

Leaking Underground Storage Tanks in the U.S.  
with Specific Reference to the Problem of  
Abandoned or Unreported Underground Storage  
Tanks in Bernalillo County, New Mexico

by

Rick Dotson

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## LIST OF ACRONYMS

### Acronym

A/UR UST	Abandoned or Unreported Underground Storage Tank
AEHD	Albuquerque Environmental Health Department
AFD	Albuquerque Fire Department
API	American Petroleum Institute
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	Environmental Protection Agency
FRP	Fiberglass Reinforced Plastic
HSWA	Hazardous and Solid Waste Amendments
LUST	Leaking Underground Storage Tank
NFPA	National Fire Prevention Association
NMEID	New Mexico Environmental Improvement Division
RCRA	Resource Conservation and Reclamation Act
UST	Underground Storage Tank

## 1.0 INTRODUCTION

Albuquerque, located in Bernalillo County (Figure 1) in north-central New Mexico, is the largest municipality in the State. The city was founded in the early 1700's along the banks of the Rio Grande. Expansion progressed eastward to the base of the Sandia Mountains and currently rapid growth is taking place on the west side of the Rio Grande. Today the city covers approximately 91 square miles with close to 420,000 people making Albuquerque and surrounding Bernalillo County their home (Bureau of Census, 1980).

In late May, 1987 I was hired as an Administrative Intern by the Albuquerque Environmental Health Department (AEHD) in the Environmental Services Division, Hazardous Waste and Water Quality Section. The position was to last six months, in which I was to work full time during the Summer months and part-time during the Fall semester. An Administrative Intern is expected to perform a wide range of tasks although my primary responsibility was to locate and document the locations of unreported or abandoned underground storage tanks (UST).

The AEHD has as its mission the responsibility "to serve the citizens of Albuquerque and Bernalillo County through programs designed to prevent disease and disability, promote health, and protect the environment" (AEHD, 1986). Additionally the department is responsible for providing the citizens of Albuquerque, with an environment that will:

1. confer optimal health on its inhabitants,

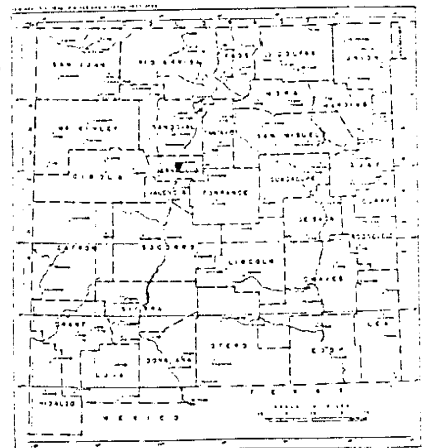
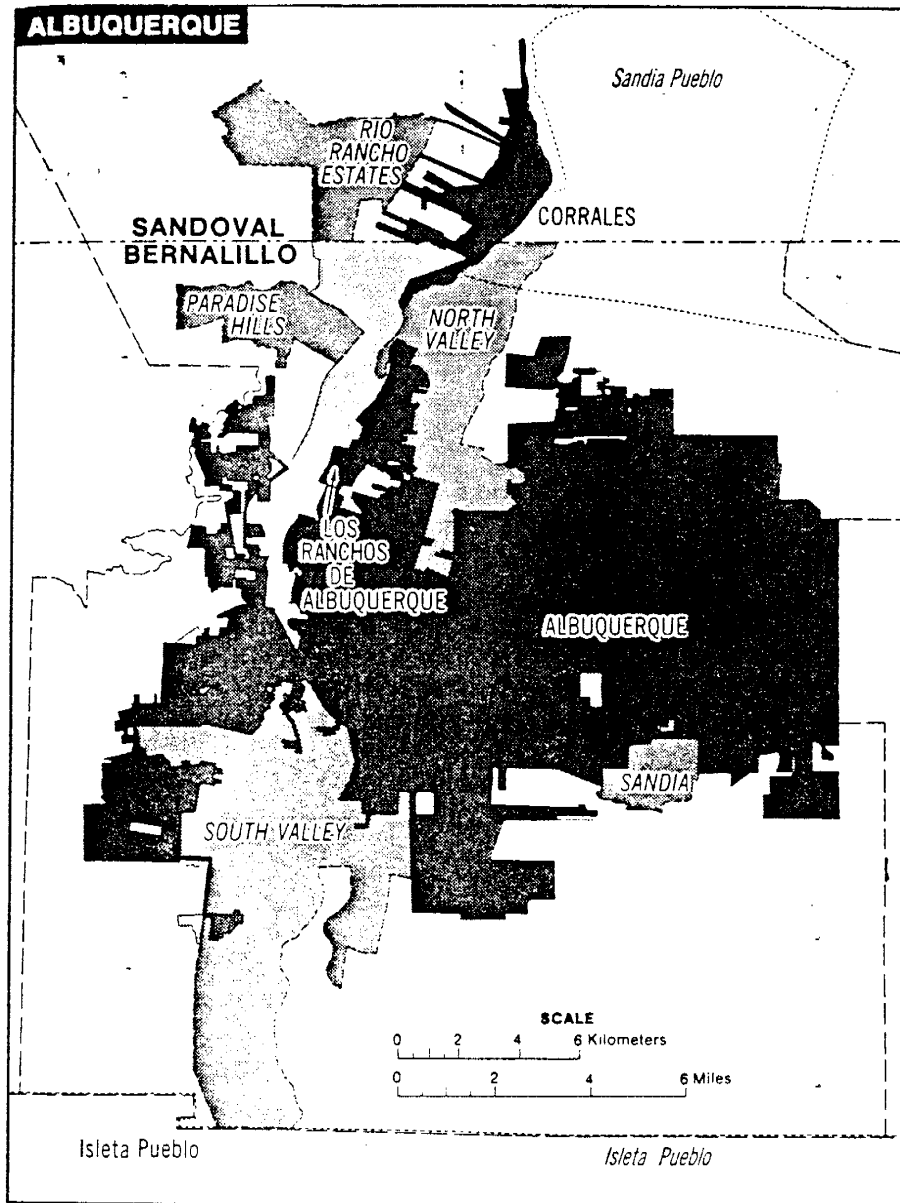


Figure 1 Location of study area; base map from N.M. Bureau of Mines and Mineral Resources Hydrologic Report no. 7; Albuquerque map from Bureau of Census, 1980.

2. protect this and future generations, from health threats posed by the environment, and
3. maximize the economic and cultural benefits of a healthy people (Program Guide 1985-86, City of Albuquerque, Environmental Health and Energy Department).

The organization of the Department is outlined in Figure 2 with the Director reporting directly to the Chief Administrative Officer and he to the Mayor. Four divisions within the department are directly responsible for providing environmental protection services. They are (1) Air Pollution Control, (2) Animal Control, (3) Consumer Protection, and (4) Environmental Services. The Air Pollution Control Division has the responsibility of regulating air pollution sources in Albuquerque and Bernalillo County. Animal Control protects animals from neglect and abuse. It also protects the citizens from annoyance, injury, and property damage resulting from stray or vicious animals. The division sponsors adoption and sterilization programs and responds to complaints of animal bites, barking dogs, and other complaints. The Consumer Protection Division offers citizen protection in the areas of food protection, noise abatement, food facility construction plan review, swimming pool and spa inspection, and wasted water enforcement. The Environmental Services Division is responsible for protecting the public from disease, nuisance, and economic loss through programs in insect control, plague surveillance and control, hazardous waste management, and water quality monitoring.

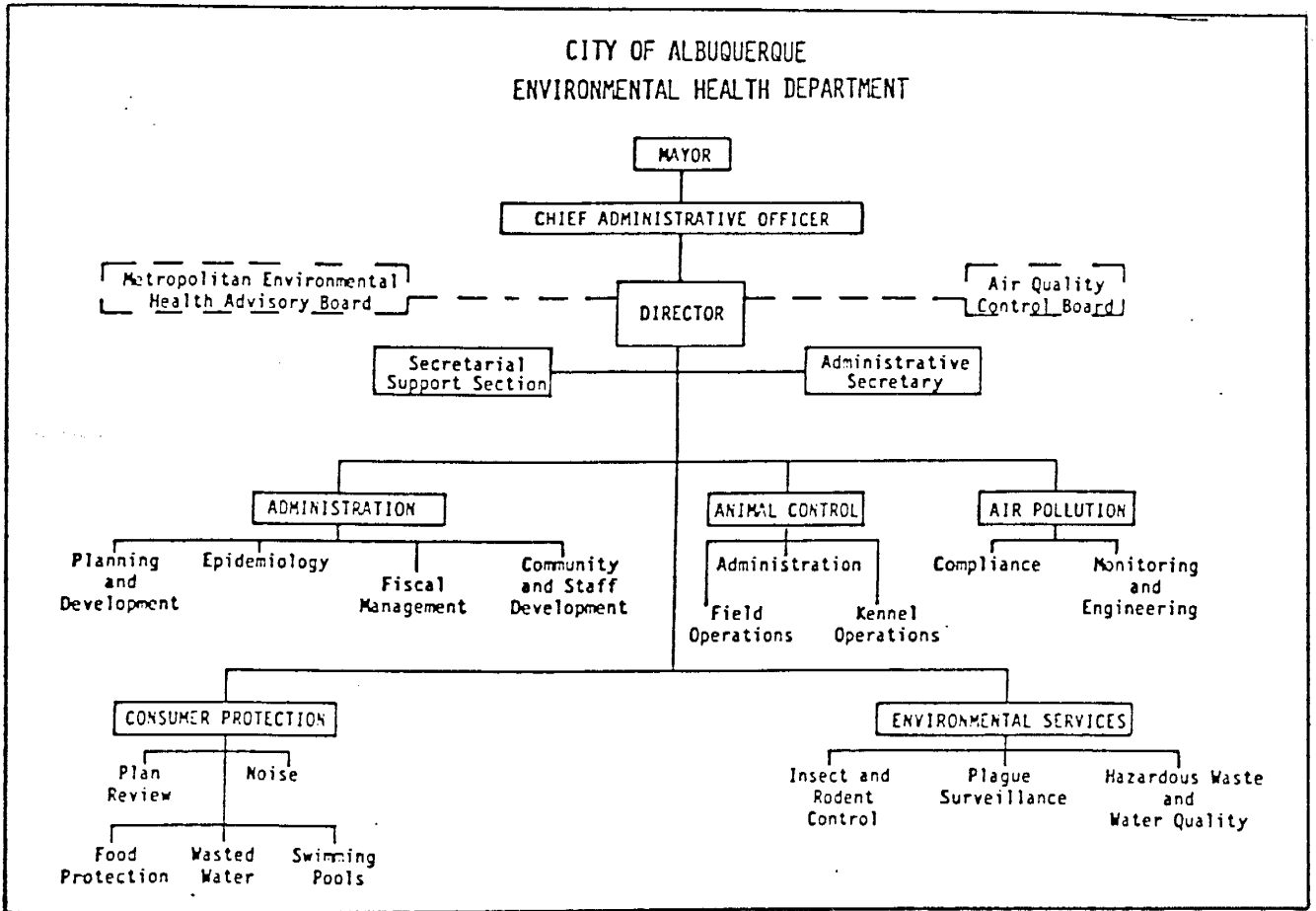


Figure 2 City of Albuquerque Environmental Health Department organizational outline; from AEHD Program Guide, 1985-86.

It was an innovative program at the Mexico Institute of Mining and Technology in Environmental Geology that allowed me to participate in the Internship program. The program, which was started in the fall of 1986 by Drs. David Norman and Philip Kyle, allows students to receive graduate credit for participating in Intern programs.

The report that follows is a description of the leaking underground storage tank (LUST) problem in the United States, in general, and more specifically in Albuquerque, New Mexico. Underground storage tanks (UST) are used to store a wide variety of substances, however, this report will concentrate on the problems associated with the storage of motor fuels. In addition, a description of my duties while employed by the AEHD and my contributions to the Albuquerque UST program will be presented.

## 2.0 BACKGROUND

The public has become increasingly concerned about leaking underground storage tanks, and for good reason. Underground storage tanks are used to store billions of gallons of hazardous chemicals and petroleum products. Frequently, these USTs develop leaks that can contaminate local groundwater aquifers. These aquifers are often used as municipal and/or domestic water sources threatening the health of those who depend upon this water supply. A wide range of chemicals are stored in USTs. Figure 3 is a list compiled by the United States Environmental



Acetaldehyde	Chloropheno. o	Dinitrobenzene, 1-Methyl-2, 4-	hydroxybenzene	Cesium tetroxide	Pyrazolone, 1-Methyl-2 (3-pyridyl)
Acetamide, N-9H-fluoran-2-yl	Chrysene	Dinitrobenzene, 1-Methyl-2, 6-	Hydroxymethylarsine oxide	Oxirane	Silicic or 2,4,5-TP acid
Acetamide, N-(4-ethoxyphenyl)-	Cresylic acid	Dioxane, 1,4-	Iron dextran	Oxysethane, 1,1-	T acid, 2,4,5-
Acetone	Cresylic acid, o	Dioxide, 1,3-oxathiolane, 2,2-	Iocomethane	Oxys(2-chloropropane), 2,2-	TCDD
Acetonitrile	Cresylic acid, p	Epichlorohydrin	Maleic anhydride	Oxys(chloromethane)	Tetrachloroethene, 1,1,2,2-
Acetyl chloride	Crotonaldehyde	Ethanamine, N-Ethyl-N-nitroso-	Mercury, (Aceto-o)phenyl-	Pb	Tetrachloromethane
Acrocin	Cyanogen chloride	Ethanol, 2,2-(nitrosamino)bis	Methanamine, N-Methyl	Pentadiene, 1,3-	Tetraethyl ester pyrophosphoric acid
Acrylonitrile	D Acid, 2,4-	Ethanone, 1 phenyl	Methanol	Phenylazobenzenamine, N-N-dimethyl	Tetraethyl plumbane
Allyl alcohol	Dalapon	Ethanol bromide	Methyl ester isocyanic acid	Phosgene	Thioacetamide
Allylbenzene, 1,2-Methylenedioxy-4-	DDD, 4,4 DDD, TDE	Ethene, trans-1,2 dichloro	Methyl ethyl ketone	Phosphine	Thiocarbamide
Amtriole	DDE	Ethyl chloride	Methyl ethyl ketone peroxide	Phosphorus pentasulfide	Thiophenol
Aniline	DDT	Ethyl ester acetic acid	Methyl isobutyl ketone	Phosphoryl chloride	Thiram
Aroclors	Diazoacetate (ester) L-Serine	Ethyl ester carbamic acid	Methylamine	Phthalate, Di-sec-octyl	Toluenediamine
Arsenic pentoxide	Dibenzanthracene, 1,2,5,6-	Ethyl ester methanesulfonic acid	Methylbenzene	Propanal, 2,3-Epoxy-1-	Tribromomethane
Benzenanthracene, 1,2-	Dibenzene Chloride	Ethylene dichloride	Methylene oxide	Propanamine, 1-	Trichloroethane, 1,1,1-
Benzenediol, 1,3-	Dibenzopyrene, 1,2,7,8	Ethylenediamine tetraacetic acid	Methylethylbenzene, 1	Propanamine, n-propyl-1-	Trichloroethene
Benzofluoranthene, 2,3-	Dibromoethane, 1,2-	Ethylenethiourea	Methylmercaptan	Propanenitrile, 3-chloro	Trichlorofluoromethane
Benzoquinone, p-	Dibromomethane	Ethylenimine	Methylphenol, 2,4-Dinitro-6-	Propane, 2-nitro	Trichloromethane
Benzo[a]pyrene	Dichlorobenzene, 1,2-	Ethylene dichloride	Methylpropanenitrile, 2-hydroxy-2-	Propanoic acid, ethyl ester-2-	Trimethyl Cyclohexenone
Bromomethane	Dichlorobenzene, 1,3-	Fluoranthene	Methylpropane, 1-Amino-2-	Propanol, 2-Methyl-1-	Trinitrate-1,2,3-Propanetriol
Butyl alcohol, n	Dichloroethyl ether	Fluoroacetamide, 2-	Naphthalamine, alpha-	Propargyl alcohol	Vanadium pentoxide
Butyl phthalate, n-	Dichloromethane	Formic acid 90%	Naphthylamine, 2-	Propenamide, 2-	Vinylene chloride
Carbamide, N-ethyl-N-nitroso-	Dicofol	Furfural	Nitrobenzenamine, 4-	Propenenitrile, 2-Methyl-2-	(1,1-Biphenyl)-4,4-diamine
Carbamide, N-Methyl-N-nitroso-	Diepoxybutane, 1,2,3,4-	Furfuran	Nitrogen (II) oxide	Propenoic acid, 2-	
Carbon bisulfide	Diethylhydrazine, 1,2-	Gamma-BHC	Nitrogen (IV) oxide	Propenoic acid, 2-Methylethylethe	
Chlorobenzeneamine, 4-	Disocyanatomethylbenzene, 2,4-	Hexachloroethane, 1,1,1,2,2,2-	Nitrogen (VI) oxide	Propylamine, N-Nitrosod-n-	
Chlorobenzilate	Dimethyl ester sulfuric acid	Hexahydrobenzene	Nitrophenol, 4-	Propylene dichloride	
Chloroethene	Dimethylbenzene	Hydrazine	Nitrophenol, 2-	Propyleneimine, 1,2-	
Chloroethoxyethene, 2-	Dimethylbenzene, m-	Hydrogen chloride	Nitrosoethenamine, N-Methyl-N-	Pyrene, 1,10-(1,2-Phenylene)	
Chloromethane	Dimethylbenzene, o-	Hydrogen cyanide	Nitrosopyridine, Hexahydro-N-	Pyridine, 2-methyl	
Chloromethylbenzene	Dimethylbenzene, p-	Hydrogen fluoride	Nitrosopyrrole, Tetrahydro-N-		
Chloronaphthalene, beta-	Dimethylnitrosamine	Hydrofluoric acid	Octachlorocamphene		

Figure 3 List of chemicals stored in USTs (EPA, 1987).

