31 TEX. ADMIN. CODE § 334.49), and have been installed according to 31 TEX. ADMIN. CODE § 334.46. *Id.* at 4742-4743 (to be codified at 31 TEX. ADMIN. CODE § 334.45(a)(4)-(5)).

351. *Id.* at 4743 (to be codified at 31 TEX. ADMIN. CODE § 334.45(b)). The technical requirements for new tanks generally follow the federal requirements. *Compare* Tex. Water Comm'n, 14 Tex. Reg. 4743 (1989) (to be codified at 31 TEX. ADMIN. CODE § 334.45(b)) (new tank technical standards) with Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,197 (1988) (to be codified at 40 C.F.R. § 280.20(a)) (federal technical regulations for new tanks); *see also supra* notes 125-30 and accompanying text. The Texas regulations specifically include applicable industry standards in the body of the regulations, consequently an owner or operator will be legally held to those standards. Tex. Water Comm'n, 14 Tex. Reg. 4743 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45(b)(1)(A)(i)-(ii), (B)(i)-(ii), (C)(i)-(ii), (D)(iii)(I)-(III)). The TWC regulations also require appropriate coatings on tanks. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.45(b)(B)-(D)). Operators or owners must equip new tanks with overflow and spill prevention equipment and release detection equipment. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.45(b)(2)-(3)). New tank component regulations require protection for metal fittings, factory installed striker plates, and dielectric bushings or fittings. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.45(b)(4)(A)-(C)).

352. Tex. Water Comm'n, 14 Tex. Reg. 4743-4744 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45(c)). The Texas regulations incorporate the applicable industry codes and standards for new piping systems and require the installation of release detection systems (31 TEX. ADMIN. CODE § 334.50(b)(2)). *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.45(c)(1)(A)(i)-(ii), (B)(i)-(iv), (C)(2)). Additional regulations govern shutoff valves, flexible connectors, metal swing joints, and other metallic fittings, pipes or valves used in new piping systems. *Id.* at 4744 (to be codified at 31 TEX. ADMIN. CODE § 334.45(c)(3)(A)-(C)); *see also supra* notes 130-32 and accompanying text. This section of the comment contains a discussion of the federal regulations affecting new piping systems.

353. Tex. Water Comm'n, 14 Tex. Reg. 4744-4745 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45(d)). This section affects "any UST system situated in the Edwards Aquifer recharge or transition zones, in accordance with Chapter 313 of this title (relating to Edwards Aquifer)" any UST system containing hazardous substances. *Id.* at 4744 (codified at 31 TEX. ADMIN. CODE § 334.45(d)(1)(A)-(B)) (emphasis added). The TWC regulations authorize secondary containment systems in other circumstances. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.45(d)(1)(C)). General performance and secondary containment standards for tanks and piping are also detailed in the regulations. *Id.* at 4744-4745 (codified at 31 TEX. ADMIN. CODE § 334.45(d)(2)-(4)).

354. Tex. Water Comm'n, 14 Tex. Reg. 4745 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45(e)) (contains technical standards for new vent lines, fill pipes, release detection equipment, observations wells, and monitoring wells).

355. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.45(f)).

approval.<sup>356</sup>

The Texas regulations also subject new UST systems to extensive installation requirements.<sup>357</sup> General installation procedures require compliance with one of the enumerated industry standards, and compliance with other regulations.<sup>358</sup> Requirements for anchoring systems may apply in areas with flooding or high water tables.<sup>359</sup> The TWC regulations address piping system installation and installation testing for new piping and tanks.<sup>360</sup> Additional installation regulations list standards for field-installed cathodic protection systems, secondary containment systems, observation wells, monitoring wells, installation certification, and installation records.<sup>361</sup> The installation regulations, however, permit variance requests in the general installation, anchoring system, and certification of installation sections.<sup>362</sup>

### 3. Existing UST System Technical Standards, General Management and Operating Requirements, and Corrosion Protection

The TWC issued extensive regulations addressing the technical standards applicable to existing UST systems, general management and operating standards for USTs, and corrosion protection.<sup>363</sup> Existing USTs must conform with these standards by the applicable dates listed in the UST regulations.<sup>364</sup> The regulations require existing USTs to: 1) meet the technical and installation standards for new USTs;<sup>365</sup> 2) comply with minimum upgrading re-

356. *Id.* at 4743-4745 (codified at 31 TEX. ADMIN. CODE § 334.45(b)(1)(E), (c)(1)(C), (d)(3)(A)(iii)(III)). Operators or owners must comply with the requirements for variances and alternative procedures (31 TEX. ADMIN. CODE § 334.43). *Id.*

357. Tex. Water Comm'n, 14 Tex. Reg. 4745-4749 (1989) (codified at 31 TEX. ADMIN. CODE § 334.46).

358. *Id.* at 4745-4746 (codified at 31 TEX. ADMIN. CODE § 334.46(a)(1)(A)-(D)). Other subsections govern installation personnel, damages, excavation of the UST site, and bedding and backfill for the UST system. *Id.* at 4746 (codified at 31 TEX. ADMIN. CODE § 334.46(a)(2)-(5)).

359. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.46(b)).

360. Tex. Water Comm'n, 14 Tex. Reg. 4746-4747 (1989) (codified at 31 TEX. ADMIN. CODE § 334.46(c)-(d)). The installation requirements include air testing new tanks and piping, tightness testing, and additional installation tests. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.46(d)(1)-(4)).

361. *Id.* at 4747-4749 (codified at 31 TEX. ADMIN. CODE § 334.46(e)-(i)).

362. Tex. Water Comm'n, 14 Tex. Reg. 4746, 4749 (1989) (codified at 31 TEX. ADMIN. CODE § 334.46(a)(1)(D), (b), (h)(1)(A)(iv)). Sections also contain regulations for variance and alternative procedures. *Id.* at 4741 (codified at 31 TEX. ADMIN. CODE § 334.43).

363. Tex. Water Comm'n, 14 Tex. Reg. 4749-4754 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.47-49).

364. *Id.* at 4749 (codified at 31 TEX. ADMIN. CODE § 334.47(a)(1)). For a list of the applicable deadlines, see *infra* Appendix 4.

365. Tex. Water Comm'n, 14 Tex. Reg. 4749 (1989) (codified at 31 TEX. ADMIN. CODE

quirements,<sup>366</sup> or 3) close the UST.<sup>367</sup>

All UST system operators and owners must follow operating and management guidelines.<sup>368</sup> These guidelines direct the operator and owner to follow provisions relating to release prevention and UST system management.<sup>369</sup> Operating and management regulations also require inventory control, spill and overfill control, compliance with operating requirements for release detection and corrosion protection, and maintenance of UST records.<sup>370</sup> Finally, the technical standards outline extensive corrosion protection requirements.<sup>371</sup>

§ 334.47(a)(1)(A)); *see also* Tex. Water Comm'n, 14 Tex. Reg. 4742-4749 (1989) (codified at 31 TEX. ADMIN. CODE § 334.45-.46)(new UST technical and installation standards).

366. Tex. Water Comm'n, 14 Tex. Reg. 4750 (1989) (codified at 31 TEX. ADMIN. CODE § 334.47(a)(1)(B)). The minimum requirements to upgrade existing USTs include assessing tank integrity, installing cathodic protection, performing repairs or corrective action, and installing overfill and spill prevention equipment. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.47(b)(1), (A), (B), (C)(2)). Operators or owners must also add tank and piping release detection devices to existing UST systems. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.47(b)(3), (4)). Additionally, the rules mandate "upgrading requirements for existing hazardous substance UST systems," and require the operator and owner to maintain records relating to UST upgrading. *Id.* at 4751 (codified at 31 TEX. ADMIN. CODE § 334.47(c), (d)).

367. *Id.* at 4750 (codified at 31 TEX. ADMIN. CODE § 334.47(a)(2)); *see also id.* at 4761-4764 (codified at 31 TEX. ADMIN. CODE § 334.55) (UST closure requirements).

368. Tex. Water Comm'n, 14 Tex. Reg. 4751 (1989) (codified at 31 TEX. ADMIN. CODE § 334.48).

369. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.48(a), (b)). The regulations require UST system management according to accepted industry practices. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.48(b)).

370. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.48(c)-(g)).

371. Tex. Water Comm'n, 14 Tex. Reg. 4752-4754 (1989) (codified at 31 TEX. ADMIN. CODE § 334.49). The corrosion protection regulations contain numerous requirements discussing: general requirements; allowable corrosion protection methods; cathodic protection systems; other corrosion protection methods; and corrosion protection records. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.49(a)-(e)). General corrosion protection requirements require owners and operators to protect UST systems or system components from releasing regulated substances because of corrosion. *Id.* at 4752 (to be codified at 31 TEX. ADMIN. CODE § 334.49(a)). The regulations approve of various corrosion protection methods, including the use of noncorrodible material, electrical isolation, coating system components with dielectric material, or the use of steel/fiberglass-reinforced plastic composite tanks. *Id.* (to be codified at 31 TEX. ADMIN. CODE § 334.49(b)(1)-(6)). The regulations also list requirements for cathodic protection systems and other corrosion protection methods. *Id.* at 4752-4753 (to be codified at 31 TEX. ADMIN. CODE § 334.49(c)-(d)). Each subsection contains numerous requirements and should be consulted if a question arises. *Id.* This section also allows variance requests concerning general requirements and "requirements for other corrosion protection methods." *Id.* (codified at 31 TEX. ADMIN. CODE § 334.49(a)(3), (d)(1)(A)(iii)).

