Underground Storage Tanks: A Lawyer's Guide to Recent Federal and North Carolina Legislation

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INTRODUCTION

Currently there are millions of underground storage tanks in the United States. Several million contain petroleum or hazardous chemicals. Thousands of these underground storage tanks leak. Many more are expected to leak in the future. Many problems surface when these storage tanks leak. Fires, explosions, or more commonly, the contamination of ground water are a few of these problems. Fifty percent of the United States' population uses this ground water as a source of drinking water.

The Hazardous and Solid Waste Amendments of 1984 (HSWA) to the Resource Conservation and Recovery Act (RCRA) authorized the Environmental Protection Agency (EPA) to promulgate rules regulating underground storage tanks. On September 23, 1988, the EPA published the final rules for the technical standards and corrective action requirements for owners and operators of underground storage tanks. On October 26, 1988, the EPA published the final rules for the financial responsibility requirements of owners and operators of underground storage tanks. These regulations provide the minimum standards to be considered in the regulation of underground storage tanks.

2. Id.
3. Id.
4. Id.
5. Id.
9. Id.
11. See supra, notes 8, 10.
Superfund Amendments and Reauthorization Act (SARA) amendments to RCRA provide that states may adopt their own programs for the regulation of underground storage tanks. The individual programs must be "no less stringent" than these minimum standards. North Carolina has yet to adopt a program for the regulation of technical standards and corrective action requirements for owners and operators of underground storage tanks. However, a program should be adopted and submitted to the EPA for approval in the summer of 1990. North Carolina has adopted statutory requirements for the financial responsibility requirements of owners and operators of underground storage tanks.

This Comment focuses on what is already a common problem facing attorneys and their clients who own underground storage tanks (USTs). That problem, from the client's perspective, is, "What am I supposed to do?" There are a multitude of USTs in the United States. Many of these underground tanks contain petroleum. Often these tanks are located at "mom and pop" gas sta-

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14. Mark Creel, Environmental Specialist with the North Carolina Petroleum Marketers Association stated that the North Carolina regulations have been written. Public hearings on the regulations are expected to be conducted in May, 1990. The Environmental Management Commission will then meet and consider adoption of the regulations. Telephone Interview with Mark Creel, Environmental Specialist with the North Carolina Petroleum Marketers Association (April 2, 1990).

Upon adoption, the regulations will be submitted to the EPA for approval. The applicable statute sets forth:

(d) EPA determination

(1) Within one hundred and eighty days of the date of receipt of a proposed State program, the Administrator shall, after notice and opportunity for public comment, make a determination whether the State's program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section.

(2) If the Administrator determines that a State program complies with the provisions of this section and provides for adequate enforcement of compliance with the requirements and standards adopted pursuant to this section, he shall approve the State program in lieu of the Federal program and the State shall have primary enforcement responsibility with respect to requirements of its program.

This Comment focuses on the requirements a commercial gas station owner must follow in the operation of underground storage tanks. This Comment also provides sample lease provisions for the owner of an UST who leases the premises to the operator of the facility. This Comment also focuses on the immediate concerns of owners and operators of existing USTs, and the requirements they must meet in order to comply with the regulations.

First, this Comment offers a practical guide to the regulations concerning the technical standards and corrective action requirements for owners and operators of USTs. Since North Carolina has yet to adopt a program concerning the technical standards and corrective requirements, this Comment proceeds on the assumption that North Carolina will adopt the minimum standards set forth by the EPA. This is no prediction that North Carolina will adopt these minimum standards verbatim. However, the EPA standards are the minimum possible standards that may be adopted. Thus, North Carolina's statutes containing provisions for technical standards and corrective requirements, when enacted, will be at least as strict as these standards and requirements. Next, this Comment acts as a guide through North Carolina General Statutes. These statutes set forth the financial responsibility requirements of the owners and operators of existing USTs. North Carolina has adopted these requirements. As such, they will be administered in lieu of the EPA standards for financial responsibility.

BACKGROUND

Congress enacted the HSWA amendments to RCRA in 1984. These amendments were enacted in response to the environmental problems associated with leaking underground storage tanks ("LUSTS"). In 1986 Congress enacted SARA. RCRA, enacted

17. "The new federal regulations contain provisions with requirements for owners and operators who wish to install new USTs. This topic is beyond the scope of this Comment." 40 C.F.R. §§ 280.11, 280.20, 280.22.
18. See supra, note 8.
19. 40 C.F.R. §§ 280.10-.74.
20. See supra, note 15.
22. See supra, note 6.
23. Hargrove and Turlington, North Carolina's New Lust Law, Campbell
in 1976, devised a regulatory scheme for the EPA to promulgate rules and regulations applicable to facilities "engaged in the ongoing management of hazardous wastes." HSWA extends authority to the EPA to provide rules and regulations applicable to USTs. HSWA provides that the regulatory schemes of the EPA covering USTs would apply in every state. However, states may apply to the Administrator for approval of state programs that will be administered in lieu of the federal programs. The primary requirement of any state program up for approval is that the state adopt standards no "less stringent" than the federal requirements. This requirement of the state standards for UST regulations is codified at 42 U.S.C. 6991c(b).