Protection Agency (EPA) of chemicals frequently stored in USTs in the U.S. Many of these chemicals are known carcinogens or pose other health risks.

The storage of petroleum products, particularly motor fuels, poses significant health and safety concerns. The flammability of gasoline is well-known and is a serious safety concern. Less well-known are the adverse health effects caused by ingesting small amounts of motor fuels such as gasoline. Gasolines are complex mixtures of hundreds of different hydrocarbon compounds (EID,1984). In addition, gasolines may contain over 300 inorganic and organic additives designed to enhance the fuels natural characteristics (EID,1984). Paraffins, olefins, naphthalenes, and aromatics are the four most common chemical series found in gasolines (EID,1984). Aromatics such as benzene, ethylbenzene, toluene, and xylenes are water soluble and thus represent significant threats to drinking water supplies.

Storage tanks were first put underground in the early part of this century. The original rationale behind burying storage tanks was to minimize the fire and explosion hazard associated with the storage of flammable and combustible liquids. Another important benefit obtained by locating tanks underground was the saving of space. A tank buried underground is out of sight and out of the way.

The next several sections will attempt to establish the importance of groundwater in the United States, New Mexico, the Albuquerque/Bernalillo County area, and the urgency needed in

protecting this valuable resource. Also addressed are the problems associated with USTs, technical aspects, and Federal and State legislation designed to correct the problem of USTs.

## 2.1 Groundwater in the United States

As shown in figure 4, groundwater in the U.S. is an important resource. According to a document released by the EPA, A Ground Water Protection Strategy for the Environmental Protection Agency, between 1950 and 1980 groundwater use increased by 162 percent. The EPA further states that over 50 percent of the population relies on groundwater for its drinking water supply and in rural areas the dependence on groundwater is approximately 95 percent. Thirty-four of the Nation's 100 largest cities depend completely or partially on groundwater.

## 2.2 Groundwater in New Mexico

New Mexico, with scant surface water supplies, depends heavily upon groundwater. Hart (1985) estimates that 47 percent of water used in the State is groundwater. However, 89 percent of the total population depends on groundwater for their drinking water supply. The largest user of groundwater in the State is agriculture which accounts for 86 percent of the total. Table 1 outlines groundwater facts for New Mexico. According to the New Mexico Environmental Improvement Division (EID, 1988), total groundwater reserves in the State are estimated to be approximately 20 billion acre-feet. Of this total 3 billion acre-feet (15%) are considered to be freshwater and 1.4 billion acre-feet (7%) are considered to be lightly saline water.

### Estimated Ground Water Use By States

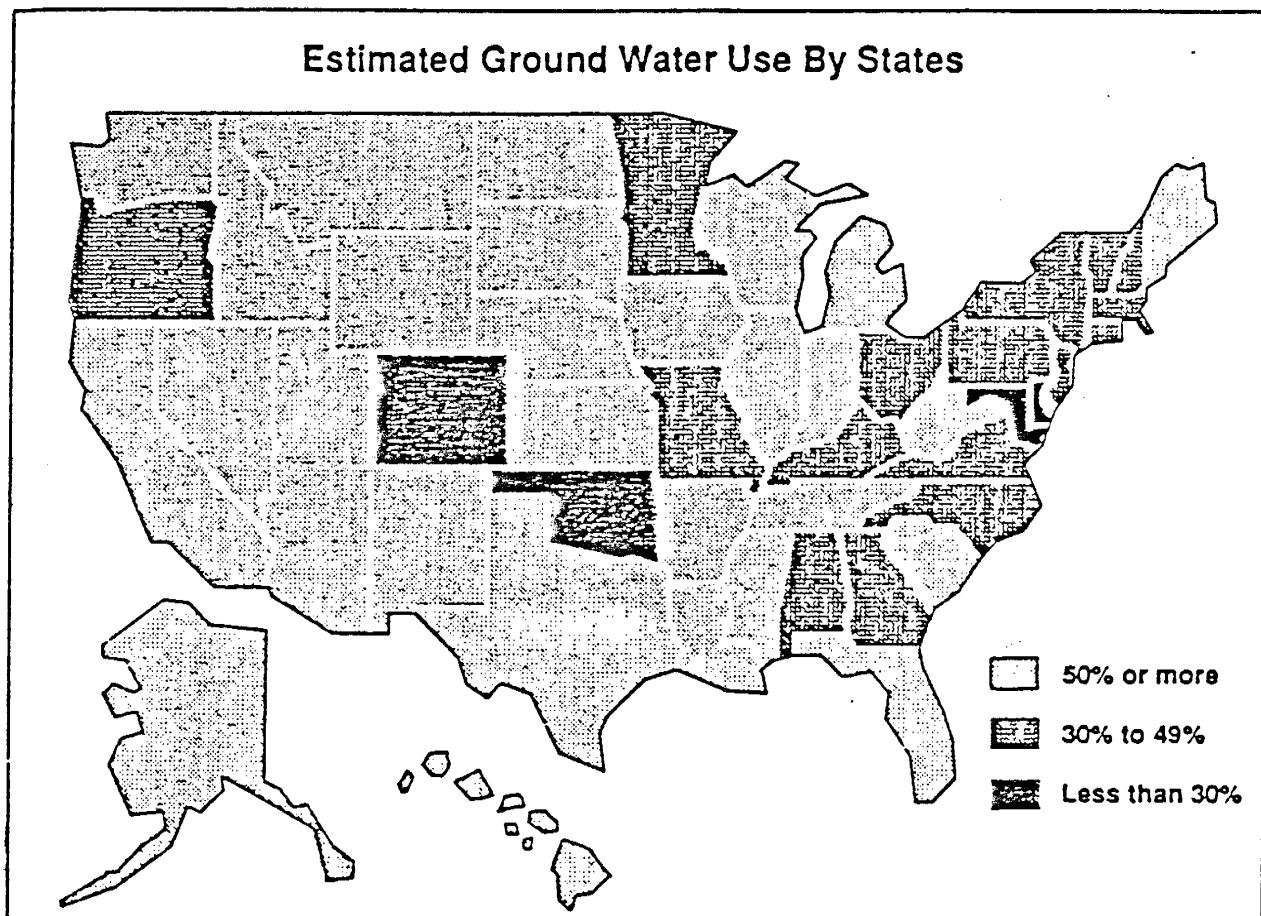


Figure 4 Groundwater use in the United States (EPA, 1987).

Groundwater Use	Groundwater Withdrawal	Percentage of Total Groundwater Used	Percentage of Total Supply (Surface and Groundwater)
Public Water Supply	190 mgal/d	10	90
Rural Water Supply	32 mgal/d	2	97
Livestock	9.6 mgal/d	0.5	50
Industry	18 mgal/d	1	25
Irrigation	1,600 mgal/d	86	44

Table 1 New Mexico groundwater facts for 1980.  
 (Withdrawal data rounded to two significant figures and may not add to totals because of independent rounding. Mgal/d = million gallons per day. Table adapted from New Mexico Environmental Improvement Division, 1988).

## 2.2.1 Groundwater in the Albuquerque/Bernalillo County area

Albuquerque, the largest metropolitan area in New Mexico, is totally dependent upon groundwater for its municipal water supply. The City depends upon 26 well fields containing approximately 85 wells to supply its water needs (Kues, 1986). Well fields are located on both sides of the river with the majority on the east side. Many residents of Bernalillo County outside of the Albuquerque city limits depend upon small private wells for their drinking water. Fortunately for the residents of Albuquerque and Bernalillo County the aquifer underlying the area is extremely productive.

### 2.2.1.1 Hydrogeology of the Albuquerque/Bernalillo County area

Perhaps the most often cited study of the hydrogeology of the area is by Bjorkland and Maxwell (1961). Other relevant studies of the hydrogeology of the area include those by Reeder and others (1967), Kelley (1974), Corps of Engineers (1979), Kelley (1982), Kernodle and Scott (1986), Kues (1986), Anderholm (1987), Peter (1987), Wilkins (1987), and Kernodle and Scott (1988). The geology of the area is described in detail by Kelley and Northrop (1975) and Kelley (1977).

The aquifer utilized by the city of Albuquerque is a small part of the larger Albuquerque/Belen Basin (Figure 5). The Basin itself is approximately 25-40 miles wide and 90 miles long (Kernodle and Scott, 1987). The Albuquerque/Belen Basin is bounded on the east by faults that separate it from the Sandia and Manzano Mountains. The western boundary consists of a series

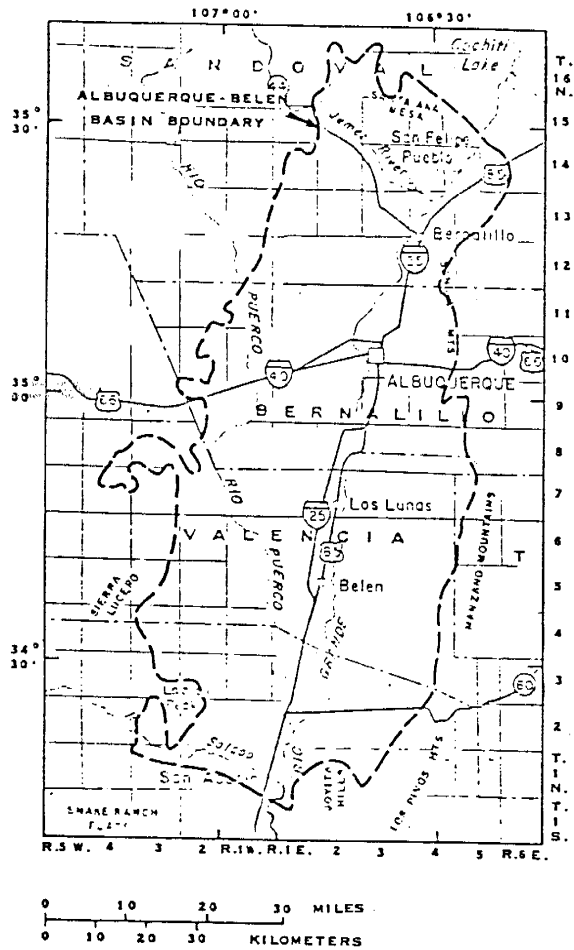


Figure 5 Map of the Albuquerque/Belen Basin (Wilkins, 1987).

of subparallel south to southwest trending faults west of the Rio Puerco. To the south the basin is defined by the San Acacia constriction, a point at which the eastern and western boundaries converge. The northern boundary is more difficult to define and consequently it is frequently debated. Most workers place the northern limit of the Albuquerque/Belen Basin at the southern flank of the Jemez Caldera and the south and southwest flank of Santa Ana Mesa (Kernodle and Scott, 1986). For the purposes of this report the hydrogeology in the vicinity of Albuquerque and Bernalillo County will be emphasized.

The principal aquifer in the area is often referred to as the "basin-fill" which consists of unconsolidated to poorly consolidated sediments of Tertiary to Quaternary age. Older deposits are present in the subsurface and are exposed in the surrounding highlands, where they are often utilized as aquifers, however in the Albuquerque area they are seldom considered aquifers. The basin-fill deposits are generally divided into two geologic units (1) the Santa Fe Group and (2) the Recent alluvium.

Sediments of the Santa Fe Group unconformably overlie older rocks in the area. These sediments were deposited during late Tertiary and Quaternary time (Kernodle and Scott, 1986). Bjorkland and Maxwell (1961) describe the Santa Fe deposits as consisting "of beds of unconsolidated to loosely consolidated sediments and interbedded volcanic rocks. The sediments range from boulders to clay and from well-sorted stream deposits to



unsorted mudflows." Interbedded extrusive volcanic rocks, predominantly of basaltic composition, are also present (Bjorkland and Maxwell, 1961). Santa Fe sediments east of the Rio Grande were derived primarily from Precambrian rocks exposed in the adjacent Sandia and Manzano Mountains. These sediments are coarsest and least well-sorted near the mountains, however, the grain size decreases and sorting improves as one travels west, away from the mountains (Bjorkland and Maxwell, 1961). Sediments west of the Rio Grande were derived primarily from Mesozoic and Paleozoic rocks west of the Rio Puerco (Bjorkland and Maxwell, 1961). These sediments consist of fine-grained sand, silt, and clay (Bjorkland and Maxwell, 1961).

Unconformably overlying the Santa Fe deposits are a series of coalescing alluvial fan deposits of Holocene age. These fan deposits extend westward from the Sandia and Manzano Mountains to the eastern edge of the Rio Grande valley. Almost indistinguishable from the underlying Santa Fe Group, especially near the mountain fronts, these deposits range from poorly-sorted mudflows to well-sorted stream gravel (Bjorkland and Maxwell, 1961).

Recent alluvium underlies the floodplain of the Rio Grande. Much of the material composing this alluvium was derived from the underlying Santa Fe Group (Bjorkland and Maxwell, 1961). Consequently, the alluvium is very similar to the Santa Fe in appearance. The thickness of the alluvium is estimated by Kernodle and Scott (1986) to be between 100 and 200 feet.

Total thickness of the basin-fill deposits in the Albuquerque area varies. Kelley (1982) citing Lambert (1968) states that up to 10,000 feet of sediments may be present in the Albuquerque area. Kernodle and Scott (1987), citing an unpublished geophysical survey by Birch (1980), indicate that the average thickness of the basin-fill deposits, within the Albuquerque/Belen Basin, is approximately 4,900 feet. Figure 6 shows Birch's map of basin-fill thickness.

The Santa Fe Group, together with the alluvial fan deposits and the alluvium, constitute the Albuquerque aquifer. These three deposits are all hydraulically connected. Groundwater exists under unconfined conditions throughout most of the area, however, local confined conditions may exist due to confining clay layers. Virtually all of Albuquerque's municipal wells are completed in the Santa Fe Group sediments, however, many small private wells are completed in the alluvium (Kelley, 1982). Aquifer properties in all of the basin-fill deposits vary widely both laterally and vertically. This is due to the depositional history of the basin resulting in deposits of a very heterogeneous nature. For the most part the hydraulic conductivities of the alluvium and the Santa Fe deposits are high. Anderholm (1987) states that hydraulic conductivity values for the basin-fill deposits range from 0.25 feet per day (ft/d) to 50.0 ft/d, while Kernodle and Scott (1986) cite 20 ft/d as being an average value for the Santa Fe deposits.