#### 4. Release Detection, Overfill and Spill Prevention and Control, Repair and Relining of UST Systems

The Texas release detection regulation resembles the matching federal requirements.<sup>372</sup> The state regulation addresses the general requirements for release detection,<sup>373</sup> requirements for release detection for all UST systems,<sup>374</sup> and release detection for hazardous substance USTs.<sup>375</sup> The TWC release detection regulation also outlines allowable release detection methods and the necessary release detection records.<sup>376</sup> Almost all USTs in Texas shall either employ monthly monitoring systems or “a combination of tank tightness testing and inventory control” for tanks and piping,<sup>377</sup> with addi-

372. Tex. Water Comm'n, 14 Tex. Reg. 1173 (1989)(preamble wherein TWC states that Texas regulation follows federal regulations); *see also* Tex. Water Comm'n, 14 Tex. Reg. 4754-4758 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50)(Texas release detection regulation). *Compare* Tex. Water Comm'n, 14 Tex. Reg. 4754-4758 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50)(Texas release detection rules) *with* Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37201-204 (1988)(to be codified at 40 C.F.R. §§ 280.40-.45)(federal release detection rules). For a discussion of the federal release detection regulations, see *supra* notes 174-99 and accompanying text.

373. Tex. Water Comm'n, 14 Tex. Reg. 4754 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50(a)). The general requirements specify that “owners and operators of new and existing UST systems shall provide a method, or combination of methods, of release detection which shall be” capable of detecting releases, properly installed, operated, calibrated, and maintained, and which shall meet particular performance requirements. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.50(a)(1)(A)-(C)). Additional general requirements mandate the following: compliance with subchapter D of the regulations in the event of a release; closure of USTs that cannot be outfitted with release detection equipment; notification and registration of installation; and compliance with industry codes. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.50(a)(2)-(6)).

374. Tex. Water Comm'n, 14 Tex. Reg. 4754-4755 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50(b)). The release detection regulations identify tanks, pressurized piping, “suction piping and gravity flow piping” as the UST system elements requiring release detection procedures or equipment. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.50(b)(1), (2)(A)-(B)). For a discussion of the technical elements of the release detection regulations, see *supra* notes 174-99 and accompanying text.

375. Tex. Water Comm'n, 14 Tex. Reg. 4755 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50(c)).

376. *Id.* at 4755-4758 (codified at 31 TEX. ADMIN. CODE § 334.50(d)-(e)). Allowable release detection methods include: “tank tightness testing and inventory control”; manual tank gauging; “automatic tank gauging and inventory control”; vapor monitoring; ground-water monitoring; interstitial monitoring; secondary containment barrier monitoring systems; and alternative release detection. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.50(d)(1)-(8)). Each type of monitoring system or procedure has specific regulations governing its applicability and/or operation. *Id.* Regulations also govern and specify the necessary release detection records operators and owners must maintain. *Id.* at 4758 (codified at 31 TEX. ADMIN. CODE § 334.50(e)). For a discussion of the types of release detection methods allowed under federal regulations, see *supra* notes 191-200 and accompanying text.

377. Tex. Water Comm'n, 14 Tex. Reg. 4754-4755 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50(b)(1)(A)-(B), (b)(2),).

tional regulations applying to hazardous substance USTs.<sup>378</sup>

In addition to release detection equipment, operators and owners of all USTs must install overfill and spill prevention equipment by December 22, 1994 for existing USTs, and during installation for USTs installed September 29, 1989, or thereafter.<sup>379</sup> Required equipment includes tight-fill fitting devices, spill containment equipment, and overfill prevention equipment.<sup>380</sup> Additional regulations govern the design and installation of overfill and spill prevention equipment, enumerate exceptions to the overfill and spill requirements, and require the maintenance of overfill or spill records.<sup>381</sup> UST repair and relining regulations require "owners and operators [to] ensure that any repair or relining of an [UST] will prevent releases due to structural failure or corrosion for the remaining operational life of the system."<sup>382</sup> The repair and relining section details the TWC requirements for tank repairs and relining, piping repairs and maintenance, and required recordkeeping.<sup>383</sup>

##### 5. Reuse of Used Tanks, Temporary Removal from Service, and Permanent Removal from Service

The final sections of the technical regulations address reuse of used tanks and the temporary or permanent removal of an UST from service. The TWC regulations allow for the reuse or reinstallation of a used tank provided the tank will not leak "for the remaining operational life of the tank," and provided all other technical and recordkeeping regulations are met.<sup>384</sup>

The TWC technical standards also allow the temporary removal from service of an UST system when:

378. Tex. Water Comm'n, 14 Tex. Reg. 4755 (1989) (codified at 31 TEX. ADMIN. CODE § 334.50(c)). This section of the regulations lists the standards for hazardous substance release detection systems in addition to the regular release detection requirements. *Id.*

379. Tex. Water Comm'n, 14 Tex. Reg. 4758-4759 (1989) (codified at 31 TEX. ADMIN. CODE § 334.51(b)(1)).

380. *Id.* at 4759 (codified at 31 TEX. ADMIN. CODE § 334.51(b)(2)(A)-(C)).

381. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.51(b)(3)-(4), (c)).

382. Tex. Water Comm'n, 14 Tex. Reg. 4759-4760 (1989) (codified at 31 TEX. ADMIN. CODE § 334.52(a)(1)).

383. *Id.* 4760-4761 (codified at 31 TEX. ADMIN. CODE § 334.52(b)-(d)).

384. Tex. Water Comm'n, 14 Tex. Reg. 1207 (1989), *adopted* 14 Tex. Reg. 4764 (1989)(codified at 31 TEX. ADMIN. CODE § 334.53(a)(1), (2), (b)-(c)). Applicable technical regulations include: 1) "UST System Repairs and Relining" (31 TEX. ADMIN. CODE § 334.52); 2) compatibility of lining with stored regulated substance; 3) "Installation Standards for New UST Systems" (31 TEX. ADMIN. CODE § 334.46); 4) "Spill and Overfill Prevention and Control" (31 TEX. ADMIN. CODE § 334.51); 5) corrosion protection (31 TEX. ADMIN. CODE § 334.49(c)); 6) release detection (31 TEX. ADMIN. CODE § 334.50); 7) "Technical Standards for New UST Systems" (31 TEX. ADMIN. CODE § 334.45(b)(4)); and 8) exterior coatings for fiberglass-reinforced plastic and appropriate cathodic protection. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.53(a)(2)-(4), (b)(1)-(4)).

- (1) The normal operation and use of the UST system is deliberately, but temporarily, discontinued for any reason.
- (2) The infrequent use of the UST system cannot be adequately justified as part of its purpose.
- (3) The operation, maintenance, and/or release detection procedures are determined to be inadequate or otherwise inconsistent with the monitoring procedures normally associated with in-service systems of similar type and purpose.<sup>385</sup>

All UST systems not used for three consecutive months must meet certain maintenance requirements.<sup>386</sup> Additional regulations govern protected and monitored UST systems<sup>387</sup> and unprotected and unmonitored UST systems.<sup>388</sup> Unless the operator or owner receives prior approval from the executive director of the TWC, no unprotected and unmonitored UST may remain out of service for longer than twelve months.<sup>389</sup> Other regulations also govern USTs brought back into service, define and regulate empty systems, and list other requirements concerning releases, registration, and fees.<sup>390</sup>

The final technical requirement addresses the permanent removal of a UST system from service.<sup>391</sup> An operator or owner may either remove the UST from the ground, abandon the UST in place, or conduct a permanent change-in-service.<sup>392</sup> The permanent removal provisions require: 1) notification to the TWC; 2) adherence to industry practices; 3) removal opera-

385. Tex. Water Comm'n, 14 Tex. Reg. 1207-1208 (1989), *adopted* 14 Tex. Reg. 4764 (1989)(codified at 31 TEX. ADMIN. CODE § 334.54(a)(1)-(3)).

386. *Id.* at 1207 (codified at 31 TEX. ADMIN. CODE § 334.54(b)).

387. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.54(c)) (protected and monitored systems would comply with corrosion protection and release detection regulations).

388. *Id.* at 1207-1208 (codified at 31 TEX. ADMIN. CODE § 334.54 (d))(systems not complying with technical regulations).

389. *Id.* at 1207-1208 (codified at 31 TEX. ADMIN. CODE § 334.54(d)(1)(B), (2)). If after 12 months the UST is not brought back into service, the operator or owner must either permanently close the UST, return the UST to service, or upgrade the UST. *Id.* at 1208 (codified at 31 TEX. ADMIN. CODE § 334.54(d)(1)(B)(i)-(iii)). A protected and monitored UST, however, may remain out of service for an indefinite period of time provided corrosion protection, release detection, and temporary removal requirements are met. *Id.* at 1207 (codified at 31 TEX. ADMIN. CODE § 334.54(c)(1)-(3)).

390. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.54(d)(3), (e)-(f)). Empty temporarily out of service UST systems will be exempt from release detection requirements provided certain conditions have been met. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.54(e)(1)-(3)). These conditions include the removal of all but 2.5 centimeters of residue that will "not pose an unreasonable risk to human health and safety . . . if a release occurs. . . ." *Id.*

391. Tex. Water Comm'n, 14 Tex. Reg. 4761-4764 (1989) (codified at 31 TEX. ADMIN. CODE § 334.55).

392. Tex. Water Comm'n, 14 Tex. Reg. 4761 (1989) (codified at 31 TEX. ADMIN. CODE § 334.55(a)(1)).

tions be conducted by qualified personnel; 4) owners or operators to empty and clean USTs; 5) proper disposal of regulated substances, contaminated soil, or other material; and 6) inspection for releases.<sup>393</sup> Various regulations govern the process of getting the tank out of the ground, storing, transporting, and disposing of the tank.<sup>394</sup> On the other hand, a tank can be left in the ground by an abandonment-in-place or by a change-in-service.<sup>395</sup> This section also contains the site assessment regulations and outlines the basic conditions and proper procedures for conducting site assessments.<sup>396</sup> Finally, the operator and owner must maintain adequate records demonstrating compliance with TWC regulations for a minimum of five years.<sup>397</sup>

#### D. *Subchapter D. Release Reporting and Corrective Action*

Release reporting and corrective action regulations apply to all operators and owners of USTs.<sup>398</sup> The regulations require an operator or owner to notify the TWC within twenty-four hours of "the discovery by the owners and operators, or written notification by others to the owner or operator, of released regulated substances at the UST site or in the surrounding area . . .," unusual operating conditions, monitoring results indicating a release, or a breach of a secondary containment unit.<sup>399</sup> The Texas regulations concerning release reporting and corrective action are almost identical to the federal regulations discussed in an earlier section of this comment.<sup>400</sup> The

393. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.55(a)(1)-(6)). Additional general provisions also apply. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.55(a)(7)-(9)). An interesting section in the regulations gives the TWC the power to require operators or owners to comply with corrective action, site assessment or removal requirements if "the methods previously used for the release determination or the removal from service are unknown . . . or [were] . . . inadequate." *Id.* (codified at 31 TEX. ADMIN. CODE § 334.55(a)(9)(A)-(D)).

394. Tex. Water Comm'n, 14 Tex. Reg. 4761-4762 (1989) (codified at 31 TEX. ADMIN. CODE § 334.55(b)(1)-(5)). Tank owners must also develop and maintain numerous records concerning permanent removal. *Id.* at 4762 (codified at 31 TEX. ADMIN. CODE § 334.55(b)(6)).

395. *Id.* at 4762-4763 (codified at 31 TEX. ADMIN. CODE § 334.55(c)-(d)).

396. *Id.* at 4763-4764 (codified at 31 TEX. ADMIN. CODE § 334.55(e)).

397. *Id.* at 4764 (codified at 31 TEX. ADMIN. CODE § 334.55(f)).

398. Tex. Water Comm'n, 14 Tex. Reg. 4764 (1989) (codified at 31 TEX. ADMIN. CODE § 334.71).

399. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.72(1)-(4)).

400. Compare Tex. Water Comm'n, 14 Tex. Reg. 4764-4766 (1989) (codified at 31 TEX. ADMIN. CODE §§ 334.71-.76, 334.80-.81, 334.85)(regulations concerning corrective action and release reporting) and Tex. Water Comm'n, 14 Tex. Reg. 1213-1215,(1989), adopted 14 Tex. Reg. 4766 (1989)(codified at 31 TEX. ADMIN. CODE §§ 334.77-.79, 334.82-.84)(remaining corrective action and release reporting regulations) with Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,204-06 (1988)(to be codified at 40 C.F.R. §§ 280.50-.67)(federal release reporting, response, confirmation, and corrective action regulations); see also *supra* notes 200-42 and accompanying text.

only significant differences within the regulations are: 1) allowing operators and owners to receive written notification from others before notifying the TWC;<sup>401</sup> 2) filing a report with the TWC if no release has been found;<sup>402</sup> 3) allowing the executive director to request additional related information in certain circumstances;<sup>403</sup> 4) additional requirements for a corrective action plan;<sup>404</sup> and 5) requiring the operator or owner to conduct the public notification.<sup>405</sup> The TWC regulations, however, contain several additional sections in subchapter D including provisions dealing with emergency orders,<sup>406</sup> corrective action performed by the TWC,<sup>407</sup> and management of wastes.<sup>408</sup>

## VII. CONCLUSION

The new federal and state UST regulations will affect thousands of businesses in Texas. Unfortunately, the UST regulations will severely impact many smaller businesses and will eventually result in the closure of many retail gasoline stations and other facilities that utilize USTs. The positive side to the UST regulations will be the savings to society from less groundwater contamination and pollution by USTs. If properly implemented, the UST technical and financial responsibility regulations will greatly reduce potential pollution to groundwater supplies and promote a cleaner and safer environment.

The EPA FR regulations require UST owners and operators to insure against the possible corrective action costs of a LUST. The EPA is primarily concerned with the costs of cleaning up an UST release and has set FR levels at \$500,000 or \$1,000,000 per-occurrence depending upon the classification of the owner or operator. Additionally, annual aggregate FR amounts of \$1,000,000 or \$2,000,000 apply to owners or operators based on the total number of USTs in operation. Owners or operators must demonstrate and

401. Tex. Water Comm'n, 14 Tex. Reg. 4764 (1989) (codified at 31 TEX. ADMIN. CODE § 334.72(1)).

402. *Id.* at 4765 (codified at 31 TEX. ADMIN. CODE § 334.74(3)).