The 1984 HSWA amendments to RCRA specifically provide for the regulation of underground storage tanks. These provisions of RCRA were enacted because there were no provisions dealing with underground storage tanks used to store petroleum. RCRA is targeted primarily at the "ongoing management of hazardous waste," and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) "focuses on the problems created by past disposal practices." Neither of these statutes provided for the regulation of underground storage tanks used to store petroleum before the HSWA Amendments of 1984. The 1984 HSWA is the enabling statute of the EPA regulations.

24. See supra, note 12.
26. Id.
28. Id. at § 6991c(a).
29. Id. at § 6991c(b)(1).
30. The text of this provision provides:
   (1) A State program submitted under this section may be approved only if the requirements under paragraphs (1) through (7) of subsection (a) of this part are no less stringent than the corresponding requirements standards promulgated by the Administrator pursuant to section 6991b(a).
31. See supra, note 6.
32. Chambers & Gray, supra note 25, at 7.
34. Chambers & Gray, supra note 25, at 7.
concerning the regulation of underground storage tanks. This statute provides the basis for the EPA regulations. It also provides the initial requirements in consideration of proposed underground storage tank programs by the individual states for approval.

TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENT

A. Who is responsible?

1. Owners and Operators

Attorneys are now being called on to advise clients who may or may not own "underground storage" tanks that are subject to the EPA and North Carolina regulations. The attorney must first determine whether the client owns any storage tanks that fall under the EPA's definition of USTs. The EPA defines "USTs" as:

... any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any:

(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
   (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

35. 42 U.S.C. §§ 6991a(b)(2), 6991b(a).
36. 42 U.S.C. § 6991c(a)-(e).
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.”

This definition of "USTs" excludes many storage tanks that are actually "underground". This definition restricts the USTs that are subject to the regulations to those that are "used to contain an accumulation of regulated substances.” Therefore, the definition of "regulated substance" is very important to the determination of applicability of the regulations to an UST. The EPA includes in the definition of "regulated substance":

(b) Petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

The term "regulated substance" includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

The USTs employed by the client in this example are completely underground. As such, they do not fit into any of the exceptions to the definition of "UST". Petroleum products are specifically included in the definition of "regulated substances." Considered together, these definitions certainly include USTs used to store petroleum products for commercial purposes by the client in this example. There is an important point to remember here. Any USTs less than 10 percent underground that are used to store petroleum products are not subject to any of the regulations concerning USTs.

Next, consideration must be given to the question of whether

37. 40 C.F.R. § 280.12 “Underground Storage Tank”.
38. Id.
39. Id.
40. 40 C.F.R. § 280.12 “Regulated substances”.
41. See supra, note 37.
42. See supra, note 40.
43. See supra, note 37.
this client is an “owner” or “operator” as defined in the regulations. The relevant EPA regulations include in the definition of “owner”: “(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. . . .” 44 The relevant section includes as the definition of “operator”: “any person in control of, or having responsibility for, the daily operation of the UST system.” 45 The client in this example fits the description of an “owner” and an “operator”. He owns the UST in question and is also the sole proprietor and operator of the business. This is the clearest case of a person required to follow the EPA regulations.

The regulations are clear in the case of a person who “owns and operates” a business employing USTs for the storage of regulated substances. An interesting point arises, however, when the owner and operator are not the same person. Nowhere in the EPA regulations is there a distinction made between the duties of an “owner” as opposed to those of an “operator”. “The requirements of this part apply to all owners and operators of an UST system as defined in § 280.12 except as otherwise provided . . .” 46 This provision holds all owners and operators responsible for the technical requirements, no matter what their relation is to the actual operation of the UST. 47

2. Lessors and Lessees

a. Responsibilities of complying with the program

Suppose the owner of a gas station leases the land, building, and equipment (including the UST) of the station to a lessee. Assume that the lessee is the sole operator of the business, yet owns none of the property or the equipment. Under the EPA regulations, the owner in this case is held to the same responsibility as the operator of the business. 48 Neither can escape that responsibil-

44. This section also provides that the definition of “Owner” includes:
   (b) In the case of any UST system in use before November 8, 1984, but no longer in use on the date, any person who owned such UST immediately before the discontinuation of its use.
40 C.F.R. § 280.12 “Owner.”
45. 40 C.F.R. § 280.12 “Operator”.
46. 40 C.F.R. § 280.10.
47. Id.
48. Id.
ity. A problem arises if the owner and operator fail to discuss who will be responsible for bringing the UST into compliance with the regulations. Each may assume that the other will bring the UST into compliance. They may not realize that they are both responsible under these regulations. This is especially true in the case of an absent owner who has no contact with the operator of the UST. For example, the owner may have no contact with the operator except in receiving a monthly or yearly payment of rent. Attorneys advising the UST owners must make it absolutely clear that they are also responsible for complying with the regulations. The owners must take an active part in bringing these USTs into compliance with the regulations.

b. Options for Lessors and Lessees

Lessors and lessees of property housing USTs should decide early who will be responsible for insuring that the USTs are in compliance with the regulations. They should include provisions in the lease covering the duties of each party. This will prevent a disagreement between the parties if it is later determined that the USTs do not meet the technical requirements. It will also prevent a disagreement should it be determined that sufficient financial responsibility has not been demonstrated.

Lessors and lessees of existing USTs may wish to continue using the tanks to store petroleum. They may upgrade the existing USTs to comply with the EPA regulations no later than December 22, 1998. One alternative to the lessors and lessees of existing USTs is sharing the burden of upgrading the USTs to meet technical compliance requirements. They could then agree that the lessee must maintain the USTs in compliance with the regulations. This is the most equitable method for both the lessor and lessee in meeting these requirements. This is true when the requirements did not exist when the USTs were originally installed or when the present lease contract was formed.