Properly constructed wells in the area can expect to yield

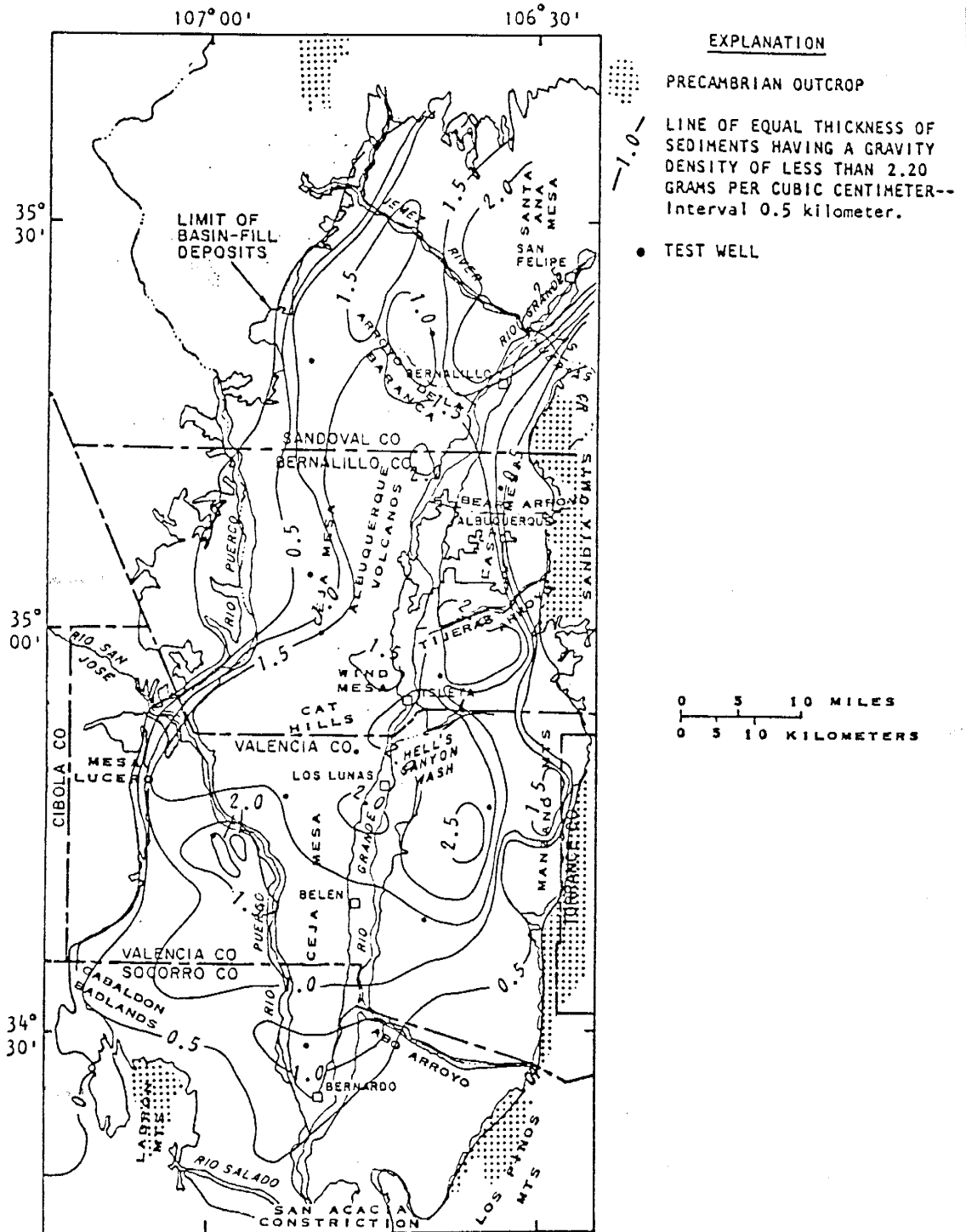


Figure 6 Map of basin-fill sediment thickness having a gravity density of less than 2.20 grams per cubic centimeter (Santa Fe and Quaternary deposits) for the Albuquerque/Belen Basin, New Mexico (Kernodle and Scott, 1986; after Birch, 1980).

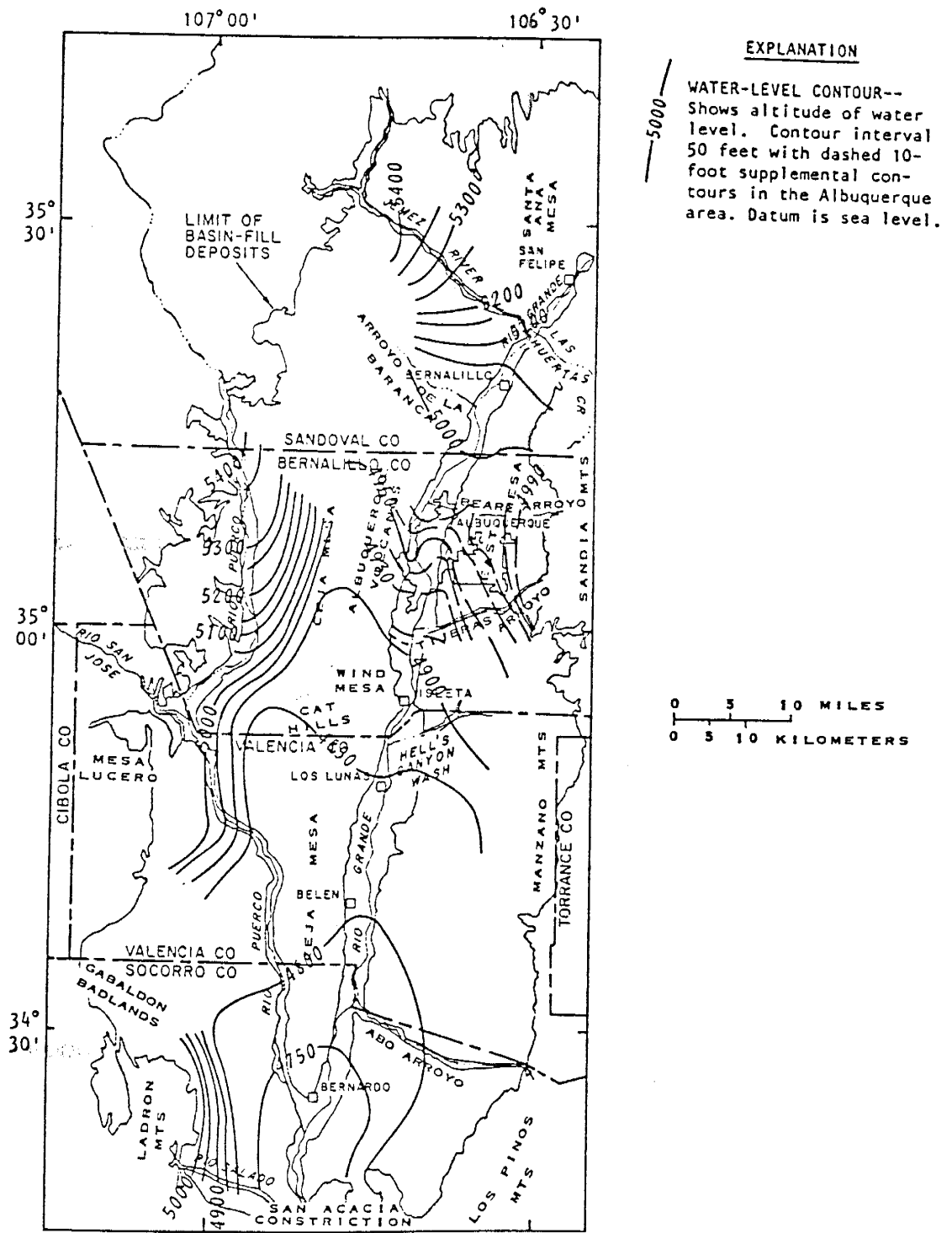
several hundred gallons per minute (gpm) (Bjorkland and Maxwell, 1961). Bjorkland and Maxwell (1961) reported well yields for the area ranging from a low of approximately 20 gpm to a high of approximately 3400 gpm. Overall, it appears that the aquifer is incredibly productive and reliable.

Because groundwater flows perpendicular to lines of equal potential, Figure 7 can be used to infer groundwater flow directions. Groundwater in the area flows in a west to southwest direction from the mountains towards the Rio Grande). Groundwater flow in the valley itself generally follows the Rio Grande, while groundwater flows west-southwest from the Rio Grande towards a "groundwater trough" west of the river (Bjorkland and Maxwell, 1961). Municipal well fields in the Albuquerque area probably cause local irregularities in the watertable surface. Their effects upon the regional groundwater flow system are poorly understood.

Groundwater quality in the basin-fill deposits is generally good, except where affected by point or nonpoint sources of contamination. Water from the Santa Fe deposits is generally of better quality than water derived from the alluvium. Typically water from the alluvium is higher in total dissolved solids (TDS) (Bjorkland and Maxwell, 1961).

#### 2.2.1.1.1 Groundwater Concerns related to LUSTs

Of particular concern are the unconfined conditions of the aquifer and the depth to groundwater in the Albuquerque area. Areas with a shallow watertable are more vulnerable to



**EXPLANATION**

WATER-LEVEL CONTOUR-- Shows altitude of water level. Contour interval 50 feet with dashed 10-foot supplemental contours in the Albuquerque area. Datum is sea level.

5000

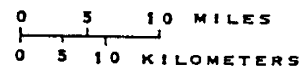
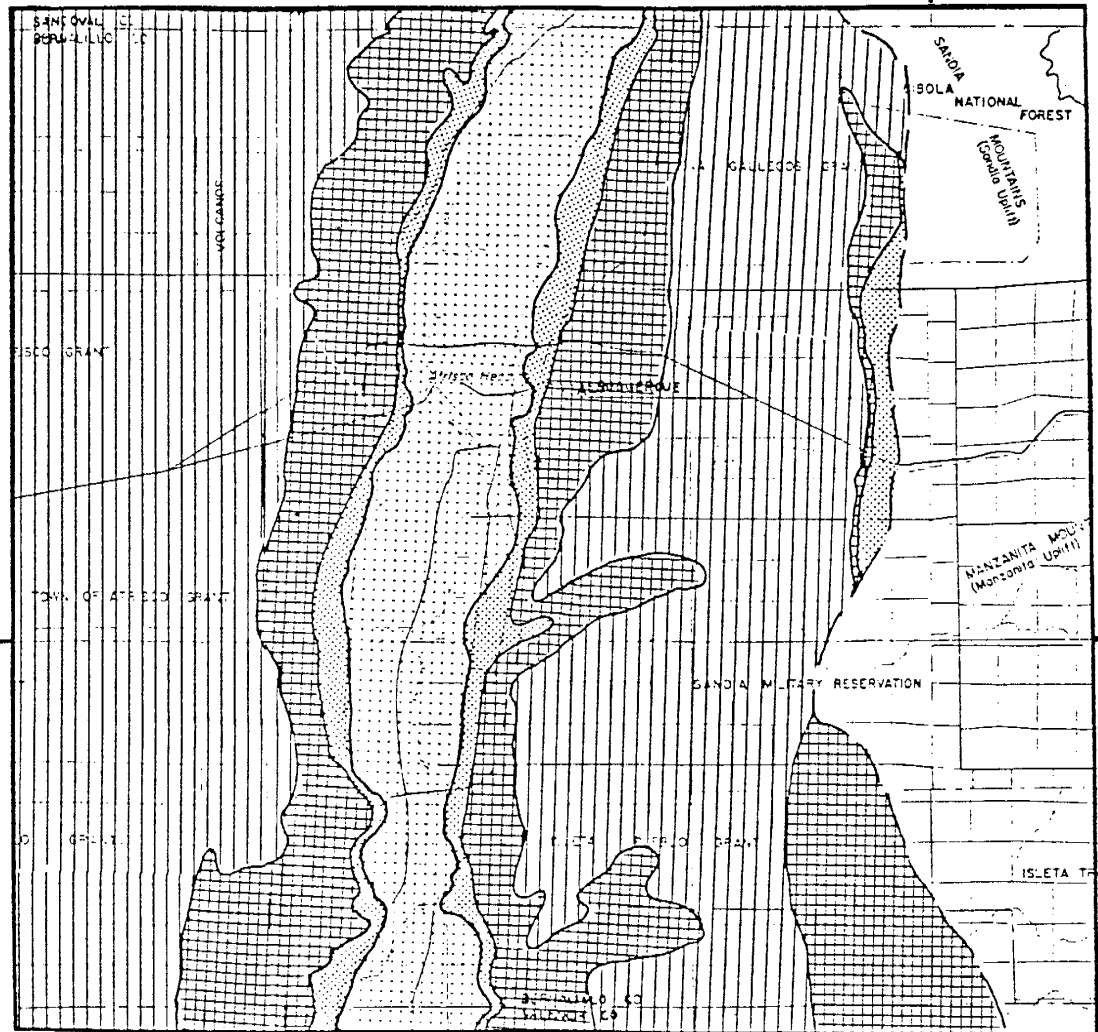








Figure 7 Groundwater contour map for the Albuquerque area (Kernodle and Scott, 1986).



**EXPLANATION**

DEPTH TO WATER, IN FEET BELOW LAND SURFACE

-  0 - 30
-  30 - 100
-  100 - 300
-  300 - 1000
-  DATA NOT AVAILABLE

 BASIN BOUNDARY

0 1 2 3 4 5 MILES  
 0 1 2 3 4 5 KILOMETERS

Figure 8 Depth to water map for the Albuquerque area (Anderholm, 1987).

groundwater contamination from LUSTs. Figure 8 is a map of the depth to groundwater for the Albuquerque area prepared by Anderholm (1987). Areas within the inner valley of the Rio Grande have depths to water of less than 30 feet. In many areas the depth to water is less than 5 feet. Unfortunately, it is within this vulnerable area of shallow watertable that a vast majority of Albuquerque's industries reside. Businesses and industries that utilize USTs in this area typically have USTs constructed of bare steel posing a significant threat to the groundwater. Eastward and westward of the Rio Grande the depth to water increases. Much of eastern Albuquerque has a watertable that is from 300 to 1000 feet below the land surface. In these areas the threat from LUSTs is reduced due to the large unsaturated zone which is capable of effectively trapping the contaminant. It would take an extremely large spill to reach the watertable.

The higher TDS content of water within the floodplain alluvium is a cause of concern. The high concentration of salts increases the potential for corrosion. Older underground storage tanks are typically constructed of non-cathodically protected steel, thus we would expect that the highly corrosive nature of shallow groundwater in the area to significantly lower the life of these tanks.

### **2.3 Underground Storage Tanks in the United States**

The United States Environmental Protection Agency (EPA) has released several estimates of the number of USTs in the United

States. Approximately 3 to 5 million USTs are used to store hazardous substances and petroleum products. Of this total, approximately 0.8 million tanks are used to store motor fuel only (Pollution Engineering, 7/88). Estimates of the number of leaking underground storage tanks (LUSTs) varies from 10 to 30 percent. Using these estimates we can see that anywhere from 300,000 to 0.5 million USTs are currently leaking.

Many states have compiled their own figures on LUSTs. New York State estimates that 19 percent of its 83,000 USTs currently leak (Pollution Engineering, 7/88). New Jersey estimates that 33 percent of its 150,000 USTs are currently leaking (Pollution Engineering, 7/88). The State of Maine estimates that 25 percent of its 10,000 retail gasoline service station UST's leak (Pollution Engineering, 7/88).

The EPA estimates that approximately 1.3 million USTs are used to store petroleum products. This total is divided relatively equally between retail motor fuel establishments and businesses utilizing the petroleum products for their own use. Table 2 summarizes tank usage statistics compiled by the EPA (Federal Register, 1987). The reader should realize that USTs are a ubiquitous element in today's society.

Often overlooked is the problem of abandoned USTs. No one knows the exact number of abandoned tanks in the U.S. today for several reasons. Many gasoline service stations closed during the oil crisis of the 1970's, leaving behind improperly closed



Industries Storing  
Motor Fuels for  
Retail Sales

Industries Storing  
Petroleum Products  
for Their Own Use

Type of Industry	Number of tanks	Type of Industry	Number of tanks
Refiners	164,000	Agriculture	86,000
Jobbers	161,000	Mining	14,000
Convenience Stores	32,000	Construction	42,000
Independent Chains	18,000	Manufacturing	75,000
Open Dealers	281,000	Transportation	58,000
		Communications and Utilities	39,000
		Wholesale and Retail Trade	136,000
		Services	54,000
		Government	
		Military	49,000
		Non-Military	98,000
<b>Total</b>	<b>676,000</b>	<b>Total</b>	<b>651,000</b>

Table 2 Tank number statistics for various industries  
(EPA, 1987).

USTs. Frequently the property is sold and converted to another business and the USTs are soon forgotten. The EPA has identified over 300 incidents of groundwater contamination where the most probable source was abandoned USTs (Federal Register, 1988).

National Fire Prevention Association standards (NFPA 30, 1987) require that a permanently closed tank either be removed from the ground or be filled with an inert material, such as sand or concrete. Unfortunately, these requirements are frequently ignored. Tanks are often abandoned with some quantity of product remaining in them. Given sufficient time the tank may develop a leak and release its contents into the subsurface. Another even more ominous possibility is the use of abandoned or unused USTs as dumping sites for hazardous substances.