403. Tex. Water Comm'n, 14 Tex. Reg. 1213-1214 (1989), *adopted* 14 Tex. Reg. 4766 (1989)(codified at 31 TEX. ADMIN. CODE §§ 334.78(a)(5), .79(4)(H)).

404. Tex. Water Comm'n, 14 Tex. Reg. 4766 (1989) (codified at 31 TEX. ADMIN. CODE § 334.81(e)-(g)).

405. Tex. Water Comm'n, 14 Tex. Reg. 1214 (1989), *adopted* 14 Tex. Reg. 4766 (1989)(codified at 31 TEX. ADMIN. CODE § 334.82(b)).

406. Tex. Water Comm'n, 14 Tex. Reg. 1215 (1989), *adopted* 14 Tex. Reg. 4766 (1989)(codified at 31 TEX. ADMIN. CODE § 334.83)(allows commission to issue emergency orders to operators or owners).

407. *Id.* (codified at 31 TEX. ADMIN. CODE § 334.84)(allows TWC to perform corrective action in certain circumstances).

408. Tex. Water Comm'n, 14 Tex. Reg. 4766 (1989) (codified at 31 TEX. ADMIN. CODE § 334.85)(requires disposal of LUST wastes in accordance with applicable law).

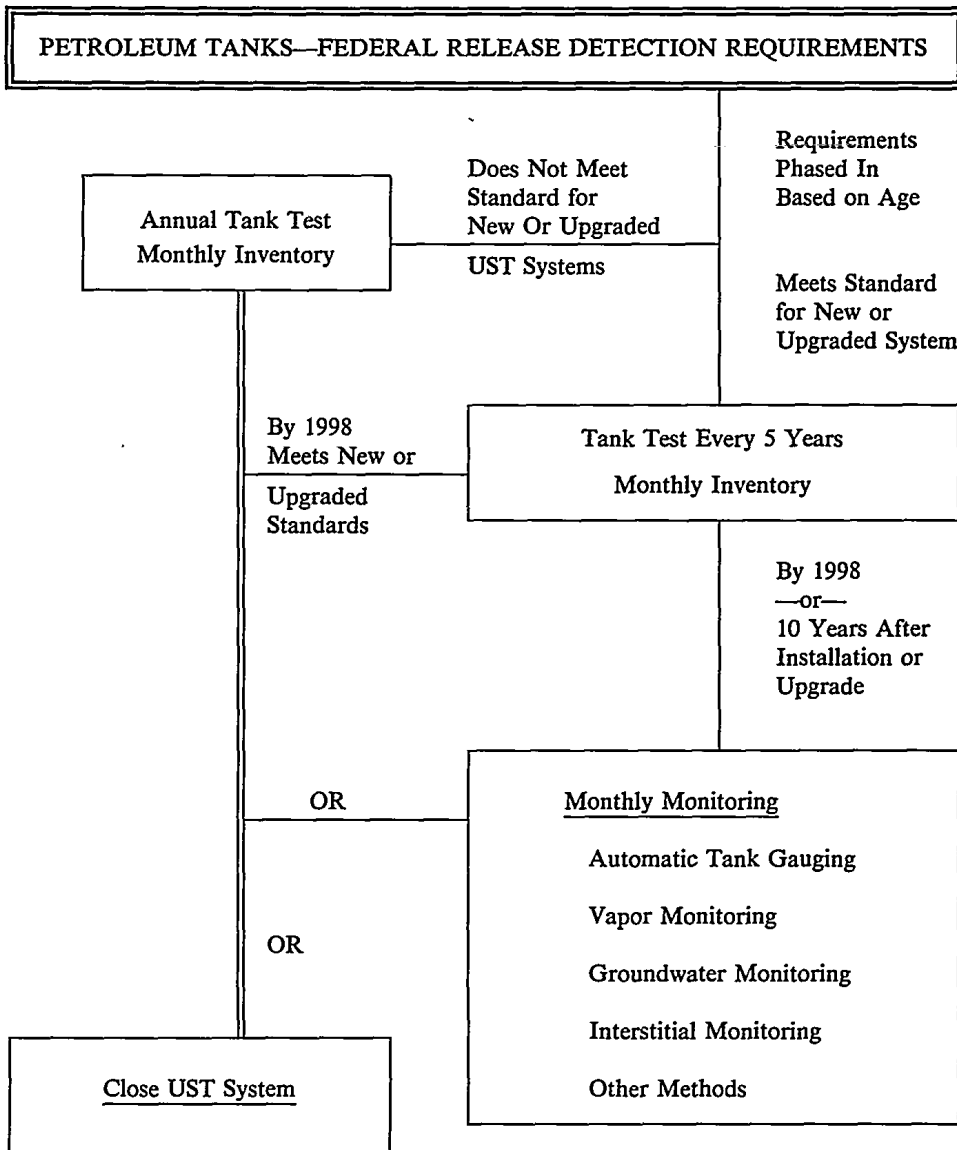


maintain financial responsibility by January 24, 1989, at the earliest, or by October 26, 1990, at the latest, depending upon the owner's or operator's classification. Finally, the FR regulations provide an owner or operator with numerous alternatives to demonstrate financial responsibility.