A lease provision providing for the upgrade of an existing UST may set forth:

Lessor and lessee each agree to provide one half ($\frac{1}{2}$) of all
costs associated with repairing and upgrading underground storage tanks currently in use on the leased premises, in compliance with all statutes, rules, orders and regulations applicable to the premises. Such repair and upgrade to include any and all modifications to or addition of an interior lining of the tank, cathodic protection of the metal surface of the tank, or a combination of interior lining and cathodic protection. Such repair and upgrade will include any and all installation of cathodic protection of any metal piping that routinely contains petroleum products and is in contact with the ground. Such repair and upgrade will also include any and all installation of spill and overfill prevention equipment and release detection equipment to the existing underground storage tanks.\(^\text{54}\)

Lessors and lessees of USTs should insert several new provisions in the lease contract. The contract should provide for the duties of each party concerning responsibility for maintaining the USTs in compliance with the applicable regulations.\(^\text{55}\) The lessors and lessees should also delegate the duties of reporting and recordkeeping to one of the parties in the lease contract. Reporting and recordkeeping are mandatory and quite specific requirements of the EPA regulations.\(^\text{56}\) The owner/lessor may wish that the opera-

\text{54. The regulations applicable to the repairs and upgrade provisions referenced appear at 40 C.F.R. § 280.21(a)(2), (b)-(d).}

\text{55. The provisions of the regulations providing for maintenance for the life of the USTs appear at: 40 C.F.R. §§ 280.30-.33, Subpart C - General Operating Requirements; 40 C.F.R. §§ 280.40-.43, Subpart D - Release Detection.}

\text{56. The provisions of the regulations applicable to the duties of owners and operators regarding reporting and recordkeeping provide:}

\text{Owners and operators of UST systems must cooperate fully with inspections, monitoring and testing conducted by the implementing agency, as well as requests for document submission, testing, and monitoring by the owner or operator pursuant to section 9005 of the Resource Conservation and Recovery Act, as amended.}

\text{(a) Reporting. Owners and operators must submit the following information to the implementing agency:}

\text{(1) Notification for all UST systems (§ 280.22), which includes certification of installation for new UST systems (§ 280.20(e)),}

\text{(2) Reports of all releases including suspected releases (§ 280.50), spills and overfills (§ 280.53), and confirmed releases (§ 280.61);}

\text{(3) Corrective actions planned or taken including initial abatement measures (§ 280.62), initial site characterization (§ 280.63), free product removal (§ 280.64), investigation of soil and ground-water cleanup (§ 280.65), and corrective action plan (§ 280.66);}

\text{and}

\text{(4) a notification before permanent closure or change-in-service (§}
tor/lessee maintain the USTs and comply with the reporting and recordkeeping requirements of the regulations. This may be in

280.71).

(b) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used (§ 280.20(a)(4); § 280.20(b)(3)).
(2) Documentation of operation of corrosion protection equipment (§ 280.31);
(3) Documentation of UST system repairs (§ 280.33(f));
(4) Recent compliance with release detection requirements (§ 280.45); and
(5) Results of the site investigation conducted at permanent closure (§ 280.74).

(c) Availability and Maintenance of Records. Owners and operators must keep the records required either:

(1) At the UST site and immediately available for inspection by the implementing agency; or
(2) At a readily available alternative site and be provided for inspection to the implementing agency upon request.

(3) In the case of permanent closure records required under § 280.74, owners and operators are also provided with the additional alternative of mailing closure records to the implementing agency if they cannot be kept at the site or an alternative site as indicated above.

40 C.F.R. § 280.34, Reporting and recordkeeping (regarding General Operating Requirements);

All UST system owners and operators must maintain records in accordance with § 280.34 demonstrating compliance with all applicable requirements of this Subpart. These records must include the following:

(a) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for 5 years, or for another reasonable period of time determined by the implementing agency, from the date of installation;

(b) The results of any sampling, testing, or monitoring must be maintained for at least 1 year, or for another reasonable period of time determined by the implementing agency, except that the results of tank tightness testing conducted in accordance with § 280.43(c) must be retained until the next test is conducted; and

(c) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed, or for another reasonable time period determined by the implementing agency. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for 5 years from the date of installation.

40 C.F.R. § 280.45, Release detection recordkeeping.

57. Id.
the best interest of both parties. The operator/lessee has access to the facilities daily. The operator/lessee would be able to maintain all records and prepare all reports at the site of the USTs. The operator/lessee, having possession of the property, would also be better able to "cooperate fully with inspections, monitoring and testing conducted by the implementing agency, as well as requests for document submission, testing and monitoring . . . ." The applicable lease provisions providing for the maintenance of the UST, reporting and recordkeeping may include:

Maintenance -

The lessee shall maintain all underground storage tanks on the premises in compliance with all statutes, rules, orders and regulations applicable to the premises as long as the underground storage tanks are in use on the premises, or until the termination of this lease.

Recordkeeping -

The lessee shall maintain all records required by any statute, order, rule or regulation applicable to the premises and shall keep such records in a safe place at all times on the premises. Such records to be available to the owner of the premises or any agency of the United States Government or the State of North Carolina implementing the requirements that the records be kept.