The EPA has issued regulations requiring owners to properly close unused USTs. These regulations further demand that the owner conduct a site assessment and certify that no contamination has occurred. These regulations will become extremely important in the next several years because of the anticipated closing of many UST facilities due to strict Federal and State regulations.

### **2.3.1 Underground Storage Tank Construction Materials**

Underground storage tanks are constructed of two principal materials--steel and fiberglass reinforced plastic (FRP). Tanks constructed of steel were the first type to be built and are the dominant type in use today. Until fairly recently most steel tanks were built of bare unprotected steel without any type of corrosion protection. Hundreds of thousands of bare steel tanks

were installed in the 1950's and 1960's. These tanks are now reaching the end of their designed lifetime. Many of these tanks are currently leaking and the others will probably soon follow. Corrosion is the cause of most leaks in bare steel tanks.

With an increased awareness that bare steel tanks corrode easily, manufactures began to develop steel tanks with various mechanisms to protect the tanks from external corrosion. Exterior coatings such as FRP, asphalt, and epoxies were applied to the tanks. Corrosion protection systems were also developed. The two most widely used corrosion protection systems are sacrificial anode systems and impressed current systems. The use of exterior coatings and/or corrosion protection systems has significantly reduced the number of tank failures caused by corrosion. Another important development in steel tank technology has been the use of double-walled tanks with a leak monitoring system between the two walls.

Fiberglass reinforced plastic tanks were first developed in the late 1960's. Their use has shown a steady increase since their introduction. The inherent corrosion resistance of FRP tanks has made them very attractive to liability conscious businesses. Their largest drawback is their structural inferiority compared to steel tanks.

The largest commercially available UST has a capacity of 50,000 gallons, however, tanks of several million gallons have been specially constructed. Most gasoline service stations use tanks of 2000 to 12,000 gallons for the storage of fuels, often a

smaller tank holding 500 gallons is used for waste oil or solvent storage.

### 2.3.2 Underground Storage Tank System Configurations

The configurations of UST systems at retail service stations varies. Most setups will possess the following basic components:

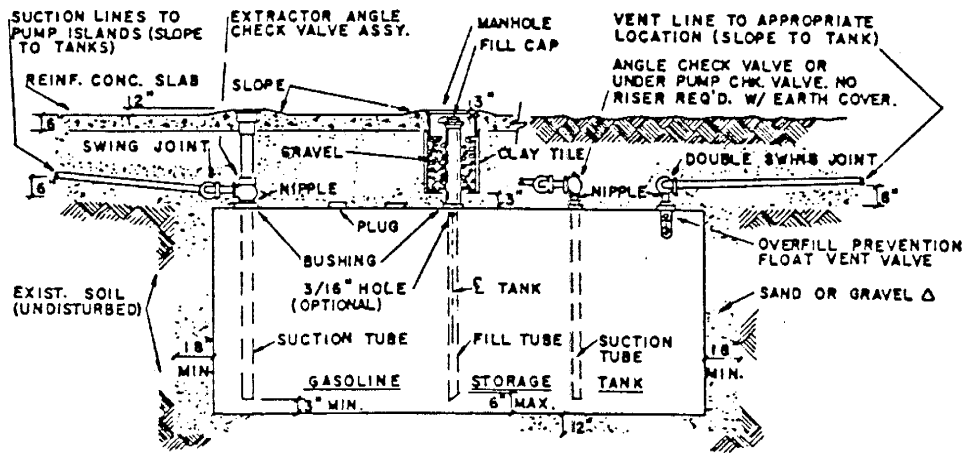
- (1) one or more USTs,
- (2) a piping system,
- (3) product dispensers,
- (4) antifoatation anchorage (if the UST is situated near the watertable),
- (5) corrosion protection system (if the tank is metal; usually not present at older installations), and
- (6) a means of inventory control.

Figure 9 illustrates two common configurations for UST systems in use at gasoline service stations. In years past service stations typically had only two USTs; one tank stored regular gasoline while the second tank stored a premium gasoline. Service stations today offer a wider selection of motor fuels. Leaded, unleaded, unleaded premium, diesel, and various alcohol-blended gasolines are typically offered. Heavily utilized stations may have more than one tank containing a certain type of fuel. Consequently, a station may have upwards of 5 to 7 USTs storing close to 50,000 gallons or more.

### 2.3.3 Causes of Leaks in USTs

Leaks from USTs frequently go unnoticed for long periods of time. A small leak can be difficult to detect by traditional

TANK PIPING DETAILS - SUCTION SYSTEM



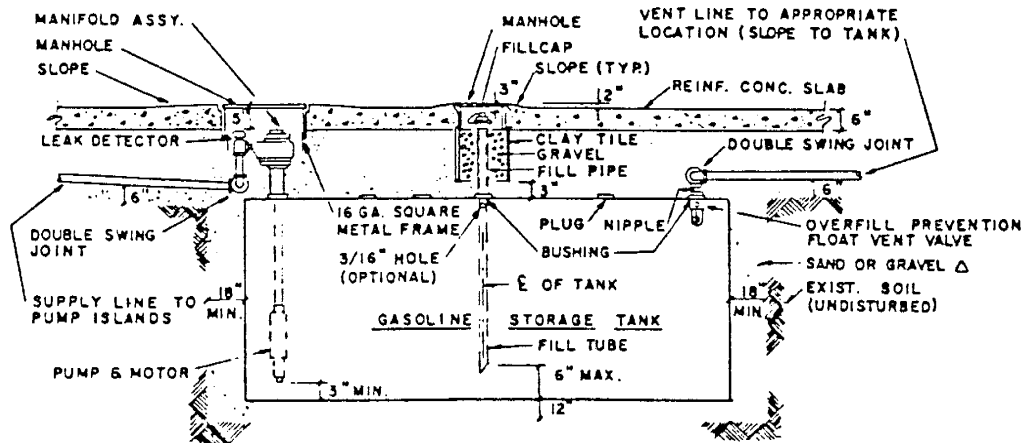
PIPING DETAILS FOR TANKS — UNDER CONCRETE

Δ PEA GRAVEL FOR NON-METALLIC TANKS (OR MFR. APPROVED ALTERNATE)

NO SCALE

NOTE: ELIMINATE CONC. SLAB IN NON-TRAFFIC AREAS & CONSTRUCT CONC. PADS (ONLY) AROUND MANHOLES. THE EXTR. ANGLE CHECK RISER IS NOT REQ'D. W/ EARTH COVER.

TANK PIPING DETAILS - SUBMERGED SYSTEM



PIPING DETAILS FOR TANKS — UNDER CONCRETE

Δ PEA GRAVEL FOR NON-METALLIC TANKS (OR MFR. APPROVED ALTERNATE)

NO SCALE

NOTE: ELIMINATE CONC. SLAB IN NON-TRAFFIC AREAS & CONSTRUCT CONC. PADS (ONLY) AROUND M.H.'S.

Figure 9 Configuration of UST facilities (API,1980).

inventory control methods, such as the dip stick method. However, this small undetected leak can contaminate a large area of the surrounding aquifer. The National Fire Prevention Association (NFPA) uses 0.05 gallons per hour as its leak detection criterium. Five hundredths of a gallon per hour is less than a cup (6.4 fluid ounces), however, that amounts to over 400 gallons in one year. Gasoline can be tasted by some individuals in water at 1 part per million (ppm) (Plehn, 1986). The EPA has testified before Congress that 1 gallon of gasoline per day can pollute the water supply of a community of 50,000 people to a concentration of 100 parts per billion (Plehn, 1986).

A recent study published by the EPA (Federal Register, 1988) states that spills and overfills are the most common causes of stored product releases at UST facilities. Releases due to piping failure occur twice as often as tank releases. When the tank itself leaks, corrosion (external or internal) and improper installation are the most commonly cited causes.

Corrosion is the greatest threat to steel tanks, particularly those constructed of bare steel. The steel tank, the soil, and nearby dissimilar metal objects form a crude battery with the tank being the anode. As current leaves the tank it pulls metal away resulting in a weakening of the steel and eventually causes the tank to leak. Corrosion may attack the entire surface or be localized at a few spots. Localized corrosion usually proceeds vary rapidly while corrosion, in general, is a gradual process taking many years to seriously

affect a tank. The EPA (Federal Register, 1988) has stated that bare steel tanks between 10 and 20 years of age are most vulnerable to corrosion induced leaks. Corrosion can also attack associated steel piping. Of particular concern are those UST systems that utilize a pressurized piping system to deliver the product as opposed to those systems that utilize a suction-type delivery system. A leak developing in a pressurized system forces product out of the piping while the pumping mechanism compensates by delivering more product. The end result can often mean a large release. Tanks installed with a suction-type system are not as prone to have leaks, because the pressure outside of the system is greater than inside and this tends to draw liquids into the system rather than out. Tanks constructed of FRP are inherently corrosion resistant, however, steel fittings connecting piping to the tank are one area that is commonly attacked by corrosion.

Structural failure is a major problem with FRP tanks. To compensate for their inferior structural strength FRP tanks depend upon the backfill to provide their support, making the proper installation of these tanks very important. Structural failure of steel tanks is not unheard of, however, it is a less frequent event. Large rapid leaks are possible when a tank develops a rupture due to structural failure.

There are various installation mistakes that cause USTs to leak. Several of the more common are:

1. Puncturing the tank with installation machinery;

2. Inadequately connected pipe fittings;
3. Improper backfill material (for FRP tanks pea gravel is recommended by industry standards);
4. Inadequate depth of burial;
5. Absence of antifoaming device.

Liquids stored within UST must be compatible with the tank to avoid weakening or destroying the tank. Some resins used for FRP tank construction may lose structural strength when exposed to certain chemicals. Steel tanks are vulnerable to strongly acidic liquids.

#### 2.3.4 Corrective Action at LUST Sites

Once a leaked substance reaches the groundwater it can be extremely difficult to remove to acceptable levels. The extent of contamination depends upon several factors such as the hydrogeologic character of the subsurface material, the type of contaminant, and the characteristics of the spill. Various hydrogeologic factors control the rate of movement of the contaminant. The type of contaminant influences the areal extent of contamination. Light petroleum products, such as gasoline, move more rapidly through soil and aquifer material than heavy oils, such as diesel fuel (API, 1980). Products denser than water will tend to sink to the bottom of the aquifer while products less dense will tend to float. A product's ability to dissolve in water also affects its fate within the aquifer. The nature of the spill influences the areal extent of the contaminant. A large rapid spill will tend to contaminate a



larger area than a more gradual release of product.

Groundwater remediation projects are costly and complex. The average cost of cleanup at a LUST site is around \$70,000 (EPA,1987). If, however, the UST is removed along with treatment of affected surrounding soils the costs quickly can rise to over one million dollars (EPA, 1987). Should a local water supply become contaminated and need remediation, the costs frequently go well beyond \$1,000,000 (EPA, 1987).A large company in the Silicon Valley of California experienced a leak of 58,000 gallons of waste solvents(acetone,trichloroethane, and xylene) from a deteriorated fiberglass UST. Within the first year and one-half over \$12 million was spent on remedial efforts. To date over \$20 million have been spent on remedial efforts (Plehn, 1986).

Determining a responsible party to finance remedial efforts is frequently very difficult. Leaking underground tank sites are often located in areas containing numerous potential contamination sources. Careful investigations are necessary to track down the source or sources of the contamination.

#### **2.4 Underground Storage Tanks in New Mexico**

The New Mexico Environmental Improvement Division (NMEID) estimates that there are approximately 14,000 USTs in New Mexico, with 1000 to 2000 of these in environmentally sensitive areas (NMEID, 1988). If we assume that the probability of an UST to develop a leak in New Mexico is the same as the national failure rate (10 to 30 percent), then approximately 1,400 to 4,200 tanks are currently leaking.

The NMEID states that the "most common cause of petroleum product contamination in the State is LUST." (EID, 1988). Leaking underground storage tanks have been identified by the NMEID (1988) as the cause of 21% of all point sources of groundwater contamination in New Mexico. Over 100 cases of groundwater contamination caused by LUSTs are known by the NMEID (NMEID, 1988). Most leaks of USTs in the state are caused by faulty installation (37.3%), while corrosion of the tank is the cause 33.3% of the time, and corrosion of the associated piping is the cause 29.4% of the time (NMEID, 1988).

#### 2.4.1 Underground Storage Tanks in Albuquerque/Bernalillo County

According to data released by the Albuquerque Environmental Health Department (AEHD), there are approximately 2,400 USTs within the Albuquerque/Bernalillo County area (AEHD, 1987). If we assume that the national leak rate (10 to 30%) is valid for this area, we can see that approximately 240 to 720 of these tanks are currently leaking. Of particular concern are those tanks located within the inner valley of the Rio Grande where the watertable is close to the ground surface (AEHD, 1987). The NMEID conducted a soil gas survey along Isleta Boulevard (Figure 10). Seventeen UST facilities were surveyed and six showed evidence of gasoline contamination (35%). Throughout the Albuquerque/Bernalillo County area over 30 LUST sites have been identified by State and City personnel (Mary Lou Leonard, personal communication).

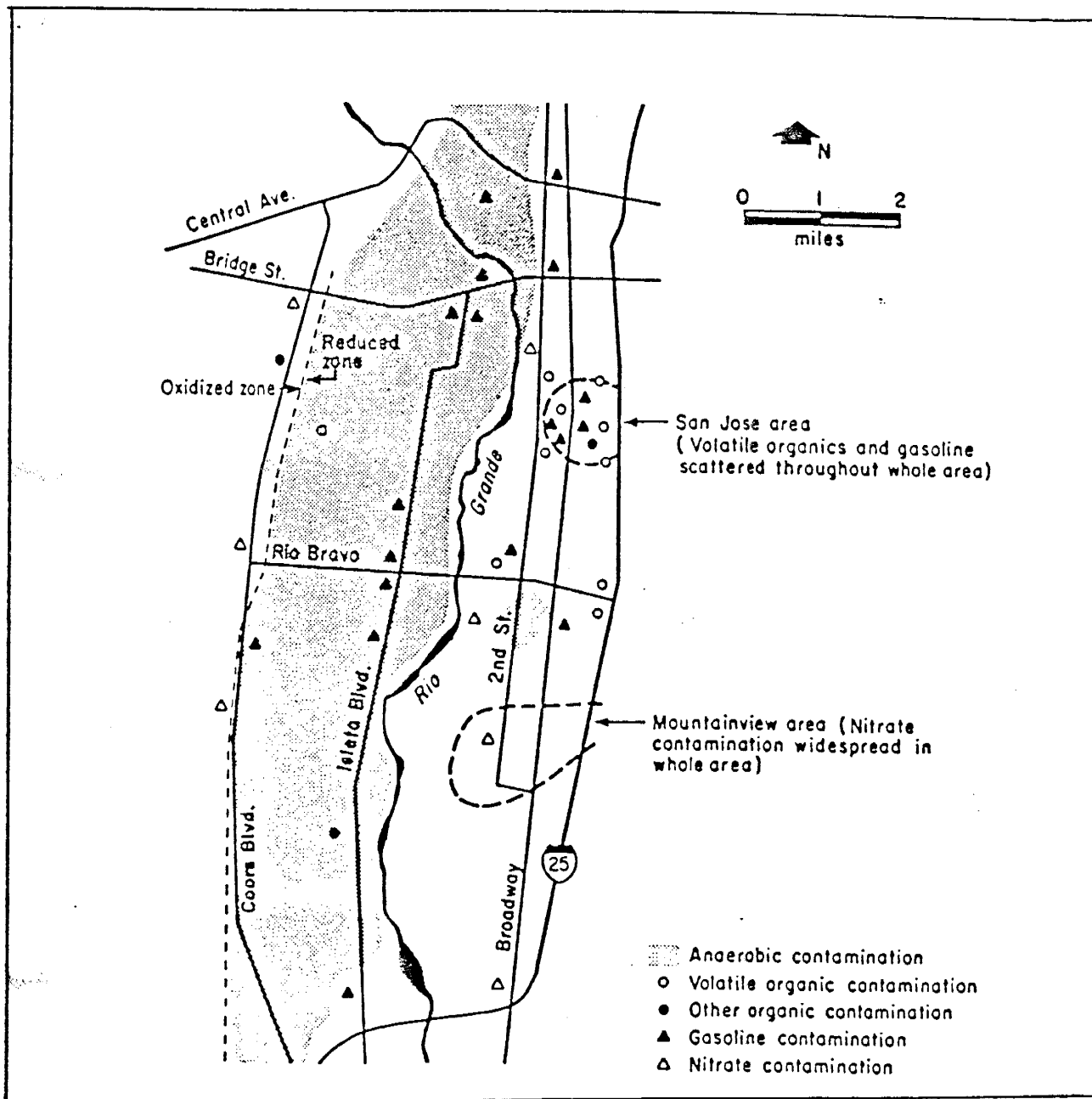


Figure 10 Soil-gas survey taken along Isleta Boulevard (EID, 1988).