In addition to the FR requirements, the EPA has also promulgated extensive technical regulations applicable to millions of USTs. Eventually all USTs will meet the EPA technical requirements for system design, construction, installation, operation, and release detection or they will have to be closed. In the case of an UST release, the owner or operator must immediately notify the implementing agency and commence corrective action. Technical regulations also govern closure and any change-in-service of an UST.

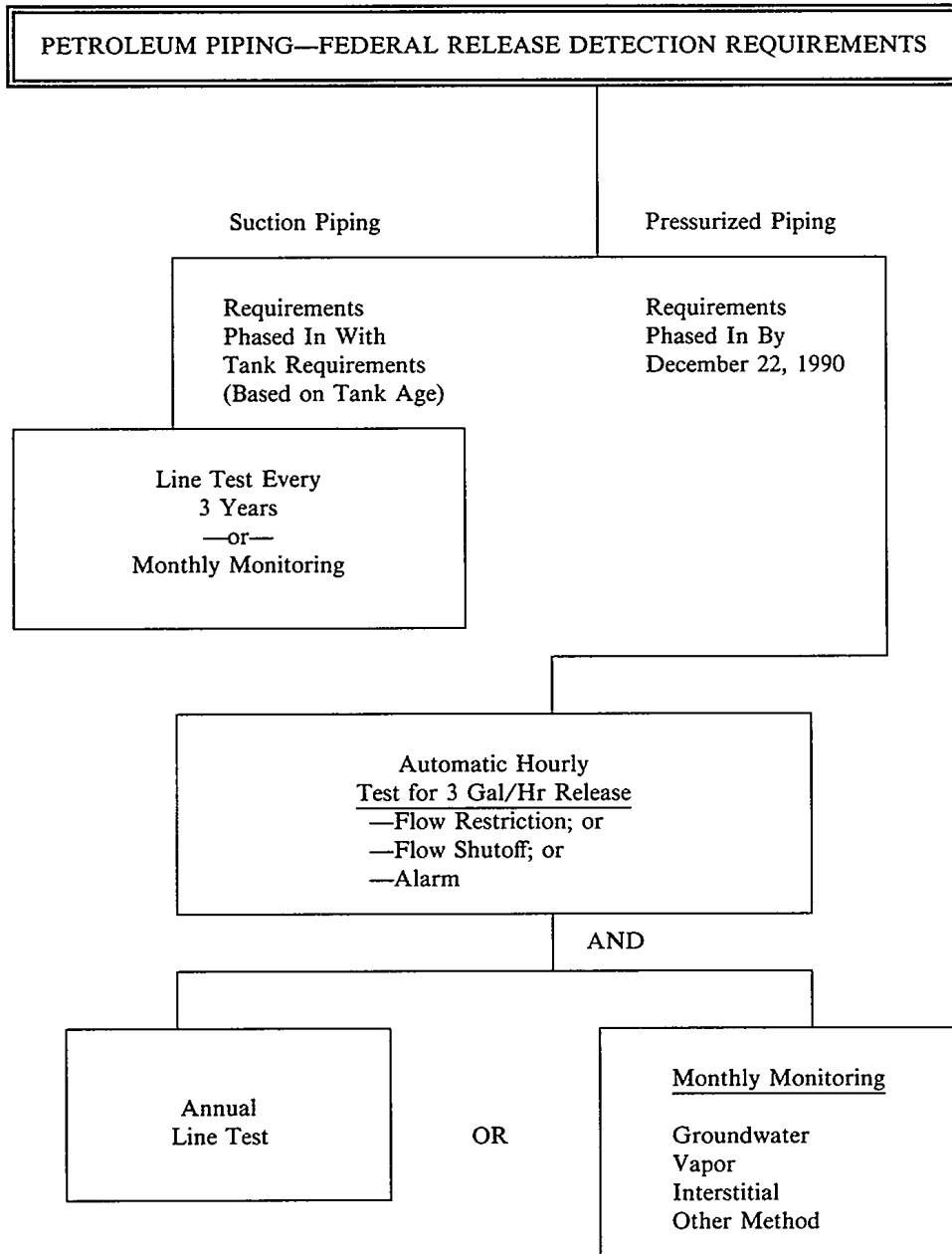
The EPA technical and FR regulations are designed to interact with state statutes and UST regulations. On September 29, 1989, the TWC formally adopted regulations addressing underground storage tanks and at a later date should promulgate regulations concerning aboveground storage tanks. The state regulations outlined in this comment closely follow the federal regulations in many aspects. Important differences, however, exist as to the effective dates for several provisions. The state regulations often provide more detail than the federal counterparts and require compliance with listed standards rather than referenced standards as in the federal regulations.