Reporting -

The lessee shall submit to the applicable state or federal agency all reports required concerning the underground storage tanks on the premises, including reports of any suspected or actual releases; incidents of spills and overfills; corrective actions planned after any releases; initial site characterization; free product removal; investigation of soil and ground-water cleanup; corrective action plan; and a notification before permanent closure or change-in-service.

58. Under the regulations as set forth by the EPA: Owners and operators must keep the records required either:
(1) At the UST site and immediately available for inspection by the implementing agency; or
(2) At a readily available alternative site and be provided to the implementing agency upon request.
40 C.F.R. § 280.34(c).
59. See supra, note 56.
60. See supra, note 46.
61. See supra, note 56.
62. Id.
B. What action must be taken?

The client in this example is the sole owner and operator of a gas station employing USTs for the storage of petroleum. This client is responsible for complying with the applicable regulations. His next important question is, “What do I have to do to stay in business?” Owners and operators of USTs must meet certain mandatory regulations. The requirements concern the upgrading of existing USTs, operation of USTs, and release detection. The regulations also provide requirements for release reporting, investigation, and confirmation; release response and corrective actions; and closure of UST systems.

1. Corrosion protection

a. Exempt USTs

The client should first have the site of the USTs inspected by a corrosion expert. The expert may determine that the site is “not corrosive enough to cause it to have a release due to corrosion during its operating life.” If this is the determination, the owner and operator will not have to upgrade the tank in compliance with the requirements for corrosion protection. The regulations will also not require the connected piping of the UST to be upgraded in compliance with the corrosion protection requirements. If the site of the USTs and piping is found “not to be corrosive”, the

63. 40 C.F.R. § 280.21-.22.
64. 40 C.F.R. § 280.30-.34.
65. 40 C.F.R. § 280.40-.45.
66. 40 C.F.R. § 280.50-.53.
67. 40 C.F.R. § 280.60-.67.
68. 40 C.F.R. § 280.70-74.
69. 40 C.F.R. § 280.20(a)(4)(i), (ii) provides that: the UST does not have to be installed with corrosion protection if:
   (4) the tank is constructed of metal without additional corrosion protection measures provided that:
      (i) the tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and
      (ii) Owners and operators maintain records that demonstrate compliance with the requirements of paragraphs (a)(4)(i) for the remaining life of the tank . . .
70. 40 C.F.R. § 280.31.
72. See supra, notes 68-70.
owner and operator must maintain certain records. The records must demonstrate that the property is not corrosive enough to cause a release for the life of the USTs.

b. Upgrading Existing USTs

If the site is corrosive enough to produce a release sometime during the life of the USTs, the client will first have to upgrade the USTs to prevent corrosion by one of several methods. The client may upgrade the tanks by installing an interior lining in each UST. The interior lining must be installed "in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory." If the client chooses to install an interior lining, he must test or monitor the USTs in one of several ways. The client may perform a tightness test within thirty days following the installation. The client may choose to internally inspect the USTs in accordance with a code of practice developed by a nationally recognized association or an independent laboratory. The client may monitor the USTs monthly for releases. Finally, the client may test the USTs by another method.

74. Id.
75. 40 C.F.R. § 280.21(b)(1)-(3)(ii).
76. 40 C.F.R. § 280.21(b)(1)(i)-(ii).
77. 40 C.F.R. § 280.33(a) provides:
Note: The following codes and standards may be used to comply with paragraph (a) of this section: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; American Petroleum Institute Publication 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines"; American Petroleum Institute Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks"; and National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection."
78. 40 C.F.R. § 280.33(d)-(d)(3).
79. 40 C.F.R. § 280.33(d).
80. 40 C.F.R. § 280.33(d)(1).
81. 40 C.F.R. § 280.43(d)-(h) provides: The repaired UST may be monitored by one of the following: an automatic tank monitor that can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains petroleum product with product inventory control conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis; testing or monitoring for vapors within the soil gas of the excavation zone; groundwater monitoring; interstitial monitoring between the UST system and a secondary bar-
approved by the state agency.  

The client may upgrade the USTs by cathodic protection.  

"Cathodic protection" is defined as:  

a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

Should the client choose cathodic protection, it must be designed by a corrosion expert. All cathodic protection systems "must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground." This provision is important to the owners and operators of USTs. It demonstrates that complying with these regulations is an ongoing part of their business lives. The owner and operator has not completed his work when he brings the existing USTs into compliance with these regulations. This provision and others demonstrate that these systems require constant monitoring and updating for the life of the USTs. The cathodic protection

rier immediately around it; any other method or compilation of methods that can detect a 0.2 gallon per hour leak rate or a release of 150 gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or a method that the owner or operator can prove to be as effective as any of those included above. In determining whether a proposed method of release detection is as effective as one of the other methods above, the implementing state agency will consider the size of the release that the method can detect and the frequency and reliability with which it can be detected.