The AEHD has released a report entitled Summary of Reported Underground Storage Tank Characteristics in Bernalillo County.

In order to profile the tank population in Bernalillo County, I have relied heavily on this document. Table 3 illustrates the breakdown of actively used tanks. (There were 103 tanks owned by Sandia Laboratories or Kirtland AFB that were excluded from the profile.) It is obvious from the table that steel tanks are used predominantly in Bernalillo County.

Table 3 Tank Construction Materials for the Albuquerque/Bernalillo County area.

<u>Tank Construction</u>	<u>Number of tanks</u>	<u>Percent</u>
Steel	1,772	88
FRP	124	6
Unknown	94	5
Steel with FRP coating	16	0.8

Active steel tanks containing petroleum products are primarily used to store gasoline (69%). Diesel fuel storage represents 19 percent of the total while oil represents 11 percent and kerosene only 1 percent (Figure 11). Figures 12 and 13 illustrate the age and tank volume characteristics, respectively. Note the large range in steel tank ages and tank volumes.

Sixty-five percent of the active FRP tanks are used to store gasoline (Figure 14). The remainder of the tanks are used to store diesel (19%) and oil (15%). Figures 15 and 16 illustrate the age and tank volume characteristics, respectively. Note that

Figure 11

### Products Stored in

Active Steel Tanks

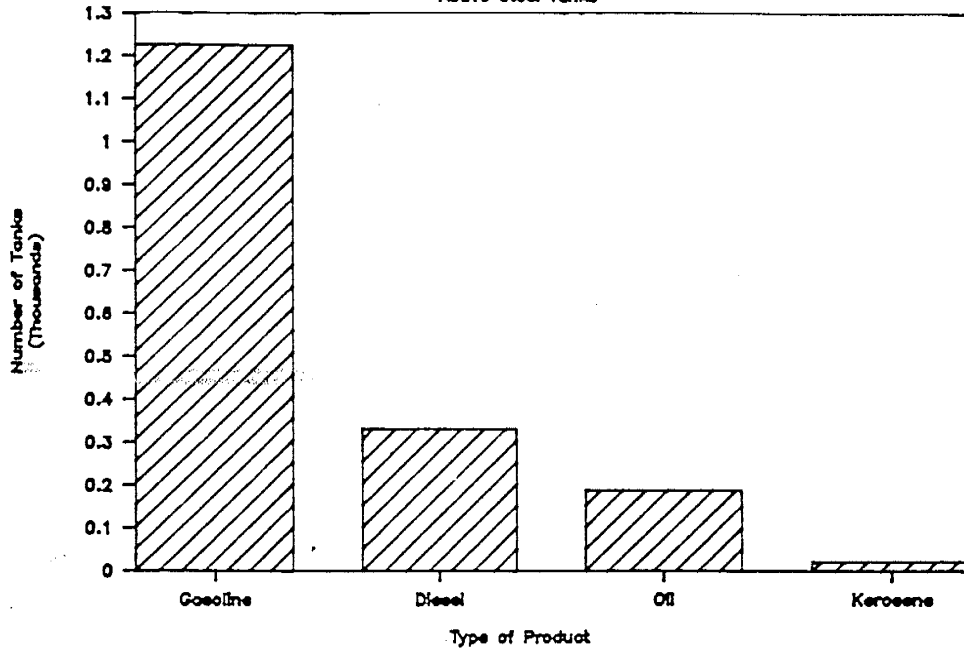


Figure 12

### Age Characteristics of

Active Steel Tanks

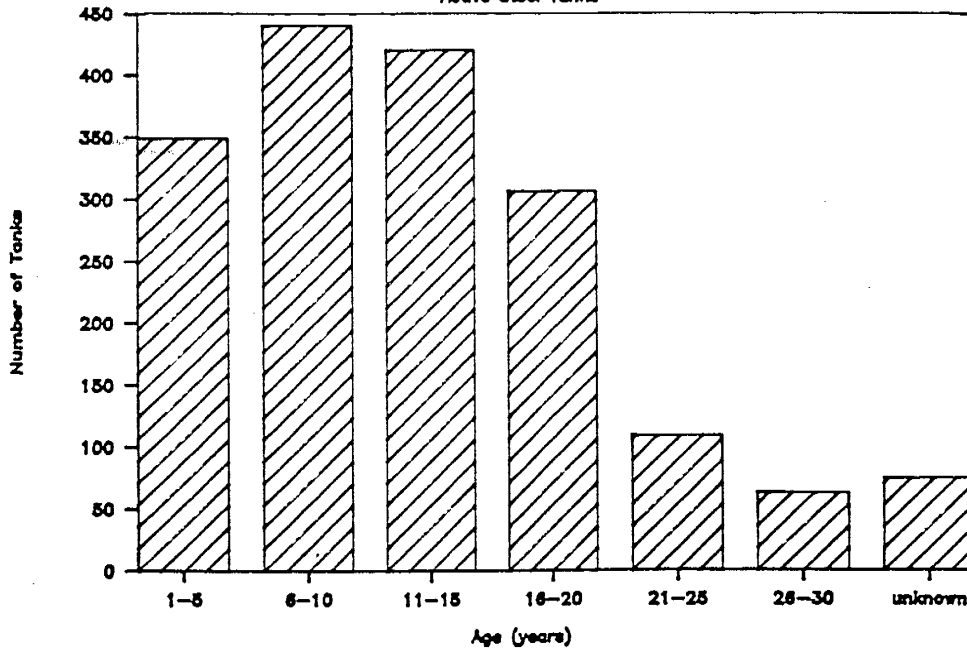
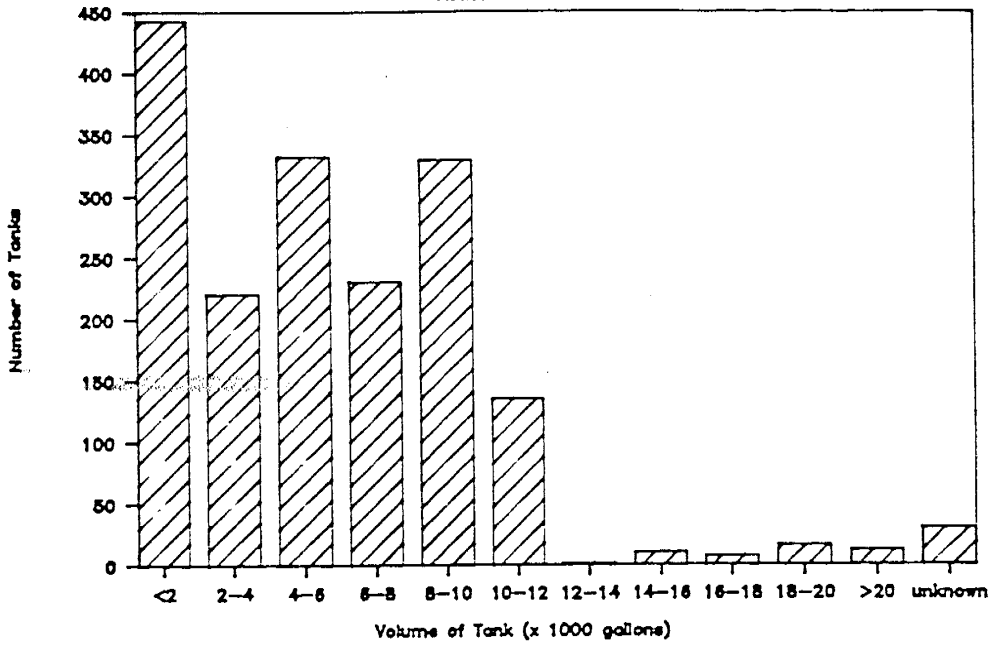


Figure 13

### Volume Characteristics of

Active Steel Tanks



### Products Stored in

Active FRP Tanks

Figures 14

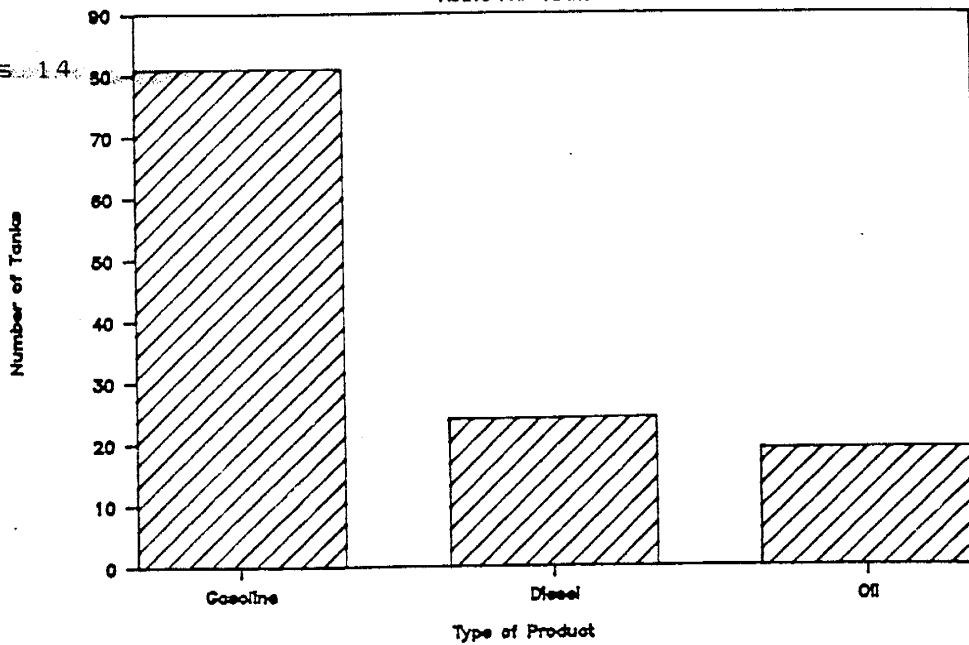


Figure 15

### Age Characteristics of Active FRP Tanks

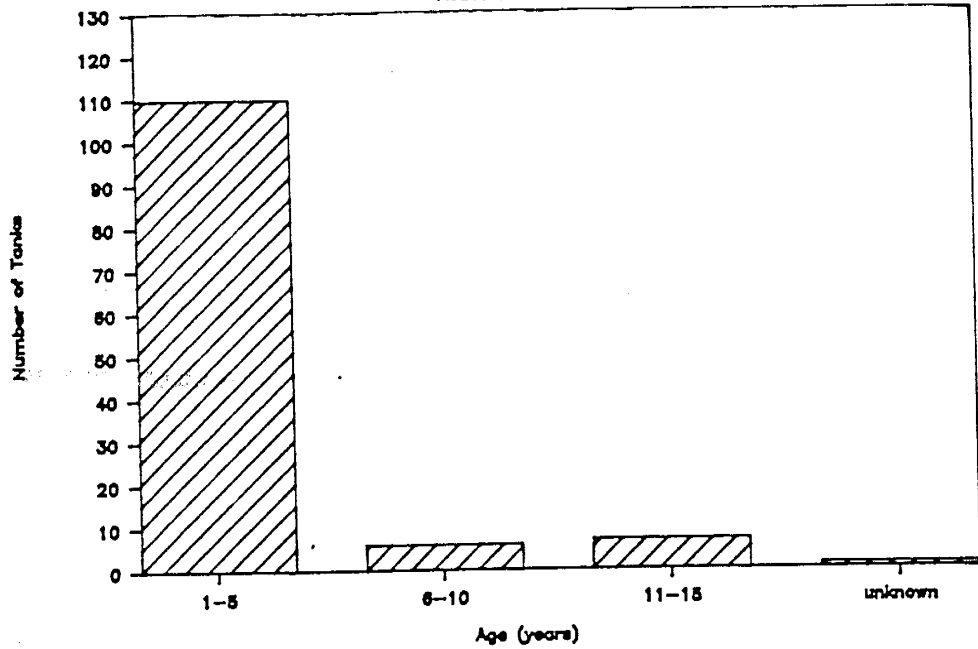


Figure 16

### Volume Characteristics of Active FRP Tanks

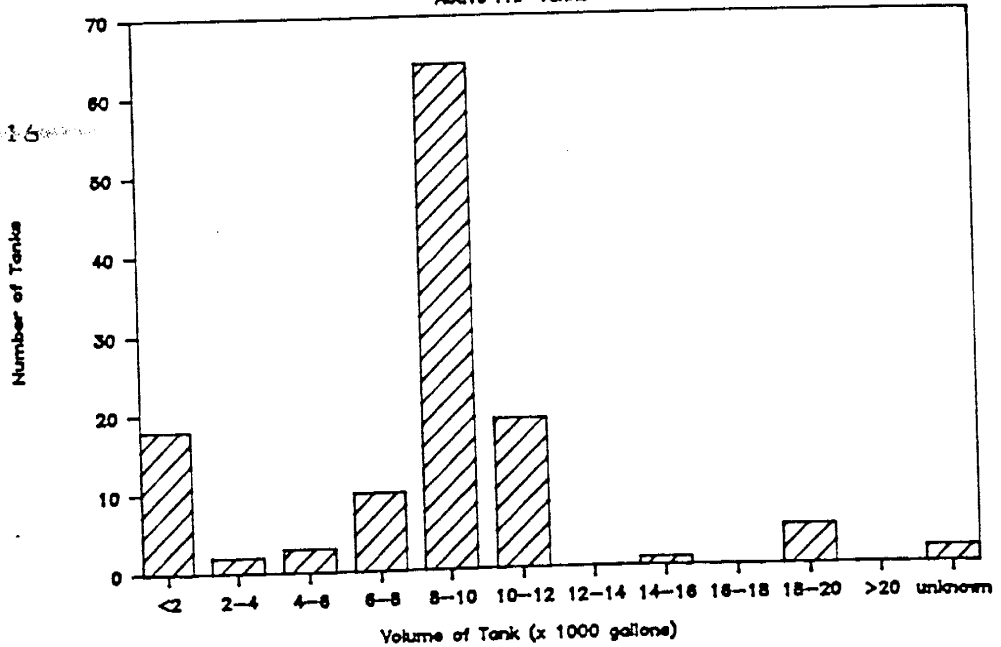
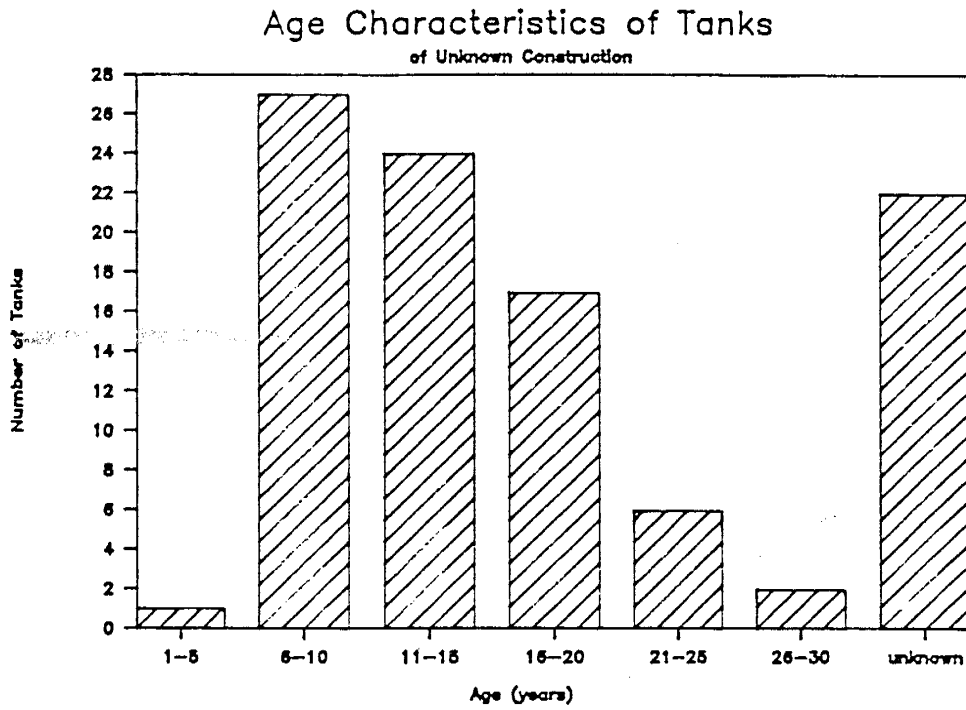


Figure 17





very few of the FRP tanks are older than 5 years. Also note the dominance of larger tank sizes (8,000-12,000 gallons).