APPENDIX 1



Source: Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,149 (1988) (Figure 4).

APPENDIX 2



Source: Underground Storage Tanks; Technical Requirements, 53 Fed. Reg. 37,152 (1988) (Figure 5).

## APPENDIX 3

|   |
|---|
| <p style="text-align: center;">INFORMATION TO OBTAIN INDUSTRY STANDARDS/CODES</p> |
|---|

ACT—Association for Composite Tanks  
 108 North State Street  
 Chicago, IL 60602  
 (301) 355-1307 (for information requests)

API—American Petroleum Institute  
 1220 L Street, N.W.  
 Washington, D.C. 20005  
 (202) 682-8000

EPA—Environmental Protection Agency  
 Office of Underground Storage Tanks  
 P.O. Box 6044  
 Rockville, MD 20850  
 1-(800)-424-9346

Fiberglass Petroleum Tank and Pipe Institute  
 One SeaGate, Suite 1001  
 Toledo, OH 43604  
 (419) 247-5412

NACE—National Association of Corrosion Engineers  
 Box 218340  
 Houston, TX 77218  
 (713) 492-0535

NFPA—National Fire Protection Association  
 Batterymarch Park  
 Quincy, MA 02269  
 (617) 770-3000

NLPA—National Leak Prevention Association  
 P.O. Box 29809  
 Cincinnati, OH 45229  
 (513) 281-7693  
 1-(800)-543-1838

PEI—Petroleum Equipment Institute  
 Box 2380  
 Tulsa, OK 74101  
 (918) 743-9941

STI—Steel Tank Institute  
 P.O. Box 4020  
 Northbrook, IL 60065  
 (312) 498-1980

UL—Underwriters Laboratories  
 333 Pfingsten Road  
 Northbrook, IL 60062  
 (312) 272-8800

Source: Office of Underground Storage Tanks, U.S. Environmental Protection Agency, *Musts for USTs* (1988).

APPENDIX 4

Location of Final Texas Storage Tank  
Regulations

| Texas Register<br>September 15, 1989 | Texas Register<br>March 10, 1989 |
|--------------------------------------|----------------------------------|
| § 334.1-.2                           | § 334.3                          |
| § 334.4-.12                          | § 334.13                         |
| § 334.41                             | § 334.42                         |
| § 334.43-.52                         | § 334.53-.54                     |
| § 334.55                             | § 334.77-.79                     |
| § 334.71-.76                         | § 334.82-.84                     |
| § 334.80-.81                         | § 334.91                         |
| § 334.85                             | § 334.93-.94                     |
| § 334.92                             | § 334.97-.103                    |
| § 334.95-.96                         |                                  |
| § 334.104-.109                       |                                  |

1989]

*COMMENT*

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## APPENDIX 5

## Regulatory Requirements and Deadlines in Texas

| <u>Regulatory Requirement</u>  | <u>Applicable Deadline</u>  |
|--|---|
| Requirements for all existing UST systems (§ 334.47)                             | On or prior to December 22, 1998  |
| Tank integrity assessment and cathodic protection (§ 334.47(b)(1))               | No later than December 22, 1998   |
| Spill and overflow prevention (§ 334.51(b))                                      | No later than December 22, 1994   |
| Release detection for pressurized piping (§ 334.50(b)(2)(A))                     | No later than December 22, 1990   |
| Release detection for suction piping and gravity-flow piping (§ 334.50(b)(2)(B)) | No later than the date on which release detection is required for the tank to which such piping is connected  |
| and  |   |
| Release detection for existing tanks (§ 334.50(b)(1))                            | December 22, 1989, for tanks where the installation dates are undetermined or unknown;<br>December 22, 1989, for tanks installed during 1964 or prior years;<br>December 22, 1990, for tanks installed during the years 1965-1969, inclusive;<br>December 22, 1991, for tanks installed during the years 1970-1974, inclusive;<br>December 22, 1992, for tanks installed during the years 1975-1979, inclusive;<br>December 22, 1993, for tanks installed during the years 1980-1987, inclusive; and<br>December 22, 1993, for tanks installed between January 1, 1988, and December 22, 1988, inclusive. |

Tex. Water Comm'n, 14 Tex. Reg. 4742 (1989) (codified at 31 TEX. ADMIN. CODE § 334.44(b))(direct quotations of enumerated requirements and applicable dates).