82. 40 C.F.R. § 280.33(d)(3).
83. 40 C.F.R. § 280.21(b)(2).
84. 40 C.F.R. § 280.12.
85. The regulations define corrosion expert as the following:

Corrosion expert means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

40 C.F.R. § 280.12 "Corrosion expert".

86. 40 C.F.R. § 280.31(a).
must be inspected by a qualified cathodic protection tester\textsuperscript{87} within six months of installation, and at least every three years thereafter.\textsuperscript{88} The cathodic protection expert must use inspection criteria in accordance with a code of practice developed by a nationally recognized association.\textsuperscript{89} The applicable regulation provision provides that the expert may use the National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Buried, Partially Buried, or Submerged Liquid Storage Systems," to comply with the inspection criteria.\textsuperscript{90} The impressed current application mentioned above must be inspected every 60 days to insure proper operation, if it is the method chosen to cathodically protect the UST.\textsuperscript{91}

c. Records Maintenance

The owner and operator must keep complete records of cathodic protection operation.\textsuperscript{92} These records must include the results of the last three inspections, mentioned above, if the protection used is impressed current cathodic protection.\textsuperscript{93} Inspections must be performed every sixty days.\textsuperscript{94} The records must also include the results of the last two of those inspections required at least every three years.\textsuperscript{95} These records must be kept either at the UST site or at a readily available alternative site.\textsuperscript{96}

\textsuperscript{87} 40 C.F.R. § 280.31(b).
\textsuperscript{88} A "cathodic protection tester" is defined as:
a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

\textsuperscript{89} 40 C.F.R. § 280.12 “Cathodic protection tester”.

\textsuperscript{90} 40 C.F.R. § 280.31(b)(1).
\textsuperscript{91} 40 C.F.R. § 280.31(b)(2).
\textsuperscript{92} 40 C.F.R. § 280.31(a)(2).
\textsuperscript{93} 40 C.F.R. § 280.31(a)(2).
\textsuperscript{94} 40 C.F.R. § 280.31(c).
\textsuperscript{95} 40 C.F.R. § 280.31(d).
\textsuperscript{96} 40 C.F.R. § 280.31(d)(1).
\textsuperscript{97} 40 C.F.R. § 280.31(d)(2).
\textsuperscript{98} Id.
\textsuperscript{99} 40 C.F.R. § 280.31(d)(2).
\textsuperscript{91} See supra, notes 56 & 58.
2. Release detection

a. Technical Requirements

After providing corrosion protection for all USTs, the owner and operator must "provide a method, or a combination of methods, of release detection that can detect a release from any portion of the tank and the connected underground piping that routinely contains product."97 The regulations contain specific provisions for UST systems that are used for petroleum storage.98 A client who upgrades the USTs in compliance with the internal lining or cathodic protection requirements,99 the piping upgrading requirements,100 and the spill and overfill requirements101 is given an additional option.102 He may implement a release detection method

97. Under the general requirements for all UST systems:
   (a) Owners and operators of new and existing UST systems must
       provide a method, or combination of methods, of release detection that:
       (1) Can detect a release from any portion of the tank and the connected
           underground piping that routinely contains product;
       (2) Is installed, calibrated, operated, and maintained in accordance
           with the manufacturer's instructions, including routine maintenance and
           service checks for operability or running condition; and
       (3) Meets the performance requirements in § 280.43 or § 280.44, with
           any performance claims and their manner of determination described in
           writing by the equipment manufacturer or installer. In addition, methods
           used after December 22, 1990 except for methods permanently installed
           prior to that date, must be capable of detecting the leak rate or quantity
           specified for that method in § 280.43 (b), (c), and (d) or 280.44 (a) and
           (b) with a probability of detection of 0.95 and a probability of false alarm
           of 0.05.

40 C.F.R. § 280.40(a)(1).
98. 40 C.F.R. § 280.41(a)-(b)(2)(v).
100. 40 C.F.R. § 280.21(c).
101. 40 C.F.R. § 280.21(d).
102. For UST systems that are not yet upgraded, the regulations provide the
     following option:
     (2) UST systems that do not meet the performance standards in §
         280.20 or § 280.21 may use monthly inventory controls (conducted in ac-
         cordance with § 280.43(a) or (b)) and annual tank tightness testing (con-
         ducted in accordance with § 280.43(c)) until December 22, 1998 when the
         tank must be upgraded under § 280.21 or permanently closed under §
         280.71; and
     (3) Tanks with capacity of 550 gallons or less may use weekly tank
         gauging (conducted in accordance with § 280.43(b)).

40 C.F.R. § 280.41(a)(2).
using annual tank tightness testing. This testing must be done in conjunction with monthly inventory control and manual tank gauging. This is the simplest release detection method provided for in the regulations. As a consequence of using this method, however, one of the more stringent methods of release detection must be implemented by December 22, 1998. This aids the owner and operator of USTs. It “buy[s] him some time” before he must comply with the more stringent methods of release detection. This is helpful to a client who is not in a position to afford upgrading all of his existing USTs and installing sufficient release detection devices immediately.

The release detection provisions require that tanks be monitored at least every thirty days. They provide several methods that may be implemented for release detection in petroleum USTs. The client may choose one of these methods for release detection or another method that is at least as effective as the suggested methods. The standards for any other release detection method chosen by the client are strict.

The connected piping of all USTs must also be equipped with a release detection device. Release detection in connected piping differs depending on whether the client has USTs outfitted with pressurized piping or suction piping.