Tanks reported as being of unknown construction make up a very small portion of the tank population. Only 94 tanks were reported in this category. As shown in Figure 17, most tanks in this category are between 6 and 20 years old. However, a significant portion (22%) of owners reported an unknown age for their tanks. It is probable that most tanks reported with an unknown construction are, in fact, constructed of bare steel. Data on FRP tank ages for Albuquerque indicate that most FRP tanks are 5 years old or less indicating their relatively recent acceptance into the tank community. As stated above, most tanks reported with an unknown construction material are between 6 and 20 years old, and therefore the probability that these tanks were built of FRP is small. Approximately 12% (284) of tanks were reported as either permanently or temporarily out of use.

Not all USTs in the Albuquerque area are used to store petroleum products. A very small percentage (0.9 %) contain such products as asphalt, acetone, antifreeze, isopropanol, naphtha, and stoddard solvent.

## 2.5 Underground Storage Tank Legislation and Regulations

Hopefully the reader by now has an appreciation of the problems associated with LUSTs. Their ubiquitous presence and the potential to contaminate important water supplies makes the regulation of USTs a vital concern.

There are several problems associated with regulating USTs.

Most important, perhaps, is the extremely large tank population in the Country today. A regulatory program must regulate several million owners of USTs. Another concern is the large number of small businesses owning USTs. Often referred to as "Mom and Pop" enterprises, these owners are not familiar with environmental legislation. Regulations must be easily understandable and relatively simple in order for these owners to comply. Technological developments within the UST industry and other associated industries are proceeding at a rapid rate. A regulatory program should attempt to avoid hindering any future technological innovations. With these concerns in mind, Congress and the EPA have attempted to formulate legislation and regulations that effectively address the problems of LUSTs and the concerns of the regulated community.

#### **2.5.1 Overview of Federal Legislation**

In 1976 Congress created the Resource Conservation and Recovery Act (RCRA), as an amendment to the Solid Waste Disposal Act of 1965. RCRA was created to ensure that solid and hazardous wastes are managed in an environmentally sound manner. Congress, in 1984, amended RCRA with the Hazardous and Solid Waste Amendments (HSWA). These amendments added new requirements to govern the storage of hazardous chemicals and petroleum products in USTs, as well as, new requirements minimizing the land disposal of hazardous wastes. Subtitle I of HSWA provides for the development and implementation of a comprehensive UST regulatory program.

Prior to HSWA, USTs containing hazardous substances, excluding petroleum products, were regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, better known as "Superfund". Subtitle C of RCRA also contained legislation dealing with tank systems, both above and below ground, containing hazardous wastes. Subtitle I of the HSWA is significant because it includes the regulation of stored "products", as well as, wastes.

Traditionally USTs have been regulated, to a certain degree, by local Fire Departments. The primary concern being the storage of flammable and combustible liquids. Products leaking from USTs often migrate into basements, sewer lines or other underground structures and represent a serious fire hazard. Many of the regulations promulgated by the EPA draw heavily from National Fire Prevention Association (NFPA) codes.

#### **2.5.1.1 Subtitle I of RCRA**

An UST, as defined by Subtitle I, is "any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume to the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground." Subtitle I excludes the following types of USTs from its definition:

1. Farm or residential tanks of 1,100 gallons or less;
2. Tanks used for the storage of heating oil;
3. Septic tanks;

4. Pipeline facilities;
5. Surface impoundments;
6. Flow-through process tanks;
7. Liquid traps related to oil and gas production and gathering operations;
8. Storage tanks in underground areas where the tank is situated above the surface of the floor.

A regulated substance, as defined by Subtitle I, consists of petroleum or other substances defined as hazardous under CERCLA, except those hazardous wastes regulated by Subtitle C of RCRA. According to the definition, a storage tank situated above ground may be considered an UST if it has an extensive piping system that contains 10 percent or more of the total volume.

The UST program created by Congress consists of five parts:

1. Notification,
2. Interim prohibition,
3. Regulatory program,
4. Approval of State programs, and
5. Inspection and enforcement.

A copy of the complete RCRA legislation is provided in Appendix A.

The notification program was intended to provide more information on the tank population. Owners of tanks in operation on or after November 8, 1986 were required to provide information, to a designated state agency, on the age, location, and contents of their tanks. Furthermore, owners of USTs taken

out of operation between January 1, 1974 and November 8, 1986 must also notify their State agency if the tanks are still in the ground. The NMEID is the designated State agency for New Mexico. A copy of the notification form used by the NMEID is provided in Appendix B. A maximum penalty of \$10,000 for each tank not reported may be levied by the designated state agency or the EPA.

Congress realized that it would take several years for the EPA to promulgate regulations governing USTs. During this time it was probable that thousands of unprotected steel USTs would be installed. In order to prevent this, Congress established an Interim Prohibition. Effective May 7, 1985 until final regulations on tank installation take effect, the interim prohibition puts a ban on the installation of tanks unless they are protected against corrosion, structural failure and incompatible liquids.

The EPA is responsible for developing and promulgating regulations that specify performance standards for new USTs, as well as regulations covering leak detection, leak prevention, and corrective action for both new and existing tanks. Performance standards for new tanks must include "design, construction, installation, release detection, and compatibility standards" (RCRA). Under HSWA, the EPA must develop regulations for leak detection, leak prevention, and corrective action that require owners to:

1. Have methods for detecting leaks;
2. Maintain records of the methods;

3. Undertake corrective action when leaks occur;
4. Report leaks and any corrective action taken;
5. Properly close unused tanks;
6. Provide evidence of financial responsibility.

These regulations were originally due to be finalized by February 1987, however this was an overly ambitious schedule. In September 1988 the EPA published its final regulations for petroleum product USTs (Federal Register, 1988). A copy of the final regulations is provided in Appendix C, these regulations are due to take effect December 22, 1988.

Because of the large UST population, Congress, in writing HSWA, intended for State and local agencies to assume control of the regulation of USTs. It would be extremely difficult for a federal agency, such as the EPA, to effectively regulate the millions of tanks throughout the country. Many States had UST regulatory programs in effect before HSWA. The new law is designed to avoid interfering with State programs already in existence. However, States must still apply to the EPA for authorization to operate an UST program. A State program must include all regulatory requirements of the Federal program. The law states that after a 1 to 3 year grace period the State program must be "no less stringent" than the Federal requirements. Appendix C contains a copy of the final regulations governing the authorization of State programs.

The final part of Subtitle I deals with the inspection of UST facilities and the enforcement of UST regulations. Under

HSWA, the EPA can obtain information from the owner of an UST facility for three purposes:

1. To support the development of a regulation;
2. To permit the conduct of a study;
3. To enforce the provisions of the LUST statute.

Further, the EPA may require the owner of any tank to:

1. Furnish information on the tank, its associated equipment and its contents;
2. Conduct monitoring or testing;
3. Permit access to all records relating to the tanks.

The EPA or a designated representative, such as a State agency's personal, are authorized to:

1. Enter the property of a tank owner at any reasonable time;
2. Inspect the tank or tanks and take any necessary samples;
3. Conduct monitoring or testing of a tank, its contents, the associated equipment and the soils, air, surface water or groundwater surrounding the tank.

The principal enforcement tool available to the EPA is the issuance of an administrative compliance order. A \$25,000 per day of non-compliance fine may be levied to any owner who fails to comply with the order within "a reasonable specified time period."

## 2.5.2 New Mexico UST Program

As stated in the previous section, the EPA encourages States to develop their own UST legislation and regulations. Federal regulations require that State programs must be "no less stringent" than the Federal program. New Mexico is currently developing a State UST program. Prior to 1986, the only regulations governing USTs in the State were a series of State Fire Codes. These Codes described tank construction, installation, and monitoring procedures, however they were often ignored or poorly enforced.

The newly-created State UST program is controlled within the Environmental Improvement Division of the Health and Environment Department. The Program is responsible for the identification, investigation, remediation, and monitoring of petroleum and hazardous substance leaks which endanger the public's health (EID, 1988). As reported in the Draft Groundwater Protection Strategy (EID, 1988), the UST Program is also responsible for

1. The development and maintenance of regulations and environmentally acceptable minimum standards to achieve prevention of future UST leaks;
2. The fulfillment of all federal grant work plan requirements;
3. The dissemination of regulatory information to the regulated community;
4. The processing of UST notification forms.

In order to defray the administrative costs of the State



inspection and regulation programs the EID must establish tank registration and certification fees.

The Petroleum Storage Cleanup Act of 1988 was created to provide funds for the cleanup of LUST sites. The Act creates a \$10 million fund to be used in reimbursing responsible parties for 50% of the their cleanup expenses for the first \$100,000 and up to \$1,000,000.

### 2.5.3 Albuquerque UST Program

In order to insure that groundwater resources within the Albuquerque area are protected from contamination by leaking underground storage tanks, the Hazardous Waste and Water Quality Section of the AEHD, has established an UST Program. The program addresses existing tanks as well as developing preventive measures for new tanks. The program consists of five main objectives which are:

1. The identification of high risk tank locations by analyzing the UST data submitted to the New Mexico Environmental Improvement Division;
2. Identify locations of abandoned and unreported USTs. Advise owners of their regulatory requirements;
3. Identify and map areas vulnerable to contamination from LUSTs;
4. Provide technical information and educational opportunities for owners, operators, and installers of USTs;
5. Coordinate with other local agencies in developing a

program consistent with and complementing the Environmental Protection Agency (EPA) and NMEID UST program.

### 3.0 CONTRIBUTIONS TO THE ALBUQUERQUE UST PROGRAM BY INTERNS

The AEHD has utilized administrative interns for several years now and will continue to do so in the future. An intern provides the AEHD with a source of inexpensive, competent labor for various special projects. Interns typically have several supervisors and are expected to perform a wide range of tasks.

While I was employed by the AEHD my primary responsibility was the collection and documentation of data on abandoned or unreported USTs (A/UR UST) in the Albuquerque/Bernalillo county area. In addition, I also had several other duties, such as: methane monitoring at the reclaimed Los Angeles Landfill, UST removal inspections, providing information to the public concerning the locations of any abandoned USTs of interest, and any other duties that management requested. In this report I will concentrate on my primary responsibility of A/UR USTs.

#### 3.1 Abandoned or Unreported UST

##### 3.1.1 Previous Work

As required by Section 9002 of the Resource Conservation and Recovery Act, all owners of USTs who possess tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986 must notify a designated State agency. In New

Mexico owners of UST are required to notify the NMEID. A copy of the notification form is provided in Appendix A. In the Fall of 1986 the AEHD obtained all notification forms for Bernalillo County. Approximately 2400 UST were reported for the area.

Management realized that there were many UST in the area that had not been reported for various reasons.

1. Many owners were unaware of their notification requirements;
2. Many owners simply neglected their notification requirements;
3. Many owners were unaware of USTs on their property;
4. UST on abandoned tracts of property were not reported.

Abandoned USTs have been implicated as the cause of groundwater contamination at over 300 locations in the U.S., according to the EPA (Federal Register, 1987). Management within the AEHD believed that A/UR USTs represented a significant threat to the area's groundwater, thus an attempt was initiated to identify the locations of these tanks.

Environmental Services Division staff members began the search for A/UR UST in the Albuquerque/Bernalillo county area during the early months of 1987. Their approach was to conduct "windshield surveys" along the major roadways throughout the area. The term "windshield survey" is used to describe the process whereby several individuals drive down a street noting all locations of abandoned gas stations or other businesses that typically utilize UST. After verifying that the address in

question did not complete a notification form, the location is recorded for further investigation at a later date. Through this process 135 locations were identified as potential A/UR UST sites. Appendix D contains a list of the 135 potential A/UR UST sites identified.

### 3.1.2 Initial Investigative Steps

My first task was to collect as much data as possible on the 135 potential A/UR UST locations identified previously. Specifically, the task was to:

1. Verify the existence or nonexistence of UST at the location in question;
2. Obtain as much information as possible on the nature of the tank or tanks, such as: size, age, number of tanks, in use or out of use, owner, and any other information possible;
3. Verify the data by visual inspections.

The first step taken in completing the task was to again compare the list of potential A/UR UST against all notification forms obtained for the Albuquerque/Bernalillo County area. Several potential A/UR UST locations were eliminated from consideration in this manner. For the remaining list, city directories and phone books were used to obtain proper addresses and phone numbers for the locations. For many locations addresses and phone numbers were unavailable, necessitating a site visit to gather this information.

After obtaining addresses and phone numbers for as many

locations as possible I then contacted, by telephone, the current owner or leaseholder for questioning. If the location was vacant or abandoned a realtor was contacted, if available. If, however, the location was abandoned and no contact person was obvious, the owners were found through City and County tax records. Figure 18 is a modified state notification form that was used as a questionnaire. After contacting several persons, it became obvious that most owners or lessors knew very little about the past history of their property. Often the extent of the owner's knowledge or cooperation was limited to confirming the existence of USTs, confirming that USTs never existed, or stating that all USTs had been removed. Information on the tank's construction, capacity, corrosion protection, age, piping construction, or date last used was often unavailable. Fearing legal actions might be taken against them, many owners were reluctant to freely provide information about USTs on their property. A method was needed to verify information provided by owners and to determine the existence or nonexistence of UST at locations where owners were reluctant to provide information.

### 3.1.3 Verification of Information

Every UST installed has certain essential components (See Section 2.3.3) and several of these can be used to identify A/UR UST sites. Vent pipes, refill caps and manhole covers, and product dispensers are the three most important components used for A/UR UST identification. Figures 19 through 24 illustrate these three important components.

CONCEPT OF DESIGN		LOCATION OF DESIGN				
Client Name (Circle a State or Local Public Agency or other Entity)		If same as Section 1, mark box here <input type="checkbox"/>				
Street Address		Facility Name or Company Site Identifier, as applicable				
County		Street Address of Site Road, as applicable				
City State ZIP Code		County				
Area Code Phone Number		City/Township State ZIP Code				
Type of Owner (Mark all that apply <input type="checkbox"/> )		Indicate number of tanks with <input type="checkbox"/>				
<input type="checkbox"/> Current <input type="checkbox"/> State or Local Govt <input type="checkbox"/> Private or Corporate <input type="checkbox"/> Former <input type="checkbox"/> Federal Govt <input type="checkbox"/> Partnership/Unincorp'd		Mark box here if tanks are being replaced with an identical or different model and materials <input type="checkbox"/>				
Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.	
1 Status of Tank (Mark all that apply <input type="checkbox"/> )						
Currently in Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Temporarily Out of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permanently Out of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brought into Use after 5/8/86	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2 Estimated Age (Years)						
3 Estimated Total Capacity (Gallons)						
4 Material of Construction (Mark one <input type="checkbox"/> )						
Steel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Concrete	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fiberglass Reinforced Plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other: Please Specify _____						
5 External Protection (Mark all that apply <input type="checkbox"/> )						
Cathodic Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Painted (e.g., asphaltic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fiberglass Reinforced Plastic Coated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other: Please Specify _____						
6 Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply <input type="checkbox"/> )						
a. Empty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Petroleum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Diesel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kerosene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gasoline (including auto blends)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Liquid Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other: Please Specify _____						
c. Hazardous Substance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Please indicate name of known CERCLA Substance (or Chemical Abstract Service (CAS) #)						
Mark box <input type="checkbox"/> if tank stores a mixture of substances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7 Additional Information (for tanks permanently taken out of service)						
a. Estimated date last used (mm/yy)						
b. Estimated quantity of substance remaining (oz/l)						
c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Figure 18 Modified notification form used as a questionnaire.



Figure 19 Photograph of UST refill cap cover (pen for scale is approximately 5 inches in length).



Figure 20 Photograph of UST vent pipes. Three larger pipes are vents for standard size USTs(1000-8000 gallons). Smaller pipe is most likely a vent for a smaller (<500 gallons) tank.





Figure 21 Photograph of abandoned gasoline dispenser island. Notice the two UST vent pipes above the billboard. Refill cap covers and a manhole cover are visible near the left rear of the concrete slab.