103. Id. This section requires that tank testing must meet the following requirement:

- tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

40 C.F.R. § 280.43(c).

104. 40 C.F.R. § 280.43(a).
105. 40 C.F.R. § 280.43(b).
106. 40 C.F.R. § 280.41(a)-(b)(2)(v).
108. 40 C.F.R. § 280.43(c)-(h).
110. 40 C.F.R. § 280.43(c)-(g).
111. 40 C.F.R. § 280.43(h).
112. Id.
113. 40 C.F.R. § 280.44(a)-(c).
114. Pressurized piping must be equipped with an automatic line leak detector and have an annual line tightness test or have monthly monitoring. 40 C.F.R. § 280.41(b)(1)(i)-(ii).
The release detection provisions require that the owner and operator keep records of the release detection used. This requirement is the same as with the records of corrosion protection. These records must be kept either at the site of the USTs or at a nearby location where they are readily accessible. The release detection records must include several items. They must include all written performance claims. They must also include the results of any sampling or monitoring. Finally, the records must include written documentation of all calibration, mainte-

Suction piping must have a line tightness test every three years or have monthly monitoring. Suction piping does not require release detection if:
(i) The below-grade piping operates at less than atmospheric pressure;
(ii) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage pipe and then drain back into the storage tank if the suction is released;
(iii) Only one check valve is included in each suction line;
(iv) The check valve is located directly below and as close as practical to the suction pump; and
(v) A method is provided that allows compliance with paragraphs (b)(2)(ii)-(iv) of this section to be readily determined.

40 C.F.R. § 280.41(b)(2)-(2)(v).

115. 40 C.F.R. § 280.45(a)-(c).
116. 40 C.F.R. § 280.34(c).
117. Id.

The regulations governing records of release detection provide:
(a) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for 5 years, or for another reasonable period of time determined by the implementing agency, from the date of installation;
(b) the results of any sampling, testing, or monitoring must be maintained for at least 1 year, or for another reasonable period of time determined by the implementing agency, except that the results of tank tightness testing conducted in accordance with 280.43(c) must be retained until the next test is conducted; and
(c) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed, or for another reasonable time period determined by the implementing agency. Any schedule of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for 5 years from the date of installation.

40 C.F.R. § 280.45(a)-(c).

119. 40 C.F.R. § 280.45(a).
120. 40 C.F.R. § 280.45(b).
nance, and repair of release detection equipment permanently located on-site.\textsuperscript{121}

\textit{b. Technical Requirements Compliance Deadlines}

The most immediate concern of the client who stores petroleum in USTs is the timetable provision. This provision governs the timetable that must be followed in installing release detection in USTs.\textsuperscript{122} It is designed to require compliance with release detection installation over the next four years, 1990 - 1993.\textsuperscript{123} The timetable applicable to a particular client depends on the date of on-site UST installation.\textsuperscript{124} If the USTs were installed before 1965, the owner/operator must have installed release detection for all tanks and suction piping by December 22, 1989.\textsuperscript{125} If the USTs were installed before 1965, the owner/operator must install release detection for all pressurized piping by December 22, 1990.\textsuperscript{126} If the actual date of installation of the USTs is unknown, the owner/operator must also have installed release detection for all tanks and suction piping by December 22, 1989.\textsuperscript{127} If the actual date of installation of the USTs is unknown, the owner/operator must have installed release detection for all pressurized piping by December 22, 1990.\textsuperscript{128} If the UST system was installed between 1965 and 1969, the owner/operator must install release detection for tanks, pressurized piping and suction piping by December 22, 1990.\textsuperscript{129} For USTs installed between 1970 and 1974, the owner/operator must install release detection for pressurized piping by December 22, 1990.\textsuperscript{130} The owner/operator must install release detection for tanks and suction piping installed between 1970 and 1974 by December 22, 1991.\textsuperscript{131} The owner/operator of USTs installed between 1975 and 1979 must comply with release detection requirements by December 22, 1990 for pressurized piping.\textsuperscript{132} The owner/operator

\begin{itemize}
\item[121.] 40 C.F.R. § 280.45(c).
\item[122.] 40 C.F.R. § 280.40(c).
\item[123.] Id.
\item[124.] Id.
\item[125.] 40 C.F.R. § 280.40(c).
\item[126.] Id.
\item[127.] Id.
\item[128.] Id.
\item[129.] Id.
\item[130.] Id.
\item[131.] Id.
\item[132.] Id.
\end{itemize}

If the owner and operator of USTs does not bring his USTs into compliance by the required deadline, then he must close the USTs by the same deadline. Closure may be done temporarily. With temporary closure the owner and operator of the USTs does not have to implement release detection if the USTs are emptied. If the USTs remain temporarily closed for more than twelve months, they must be permanently closed. This provision gives owners and operators an additional twelve months to bring the USTs into compliance. However, this time allowance will probably not benefit the owner and operator, because it is unlikely that many owners and operators will be able to take their USTs out of operation for twelve months and remain in business. Permanent closure results if the owner and operator cannot bring the USTs into compliance with these regulations. Permanent closure requires that the owner and operator first notify the implementing agency that the USTs will be permanently closed. The owner and operator must then empty and clean the USTs. Finally, the owner and operator must either remove the USTs from the ground

133. Id.
134. Id.
135. Id.
136. The applicable section directing that such USTs must be closed sets forth:
(d) Any existing UST system that cannot apply a method of release detection that complies with the requirements of this subpart must complete the closure procedures in Subpart G by the date on which release detection is required for that UST system under paragraph (c) of this section.
40 C.F.R. § 280.40(d).
137. 40 C.F.R. § 280.70(a)-(c).
138. 40 C.F.R. § 280.70(a).
139. 40 C.F.R. § 280.70(c).
140. Id.
141. Id.
142. 40 C.F.R. § 280.71(a).
143. 40 C.F.R. § 280.71(b).
or fill them with an inert solid material, such as sand. 144

These provisions are undoubtedly sobering evidence that the regulation of USTs is here today. Clients who own USTs that were installed twenty-five years ago who have not begun to bring the USTs into compliance, are already several months late. 146 These clients must be advised that what they must do to "stay in business" may have to be done in a much shorter period of time than they may have thought. This is a strict requirement for the owners of "mom and pop" gas stations. These owners have been accustomed to running their businesses with minimal regulation for many years. 146 They may have never experienced such complex technical requirements. 147 The provisions requiring them to have been in compliance by the end of 1989 are very burdensome. 148 The technical standards and corrective action requirements were not published as a final rule until September 23, 1988. 149 Fifteen months is a short amount of time. The owners and operators must first find out about the regulations. They must then translate the regulations into language they can understand. Finally, they must determine how they will comply with the regulations. A fair and equitable extension would be to allow those owners with USTs installed before 1965 to have one year to comply. But, whether there is an extension or not, these regulations are here and must be complied with in a relatively short time by all. Even the most fortunate, with the most recently installed USTs, have but four years to bring their UST systems into compliance. 150

FINANCIAL RESPONSIBILITY

A. The North Carolina Commercial Fund

The EPA requires UST owners and operators to

... demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks .... 151

144. 40 C.F.R. § 280.71(c).
145. 40 C.F.R. § 280.40(c).
146. See supra, note 16.
147. Id.
148. See supra, note 125.
149. See supra, note 8.
150. See supra, note 122.
151. 40 C.F.R. § 280.93(a).
The North Carolina legislature enacted the North Carolina UST law in response to the EPA financial responsibility requirements for corrective action and compensating third parties.\(^\text{152}\) One purpose of this law is to provide a "pool of state funds available for clean-up costs and for claims by third parties for personal and property damage caused by leaking tanks."\(^\text{153}\) This aids the owners and operators of USTs in obtaining funds for cleanup and third party claims.\(^\text{154}\) These owners and operators have found it almost impossible to obtain insurance coverage in the required amounts.\(^\text{155}\) To comply with the federal financial responsibility regulations, the typical owner and operator of a gas station must demonstrate financial responsibility of at least one million dollars ($1,000,000.00).\(^\text{156}\) The client in this example is required to demonstrate such financial responsibility by October 26, 1990.\(^\text{157}\)

North Carolina has created two funds to cover cleanup costs and third party claims.\(^\text{158}\) The *Commercial leaking petroleum underground storage tank cleanup fund* (Commercial Fund) is the first fund.\(^\text{159}\) The second is the *Noncommercial leaking petroleum underground storage tank cleanup fund* (Noncommercial Fund).\(^\text{160}\) The Department of Natural Resources and Community Development administers both funds.\(^\text{161}\)

A client who uses "commercial underground storage tanks", as defined by the statute, may have access to the Commercial fund.\(^\text{162}\)

152. See supra, note 15.  
153. See supra, note 22.  
154. Id.  
155. Id.  
156. 40 C.F.R. § 280.93(a)-(b).  
157. 40 C.F.R. § 280.91.  
161. See supra, note 22.  
162. N.C. GEN. STAT. § 143-215.94A(2)(Supp. 1989) defines "underground storage tanks" as follows:  
(2) "Commercial underground storage tank" means any one or combination of tanks (including underground pipes connected thereto) used to contain an accumulation of petroleum products, the volume of which (including the volume of the underground pipes connected thereto) is ten percent (10%) or more beneath the surface of the ground. The term "commercial underground storage tank" does not include any:  
a. Farm or residential underground storage tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;  
b. Underground storage tank of 1,100 gallons or less capacity used for
The Commercial Fund provides the funds required for the "cleanup of environmental damage as required by G.S. 143-215.94E(a) in excess of fifty thousand dollars ($50,000.00) per occurrence." The Commercial Fund provides the funds up to "an aggregate maximum of one million dollars ($1,000,000.00) per occurrence resulting from a discharge or release of a petroleum product from a commercial underground storage tank." The client here is now required to demonstrate financial responsibility for environmental cleanup only in the amount of fifty thousand dollars ($50,000.00). With respect to third party claims, the Commercial Fund provides the funds required for "[c]ompensation to third parties for bodily injury and property damage in excess of one hundred thousand dollars ($100,000.00) per occurrence." The Commercial Fund provides up to "an aggregate maximum of one million dollars ($1,000,000.00) per occurrence [for third party claims], resulting from a discharge or release of a petroleum product from a commercial underground storage tank." Therefore the client must demonstrate financial responsibility for only one hundred thousand dollars ($100,000.00) for compensation to third parties.

Storing heating oil for consumptive use on the premises where stored; c. Underground storage tank of more than 1,100 gallon capacity used for storing heating oil for consumptive use on the premises where stored by four or fewer households; d. Septic tank; e. Pipeline facility (including gathering lines) regulated under: 1. The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. § 1671 et seq.); 2. The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. § 2001 et seq.); or 3. Any intrastate pipeline facility regulated under State laws comparable to the provisions of the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979; f. Surface impoundment, pit, pond, or lagoon; g. Storm water or waste water collection system; h. Flow-through process tank; i. Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or j. 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.