Figure 22 Photograph of deserted gasoline station. Notice the four vent pipes near the edge of the building and the numerous refill cap covers and manhole covers in the foreground of the picture.





Figure 23 Photograph of a confirmed A/UR UST site. Notice the two refill cap covers near the center of the concrete slab and the product dispenser situated between two vent pipes.

Vent pipes are usually constructed of 1.5 inch diameter steel piping and are typically located on the side or rear of a building, however, many of the older USTs have the vent pipes near the product pumps.

Industry standards require that each UST have its own vent pipe. Consequently, the number of vent pipes corresponds to the number of UST at the location.

Refill caps and manhole covers are located on the surface directly above an UST. Refill caps typically resemble sewage type manhole covers and are approximately 10 to 12 inches in diameter. The refill port will often be raised above the surrounding surface to help prevent ponded water from entering the UST. Manhole covers are large (2x2 feet) metal plates that cover access ports to the UST. Older UST seldom have this feature. Although refill caps and manhole covers are the most difficult component to spot, they are the most important tool for A/UR UST identification. The presence of refill caps or manhole covers confirms the existence of UST at the location.

Product dispensers are the large 'pumps' that everyone associates with gasoline stations. Frequently when a service station abandons its location the product dispensers are left behind.

The above UST components were used to verify the statements made by owners and to locate additional A/UR UST sites. When a service station or other business that uses USTs is closed or converted to another use, the owners will usually have the USTs,

product dispensers, pump islands, and other components of the UST system removed. If the UST system is not removed, however, the presence of vent pipes and especially refill caps and manhole covers indicates the presence of USTs. The presence of vent pipes and/or product dispensers indicates that:

1. The location at one time had USTs, but the USTs were removed and the vents and/or product dispensers were not;
2. The location still has USTs.

The presence or absence of refill caps and manhole covers is the best criterion for determining the presence and location of A/UR USTs. Because refill caps and manhole covers are located directly above the UST, they are always removed when the UST is removed. Vent pipes are thus used to identify potential A/UR UST sites and refill caps and manhole covers confirm the presence of USTs.

#### 3.1.4 Additional Methods used for A/UR UST Identification

Another method used, with moderate success, to obtain information on potential sites was to utilize the Albuquerque Fire Department's (AFD) files on UST removals and installations. These files, referenced by street address, contain information on UST installations, subsequent safety inspections, UST removals, and date back to the early 1960's. Many times it was determined that USTs were removed from a location by using these files. Other important pieces of data obtained include the date of installation, the number of USTs installed, and their capacity.

There are several drawbacks to using these files:

1. The location's address must be known. It is surprising how difficult it can be to obtain a reliable address for many locations. Frequently, a problem arises when a site in question is located at the intersection of two streets.
2. The files are very often incomplete, resulting from the varying priority the AFD has placed on UST throughout the years. The AFD still is understaffed for the enormous task that it faces in inspecting all removals and installations of UST.
3. Another problem is that the contractor installing or removing the UST is responsible for notifying the AFD. Very often the contractor neglects to inform the AFD or is unaware of his responsibility to inform the AFD.

### 3.1.5 Results of Initial Investigations

Of the initial 135 potential A/UR UST sites identified by Environmental Services staff the existence or nonexistence of USTs at 119 locations is known. As of December 1987, when I left the AEHD, 45 locations had been identified as A/UR UST sites. Each site has anywhere from 1 to 5 tanks. Fifty-one locations were identified where tanks no longer or never existed. Twenty-three locations were identified that actually notified, and 16 locations were still considered under investigation, with the exact status unknown.

### 3.1.6 Additional Steps Taken to Locate A/UR USTs

After a sufficient amount of time was spent researching the original list of 135 potential A/UR USTs, it became apparent that further investigations were necessary to locate additional potential A/UR UST sites. Initially, sites were identified by their resemblance to gasoline service stations. While driving throughout the City, it became apparent to me that there were many locations that were at one time or another service stations but due to remodeling, no longer resembled the typical gasoline service station. In addition, I also became aware that there were many other types of businesses that owned and operated USTs. A new search was begun to locate as many of these 'overlooked' sites as possible.

The Albuquerque Fire Department graciously provided assistance by allowing Lieutenant Frank Sanchez to accompany me in the early stages of this new search. Lt. Sanchez has considerable experience in locating UST sites. For several years, he was the AFD's official UST investigator. It was his advice that lead to the development of the techniques used to verify statements made by UST owners. His ability to spot UST vent pipes among dozens of other interfering pipes was amazing. With his assistance, the search for potential A/UR UST locations became much easier and more accurate.

An attempt was made to again cover all major arterials searched in the first windshield surveys. This time, however, secondary and other likely streets were covered. Also, the focus

of this survey was to concentrate on other businesses that utilize USTs such as:

- \* businesses operating fleets of vehicles (contractors, bakeries, ambulance services, and freight delivery companies),
- \* manufactures,
- \* automobile repair shops,
- \* automobile dealerships, and
- \* dry cleaning shops.

Using the techniques discussed in Section 4.1.3 (Verification of Information) it was possible to determine the existence or nonexistence of USTs at many of the sites before contacting the owners. Owners were still contacted, however, and questioned about any USTs on their property.

### 3.1.7 Results of Additional Investigations

As my intern position neared completion I was still conducting the search for potential A/UR USTs. Over 100 additional sites were added to the list of potential A/UR USTs. From the total number of 235 potential A/UR UST locations 73 sites were identified with A/UR USTs, 71 sites were identified where UST no longer or never existed, 28 locations were determined to have notified, and 63 were still under investigation. It was clear to my supervisors that the problem of A/UR USTs was much larger than anyone expected. Therefore, my last task before leaving the AEHD was to train two Environmental Services staff members in the techniques used to identify

potential A/UR UST.

### 3.1.8 Discussion and Observations

Reliable estimates of A/UR UST numbers are difficult to obtain. A considerable amount of detective work is necessary to first locate potential sites and then confirm the existence or nonexistence of tanks at these locations. Any method used to determine estimates of A/UR UST numbers will be subject to error. The methods used to locate sites in the Albuquerque/Bernalillo County area are no exception. Several obvious sources of error include: (1) locations where all traces of USTs have been removed, yet the tanks remain, (2) incomplete coverage of the large area searched, and (3) human error.

In larger cities, such as Albuquerque, with an active business environment, commercial enterprises constantly go bankrupt, relocate, and refurbish. Keeping track of such changes within the business community is extremely difficult. For example, a gas station today could become a toy store or other business tomorrow. The fate of any UST depends upon the parties concerned. A responsible owner, knowing that the tanks are to permanently closed, will properly abandon or remove the tanks, but not all owners are this responsible. A business that has gone bankrupt generally wants to sell its assets as quickly as possible. Storage tanks are an easily neglected responsibility. An unscrupulous or unknowing owner can easily erase all traces of the tanks. Vent pipes can be sawed off and refill caps can be covered with a new coating of asphalt or cement. Locations with

these hidden tanks will not be identified using the detection methods discussed in the sections above. Tanks such as these will remain undetected until they are accidentally discovered, possibly during excavation operations or after a contamination incident is reported.

The vast areas that need to be covered during searches for A/UR USTs are another concern. Albuquerque is the eightieth largest city in the U.S. covering approximately 95.3 square miles (Bureau of Census, 1984). Although some of this area may be eliminated as potential A/UR UST sites, much of the area still may have A/UR USTs. The search can be narrowed down by obtaining City and County zoning maps. Considerable effort should be devoted to searching commercial and industrial zoned areas.

A certain amount of human error is to be expected using the methods for locating A/UR USTs described in the previous sections. An individual investigator must concentrate on traffic conditions while actively searching the roadside for evidence of A/UR USTs. For this reason, a minimum of two people per vehicle should be used to conduct 'windshield surveys'.

An attempt was made to arrive at an estimate of the percentage of the total tank population that will not be reported to the NMEID. Seventy-three A/UR UST sites were identified. If we assume that each site possesses approximately three USTs we can see that 219 individual tanks were identified as being abandoned or unreported. Adding this number to the total tank population for Bernalillo County (2,395 tanks) raises the total



tank population to 2,614. The 219 tanks not reported to the NMEID represent approximately 8.4% of the total population. Due to the difficulties discussed in obtaining reliable estimates of A/UR UST numbers, 8.4% is probably a considerable underestimate. It is the opinion of the author that the percentage of unreported tanks may be as high as 25%. This means, however, that 75% of owners voluntarily notified the appropriate agency. Perhaps with time the number of owners voluntarily cooperating will increase.

It appears that most storage tanks identified as being either abandoned or unreported, are in fact, unreported. I believe that owners failing to notify did so for several reasons:

1. Ignorance of the notification requirements. Underground storage tanks have only recently come under regulatory scrutiny. Most owners are unfamiliar with environmental legislation. The Hazardous and Solid Waste Amendments of 1984 require that gasoline distributors and UST vendors inform tank owners of their notification requirements. Owners of inactive tanks are no longer involved in either the gasoline distribution cycle or with UST vendors. Consequently, these owners were not informed of their notification requirements.
2. Violation of the notification requirements. There will always be owners who disregard the law. Hopefully by enforcing the penalties authorized by the HSWA for

failure to notify (\$10,000 per tank), owners will be convinced it is in their own best interest to obey the law.

#### 4.0 CONCLUSIONS

Leaking underground storage tanks have become the environmental problem of the 1980's. The ubiquitous presence of USTs has forced the regulatory community to take a hard look at effective means of preventing and remediating releases of stored substances. New Federal regulations concerning USTs storing petroleum products are slated to take effect in December 1988. These regulations should significantly decrease the likelihood of newly installed UST systems developing leaks before the end of their designed lifetimes. Owners of older USTs will be forced to upgrade or replace their tanks. The increased liability associated with owning and operating USTs will, undoubtedly, force many owners to alter their business habits.

Abandoned USTs will continue to represent a threat to groundwater supplies. Locating and removing these tanks should remain a concern of local regulatory agencies. No method used to locate these tanks can be expected to achieve 100 percent accuracy. However, the number of located sites can be increased through programs designed to inform tank owners of their notification requirements and by increasing public awareness of the problems associated with abandoned USTs.

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Appendix A

Subtitle I RCRA legislation.

SUBTITLE I—REGULATION OF UNDERGROUND STORAGE TANKS

"DEFINITIONS AND EXEMPTIONS

"Sec. 9001. For the purposes of this subtitle—

"(1) The term 'underground storage tank' means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. Such 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—

"(i) the Natural Gas Pipeline Safety Act of 1968, (49 U.S.C.App. 1671, et seq.),

"(ii) the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C.App. 2001, et seq.), or

"(iii) which is an intrastate pipeline facility regulated under State laws comparable to the provisions of law referred to in clause (i) or (ii) of this subparagraph;

"(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' shall not include any pipes connected to any tank which is described in subparagraphs (A) through (I).

"(2) The term 'regulated substance' means—

"(A) any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and

"(B) petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute);

"(3) The term 'owner' means—

"(A) in the case of an underground storage tank in use on the date of enactment of the Hazardous and Solid Waste Amendments of 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

"(B) in the case of any underground storage tank in use before the date of enactment of the Hazardous and Solid Waste Amendments of 1984, but no longer in use on the date of enactment of such Amendments, any person who owned such tank immediately before the discontinuation of its use.

"(4) The term 'operator' means any person in control of, or having responsibility for, the daily operation of the underground storage tank.

"(5) The term 'release' means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an underground storage tank into ground water, surface water or subsurface soils.

"(6) The term 'person' has the same meaning as provided in section 1004(15), except that such term includes a consortium, a joint venture, and a commercial entity, and the United States Government.

"(7) The term 'nonoperational storage tank' means any underground storage tank in which regulated substances will not be deposited or from which regulated substances will not be dispensed after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984.

#### "NOTIFICATION

##### "Sec. 9002. (a) UNDERGROUND STORAGE TANKS.—

"(1) Within 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, each owner of an underground storage tank shall notify the State or local agency or department designated pursuant to subsection (b)(1) of the existence of such tank, specifying the age, size, type, location, and uses of such tank.

"(2)(A) For each underground storage tank taken out of operation after January 1, 1974, the owner of such tank shall, within 18 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, notify the State or local agency, or department designated pursuant to subsection (b)(1) of the existence of such tanks (unless the owner knows the tank subsequently was removed from the ground). The owner of a tank taken out of operation on or before January 1, 1974, shall not be required to notify the State or local agency under this subsection.

"(B) Notice under subparagraph (A) shall specify, to the extent known to the owner—

"(i) the date the tank was taken out of operation;

"(ii) the age of the tank on the date taken out of operation,

"(iii) the size, type and location of the tank, and

"(iv) the type and quantity of substances left stored in such tank on the date taken out of operation.

"(3) Any owner which brings into use an underground storage tank after the initial notification period specified under paragraph (1), shall notify the designated State or local agency or department within 30 days of the existence of such tank, specifying the age, size, type, location and uses of such tank.

"(4) Paragraphs (1) through (3) of this subsection shall not apply to tanks for which notice was given pursuant to section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

"(5) Beginning 30 days after the Administrator prescribes the form of notice pursuant to subsection (b)(2) and for 18 months thereafter, any person who deposits regulated substances in an underground storage tank shall reasonably notify the owner or operator of such tank of the owner's notification requirements pursuant to this subsection.

"(6) Beginning 30 days after the Administrator issues new tank performance standards pursuant to section 9002(3) of this subtitle, any person who sells a tank intended to be used as an underground storage tank shall notify the purchaser of such tank of the owner's notification requirements pursuant to this subsection.

"(b) AGENCY DESIGNATION.—

"(1) Within 180 days after the enactment of the Hazardous and Solid Waste Amendments of 1984, the Governors of each State shall designate the appropriate State agency or department or local agencies or departments to receive the notifications under subsection (a)(1), (2), or (3).

"(2) Within 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator, in consultation with State and local officials designated pursuant to subsection (b)(1), and after notice and opportunity for public comment, shall prescribe the form of the notice and the information to be included in the notifications under subsection (a)(1), (2), or (3). In prescribing the form of such notice, the Administrator shall take into account the effect on small businesses and other owners and operators.

"RELEASE DETECTION, PREVENTION, AND  
CORRECTION REGULATIONS

"Sec. 9003. (a) REGULATIONS.—The Administrator, after notice and opportunity for public comment, and at least 3 months before the effective dates specified in subsection (f), shall promulgate release detection, prevention, and correction regulations applicable to all owners and operators of underground storage tanks, as may be necessary to protect human health and the environment.

"(b) DISTINCTIONS IN REGULATIONS.—In promulgating regulations under this section, the Administrator may distinguish between types, classes, and ages of underground storage tanks. In making such distinctions, the Administrator may take into consideration factors, including, but not limited to: location of the tanks, soil and climate conditions, uses of the tanks, history of maintenance, age of the tanks, current industry recommended practices, national consensus codes, hydrogeology, water table, size of the tanks, quantity of regulated substances periodically deposited in or dispensed from the tank, the technical capability of the owners and operators, and the compatibility of the regulated substance and the materials of which the tank is fabricated.

"(c) REQUIREMENTS.—The regulations promulgated pursuant to this section shall include, but need not be limited to, the following requirements respecting all underground storage tanks—

"(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designated to identify releases in a manner consistent with the protection of human health and the environment.

"(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing or comparable system;

"(3) requirements for reporting of releases and corrective action taken in response to a release from an underground storage tank;

"(4) requirements for taking corrective action in response to a release from an underground storage tank; and

"(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment.

"(d) FINANCIAL RESPONSIBILITY.—

"(1) As he deems necessary or desirable, the Administrator shall promulgate regulations containing requirements for maintaining evidence of financial responsibility as he deems necessary and desirable for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank.



"(2) Financial responsibility required by this subsection may be establishing in accordance with regulations promulgated by the Administrator by any one, or any combination, of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this subsection, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

"(3) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in any State court of the Federal Courts cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

"(4) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other state or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

"(5) For the purpose of this subsection, the term 'guarantor' means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

"(e) NEW TANK PERFORMANCE STANDARDS.—The Administrator shall, not later than 3 months prior to the effective date specified in subsection (f), issue performance standards for underground storage tanks brought into use on or after the effective date of such standards. The performance standards for new underground storage tanks shall include, but need not be limited to, design, construction, installation, release detection, and compatibility standards.