167. See supra, note 164.
parties.168

The Commercial Fund should ease the problem of obtaining adequate insurance coverage for releases from petroleum USTs. The owners and operators must now only acquire coverage in amounts of five percent (5%) and ten percent (10%) of what was previously required.169 This should allow owners and operators of petroleum USTs to better find and afford adequate coverage.

However, if the client is still unable to obtain adequate insurance coverage, he does have other options of demonstrating financial responsibility.170 The client is allowed to establish financial responsibility by "either insurance, guarantee, surety bond, letter of credit, qualification as a self-insurer, or any combination thereof."171 There is also a separate provision in the statutes authorizing and providing guidelines for "insurance pools."172 These options may have been even more out of reach than insurance coverage under the regulations requiring financial responsibility of one million dollars ($1,000,000.00) for the client.173 However, the lower thresholds of financial responsibility now required in North Carolina may allow the client to take advantage of these other methods.174 Thus, the client now has other options instead of the sole option of maintaining adequate insurance coverage.175

B. What must the client do to participate in the Commercial Fund?

Owners and operators of commercial USTs must register all USTs and pay an annual fee for each UST in operation.176 These annual fees will aid in financing the North Carolina Commercial Fund.177 The Commercial Fund is financed through either the General Assembly or grants.178 Other monies paid or recovered on behalf of the Commercial Fund will also be used to finance the

168. See supra, note 165.
169. See supra, note 156.
171. Id.
173. See supra, note 156.
175. See supra, notes 170-72.
178. Id.
North Carolina Commercial Fund. The client must pay an annual fee for each UST. The annual fee for USTs of 3,500 gallons or less capacity is forty-five dollars ($45.00). The annual fee for tanks of more than 3,500 gallon capacity is seventy-five dollars ($75.00). If a client does not pay the annual fees he is solely responsible for all cleanup costs and third party claims. Owners and operators not paying the annual fees will not receive aid from the Commercial Fund.

The annual fees may be suspended, however. The Legislature provided that if the Commercial Fund, on July 1 of any year, exceeds fifteen million dollars ($15,000,000.00), the requirement of owners and operators to pay the annual fees may be suspended for any year thereafter. The suspension may last until the Commercial Fund balance is five million dollars ($5,000,000.00) or less. When the balance of the Commercial Fund is five million dollars ($5,000,000.00) or less, the annual fee requirements will be reinstated.

C. Benefits of the Commercial Fund

The creation of the Commercial Fund should ease the burden on the owners and operators of USTs. The owners and opera-

179. Id.
183. N.C. GEN. STAT. § 143-215.94E(g)(Supp. 1989) provides:
   (g) No owner or operator shall be reimbursed pursuant to this section, and the Department shall seek reimbursement of the appropriate fund or of the Department for any monies disbursed from the appropriate fund or expended by the Department if:
   (1) The owner or operator has willfully violated any substantive law, rule, or regulation applicable to underground storage tanks and intended to
      prevent discharges or releases or to facilitate the early detection of discharges or releases;
   (2) The discharge or release is the result of the owner’s or operator’s willful or wanton misconduct; or
   (3) The owner or operator has failed to pay any annual tank operating fee due pursuant to G.S. 143-215.94C.
184. Id.
186. Id.
187. Id.
188. Id.
189. See supra, note 165.
tors, are benefitted in not having to individually demonstrate one million dollars (\$1,000,000.00) in financial responsibility.\textsuperscript{190} Members of the public who do not own or operate USTs are also benefitted since they are now guaranteed protection from the hazards of leaking USTs.

Leaking USTs can have serious consequences.\textsuperscript{191} If petroleum leaks from an UST, it may contaminate the surrounding soil, water and air of the environment.\textsuperscript{192} Petroleum is also dangerous in that it or its vapors may "accumulate in nearby confined spaces, such as septic tanks, sewers, and the basements of homes."\textsuperscript{193} Petroleum vapors are poisonous and may cause a fire or explosion.\textsuperscript{194} Any of these results of a leaking UST can cause great property damage and personal injury. The costs of the property damage and personal injury could easily be beyond the financial means of the owner of the typical "mom and pop" gas station. By creating the Commercial Fund and lowering the financial responsibility requirements, North Carolina has served two important purposes. The public is benefitted by receiving guaranteed protection from leaking USTs. The owners and operators of the USTs are benefitted in that they may now be able to meet this lower threshold and therefore stay in business.

\textbf{CONCLUSION}

The actions of the EPA and the State of North Carolina over the last two years have greatly affected the lives of the people who own and use USTs. The regulations are both beneficial and burdensome. The public is now protected from the hazards of leaking USTs. On the other hand, those who are directly affected by the regulations are burdened heavily and may lose their businesses as a result of the regulations.

The regulations are broad and complex. The owners and operators of USTs will be turning to their attorneys for guidance in regard to these regulations, since they have been subject to relatively little regulation in the past. Attorneys in North Carolina need to become familiar with the requirements of these regulations because they will affect many businesses in North Carolina. The

\begin{thebibliography}{99}
\bibitem{190} See \textit{supra}, text accompanying notes 165-168.
\bibitem{191} See \textit{supra}, note 1, at 2.
\bibitem{192} \textit{Id}.
\bibitem{193} \textit{Id}.
\bibitem{194} \textit{Id}.
\end{thebibliography}
affected businessmen and their attorneys must realize that the regulation of USTs is here to stay.

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