"(f) EFFECTIVE DATES.—

"(1) Regulations issued pursuant to subsection (c) and (d) of this section, and standards issued pursuant to subsection (e) of this section, for underground storage tanks containing regulated substances defined in section 9001(2)(B) (petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure) shall be effective not later than 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(2) Standards issued pursuant to subsection (e) of this section (entitled 'New Tank Performance Standards') for underground storage tanks containing regulated substances defined in section 9001(2)(A) shall be effective not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(3) Regulations issued pursuant to subsection (c) of this section (entitled 'Requirements') and standards issued pursuant to subsection (d) of this section (entitled 'Financial Responsibility') for underground storage tanks containing regulated substances defined in section 9001(2)(A) shall be effective not later than 48 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984.

"(g) INTERIM PROHIBITION.—

"(1) Until the effective date of the standards promulgated by the Administrator under subsection (e) and after 180 days after the date of the enactment of the Hazardous and Solid Waste Amendments of 1984, no person may install an underground storage tank for the purpose of storing regulated substances unless such tank (whether of single or double wall construction)—

"(A) will prevent releases due to corrosion or structural failure for the operational life of the tank;

"(B) is cathodically protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed in a manner to prevent the release of threatened release of any stored substance; and

"(C) the material used in the construction or lining of the tank is compatible with the substance to be stored.

"(2) Notwithstanding paragraph (1), if soil tests conducted in accordance with ASTM Standard G57-78, or another standard approved by the Administrator, show that soil resistivity in an installation location is 12,000 ohm/cm or more (unless a more stringent standard is prescribed by the Administrator by rule), a storage tank without corrosion protection may be installed in that location during the period referred to in paragraph (1).

"APPROVAL OF STATE PROGRAMS

"Sec. 9004. (a) ELEMENT OF STATE PROGRAM.—

"(1) Beginning 30 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, any State may, submit an underground storage tank release detection, prevention, and correction program for review and approval by the Administrator. The program may cover tanks used to store regulated substances referred to in 9001(2)(A) or (B) or both.

"(2) A State program may be approved by the Administrator under this section only if the State demonstrates that the State program includes the following requirements and standards and provided for adequate enforcement of compliance with such requirements and standards—

"(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designed to identify releases in a manner consistent with the protection of human health and the environment;

"(2) requirements for maintaining records of any monitoring or leak detection system or inventory control system or tank testing system;

"(3) requirements for reporting of any releases and corrective action taken in response to a release from an underground storage tank;

"(4) requirements for taking corrective action in response to a release from an underground storage tank;

"(5) requirements for the closure of tanks to prevent future releases of regulated substances into the environment;

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"(6) requirements for maintaining evidence of financial responsibility for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank;

"(7) standards of performance for new underground storage tanks; and

"(8) requirements—

"(A) for notifying the appropriate State agency or department (or local agency or department) designated according to section 9002(b)(1) of the existence of any operational or non-operational underground storage tank; and

"(B) for providing the information required on the form issued pursuant to section 9002(b)(2).

"(b) FEDERAL STANDARDS.—

(1) A state program submitted under this section may be approved only if the requirements under paragraphs (1) through (7) of subsection (a) are no less stringent than the corresponding requirements standards promulgated by the Administrator pursuant to section 9003(a).

"(2)(A) A State program may be approved without regard to whether or not the requirements referred to in paragraphs (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the 1-year period commencing on the date of promulgation of regulations under section 9003(a) if State regulatory action but no State legislative action is required in order to adopt a State program.

"(B) If such State legislative action is required, the State program may be approved without regard to whether or not the requirements referred to in paragraph (1), (2), (3), and (5) of subsection (a) are less stringent than the corresponding standards under section 9003(a) during the 2-year period commencing on the date of promulgation of regulations under section 9003(a) (and during an additional 1-year period after such legislative action if regulations are required to be promulgated by the State pursuant to such legislative action).

"(c) FINAL RESPONSIBILITY.—

"(1) Corrective action and compensation programs financed by fees on tank owners and operators and administered by State or local agencies or departments may be submitted for approval under subsection (a)(6) as evidence of financial responsibility.

"(2) Financial responsibility required by this subsection may be established in accordance with regulations promulgated by the Administrator by any one, or any combination of the following: insurance, guarantee, surety bond, letter of credit, or qualification as a self-insurer. In promulgating requirements under this subsection, the Administrator is authorized to specify policy or other contractual terms, conditions, or defenses which are necessary or are unacceptable in establishing such evidence of financial responsibility in order to effectuate the purposes of this subtitle.

"(3) In any case where the owner or operator is in bankruptcy, reorganization, or arrangement pursuant to the Federal Bankruptcy Code or where with reasonable diligence jurisdiction in any State court of the Federal Courts cannot be obtained over an owner or operator likely to be solvent at the time of judgment, any claim arising from conduct for which evidence of financial responsibility must be provided under this subsection may be asserted directly against the guarantor providing such evidence of financial responsibility. In the case of any action pursuant to this paragraph such guarantor shall be entitled to invoke all rights and

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defenses which would have been available to the owner or operator if any action had been brought against the owner or operator by the claimant and which would have been available to the guarantor if an action had been brought against the guarantor by the owner or operator.

"(4) The total liability of any guarantor shall be limited to the aggregate amount which the guarantor has provided as evidence of financial responsibility to the owner or operator under this section. Nothing in this subsection shall be construed to limit any other State or Federal statutory, contractual or common law liability of a guarantor to its owner or operator including, but not limited to, the liability of such guarantor for bad faith either in negotiating or in failing to negotiate the settlement of any claim. Nothing in this subsection shall be construed to diminish the liability of any person under section 107 or 111 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 or other applicable law.

"(5) For the purpose of this subsection, the term 'guarantor' means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this subsection.

"(d) EPA DETERMINATION.—

"(1) Within 180 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 the requirements of its program.

"(e) WITHDRAWAL OF AUTHORIZATION.—Whenever the Administrator determines after public hearing that a State is not administering and enforcing a program authorized under this subtitle in accordance with the provisions of this section, he shall so notify the State. If appropriate action is not taken within a reasonable time, not to exceed 120 days after such notification, the Administrator shall withdraw approval of such program and reestablish the Federal program pursuant to this subtitle.

### "INSPECTIONS, MONITORING, AND TESTING

"Sec. 9005. (a) FURNISHING INFORMATION.—For the purposes of developing or assisting in the development of any regulations, conducting any study, or enforcing the provisions of this subtitle, any owner or operator of an underground storage tank (or any tank subject to study under section 9009 that is used for storing regulated substances) shall, upon request of any officer, employee or representative of the Environmental Protection Agency, duly designated by the Administrator, or upon request of any duly designated officer, employee, or representative of a State with an approved program, furnish information relating to such tanks, their associated equipment, their contents, conduct monitoring or testing, and permit such officer at all reasonable times to have access to, and to copy all records relating to such tanks. For the purposes of developing or assisting in the development of any regulation, conducting any study, or enforcing, employees, or representatives are authorized—

"(1) to enter at reasonable times any establishment or other place where an underground storage tank is located;

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"(2) to inspect and obtain samples from any person of any regulated substances contained in such tank; and

"(3) to conduct monitoring or testing of the tanks, associated equipment, contents, or surrounding soils, air, surface water or ground water.

Each such inspection shall be commenced and completed with reasonable promptness.

### "(b) CONFIDENTIALITY.—

(1) Any records, reports, or information obtained from any persons under this section shall be available to the public, except that upon a showing satisfactory to the Administrator (or the State, as the case may be) by any person that records, reports, or information, or a particular part thereof, to which the Administrator (or the State, as the case may be) or any officer, employee, or representative thereof has access under this section if made public, would divulge information entitled to protection under section 1905 of title 18 of the United States Code, such information or particular portion thereof shall be considered confidential in accordance with the record, report, document, or information may be disclosed to other officers, employees, or authorized representatives of the this Act, or when relevant in any proceeding under this Act.

"(2) Any person not subject to the provisions of section 1905 of title 18 of the United States Code who knowingly and willfully divulges or discloses any information entitled to protection under this subsection shall, upon conviction, be subject to a fine of not more than \$5,000 or to imprisonment not to exceed one year, or both.

"(3) In submitting data under this subtitle, a person required to provide such data may—

— "(A) designate the data which such person believes is subtitled to protection under this subsection, and

"(B) submit such designated data separately from other data submitted under this subtitle.

A designation under this paragraph shall be made in writing and in such manner as the Administrator may prescribe.

"(4) Notwithstanding any limitation contained in this section or any other provision of law, all information reported to, or otherwise obtained, by the Administrator (or by representative of the Administrator) under this Act shall be made available, upon written request of any duly authorized committee of the Congress, to such committee (including records, reports, or information obtained by representatives of the Environmental Protection Agency).

## "FEDERAL ENFORCEMENT

### "Sec. 9006. (a) COMPLIANCE ORDERS.—

"(1) Except as provided in paragraph (2), whenever on the basis of any information, the Administrator determines that any person is in violation of any requirement of this subtitle, the Administrator may issue an order requiring compliance within a reasonable specified time period or the Administrator may commence a civil action in the United States district court in which the violation occurred for appropriate relief, including a temporary or permanent injunction.

"(2) In the case of a violation of any requirement of this subtitle where such violation occurs in a State with a program approved under section 9004, the Administrator shall give notice to the State in which such violation has occurred prior to issuing an order or commencing a civil action under this section.

"(3) If a violation fails to comply with an order under this subsection within the time specified in the order, he shall be liable for a civil penalty of not more than \$25,000 for each day of continued noncompliance.

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"(b) PROCEDURE.—Any order issued under this section shall become final unless, no later than 30 days after the order is served, the person or persons named therein request a public hearing. Upon such request the Administrator shall promptly conduct a public hearing. In connection with any proceeding under this section the Administrator may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may promulgate rules for discovery procedures.

"(c) CONTENTS OF ORDER.—Any order issued under this section shall state with reasonable specificity the nature of the violation, specify a reasonable time for compliance, and assess a penalty, if any, which the Administrator determines is reasonable taking into account the seriousness of the violation and any good faith efforts to comply with the applicable requirements.

"(d) CIVIL PENALTIES.—

"(1) Any owner who knowingly fails to notify or submits false information pursuant to section 9002(a) shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or false information is submitted.

"(2) Any owner or operator of an underground storage tank who fails to comply with—

"(A) any requirement or standard promulgated by the Administrator under section 9003;

"(B) any requirement of standard of a State program approved pursuant to section 9004, or

"(C) the provisions of section 9003(g) (entitled "Interim Prohibition")

shall be subject to a civil penalty not to exceed \$10,000 for each tank for each day of violation.

### "FEDERAL FACILITIES

Sec. 9007. (a) APPLICATION OF SUBTITLE—Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any underground storage tank shall be subject to and comply with all Federal, State, interstate, and local requirements, applicable to such tank, both substantive and procedural, in the same manner, and to the same extent, as any other person is subject to such requirements, including payment of reasonable service charges. Neither the United States, nor any agent, employee, or officer thereof, shall be immune or exempt from any process or sanction of any State or Federal court with respect to the enforcement of any such injunctive relief.

"(b) PRESIDENTIAL EXEMPTION.—The President may exempt any underground storage tanks of any department, agency, or instrumentality in the executive branch from compliance with such a requirement if he determines it to be in the paramount interest of the United States to do so. No such exemption shall be granted due to lack of appropriation unless the President shall have specifically requested such appropriation as a part of the budgetary process and the Congress shall have failed to make available such requested appropriations. Any exemption shall be for a period not in excess of one year, but additional exemptions may be granted for periods not to exceed one year upon the President's making a new determination. The President shall report each January to the Congress all exemptions from the requirements of this section granted during the preceding calendar year, together with his reason for granting each such exemption.

"STATE AUTHORITY

"Sec. 9008. Nothing in this subtitle shall preclude or deny any right of any State or political subdivision thereof to adopt or enforce any regulation, requirement or standard of performance respecting underground storage tanks that is more stringent than a regulation, requirement, or standard of performance in effect under this subtitle.

"STUDY OF UNDERGROUND STORAGE TANKS

"Sec. 9009. (a) PETROLEUM TANKS.—Not later than 12 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of underground storage tanks used for the storage of regulated substances defined in section 9001(2)(B).

"(b) OTHER TANKS.—Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall complete a study of all other underground storage tanks.

"(c) ELEMENTS OF STUDIES.—The studies under subsections (a) and (b) shall include an assessment of the ages, types (including methods of manufacture, coatings, protection system, the compatibility of the construction materials and the installation methods) and locations (including the climate of the locations) of such tanks; soil conditions, water tables, and the hydrogeology of tank locations; the relationship between the foregoing factors and likelihood of releases from underground storage tanks; the effectiveness and costs of inventory systems, tank testing, and leak detection systems; and such other factors as the Administrator deems appropriate.

"(d) FARM, AND HEATING OIL TANKS.—Not later than 36 months after the date of enactment of the Hazardous and Solid Waste Amendments of 1984, the Administrator shall conduct a study regarding the tanks referred to in section 9001(1)(A) and (B). Such study shall include estimates of the number and location of such tanks and the analysis of the extent to which there may be releases of threatened releases from such tanks into the environment.

"(e) REPORTS.—Upon completion of the studies authorized by this section, the Administrator shall submit reports to the President and to the Congress containing the results of the studies and recommendations respecting whether or not such tanks should be subject to the preceding provisions of this subtitle.

"(f) REIMBURSEMENT.—

(1) If any owner or operator (excepting an agency, department, or instrumentality of the United States Government, a State or a political subdivision thereof) shall incur costs, including the loss of business opportunity, due to the closure or interruption of operation of an underground storage tank solely for the purposes of conducting studies authorized by this section, the Administrator shall provide such person fair and equitable reimbursement for such costs.

"(2) All claims for reimbursement shall be filed with the Administrator not later than 90 days after the closure or interruption which gives rise to the claim.

"(3) Reimbursements made under this section shall be from funds appropriated by the Congress pursuant to the authorization contained in section 2007(g).

"(4) For purposes of judicial review, a determination by the Administrator under this subsection shall be considered final agency action.

"AUTHORIZATION OF APPROPRIATIONS

"Sec. 9010. For authorization of appropriations to carry out this subtitle, see section 2007(g)."

Appendix B

Notification form used by the  
New Mexico Environmental  
Improvement Division.



# Notification for Underground Storage Tanks

FORM APPROVED  
OMB NO. 2050-0068  
APPROVAL EXPIRES 8-30-91

EPA estimates public reporting burden for this form to average 30 minutes per response, including time for reviewing instructions, gathering and maintaining the data needed, and completing and reviewing the form. Send comments regarding this burden estimate to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503, marked "Attention: Desk Officer for EPA."

I D Number	STATE USE ONLY
	Date Received

## GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

**Who Must Notify?** Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means:

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

**What Tanks Are Included?** Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping 10 1/2" or more beneath the ground. Some examples are underground tanks storing 1. gasoline, used oil, or diesel fuel; and 2. industrial solvents, pesticides, herbicides or fungicides.

**What Tanks Are Excluded?** Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 100 gallons or less capacity used for storing motor fuel for non-commercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

9. storage tanks situated in an underground area (such as a basement, cellar, manworking drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

**What Substances Are Covered?** The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum (e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute)).

**Where To Notify?** Completed notification forms should be sent to the address given at the top of this page.

**When To Notify?** 1. Owners of underground storage tanks in use on that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 90 days of bringing the tanks into use.

**Penalties:** Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

## INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached

### I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency or Other Entity) \_\_\_\_\_

Street Address \_\_\_\_\_

County \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_

Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

Type of Owner (Mark all that apply)

<input type="checkbox"/> Current	<input type="checkbox"/> State or Local Gov't	<input type="checkbox"/> Private or Corporate
<input type="checkbox"/> Former	<input type="checkbox"/> Federal Gov't (GSA facility I D no. _____)	<input type="checkbox"/> Ownership uncertain

### II. LOCATION OF TANK(S)

(If same as Section I, mark box here )

Facility Name or Company Site Identifier, as applicable \_\_\_\_\_

Street Address or State Road, as applicable \_\_\_\_\_

County \_\_\_\_\_

City (nearest) \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_

Indicate number of tanks at this location

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands

### III. CONTACT PERSON AT TANK LOCATION

Name (if same as Section I, mark box here ) \_\_\_\_\_ Job Title \_\_\_\_\_ Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

### IV. TYPE OF NOTIFICATION

Mark box here only if this is an amended or subsequent notification for this location

### V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
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CONTINUE ON REVERSE SIDE

**VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)**

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
<b>1. Status of Tank</b> (Mark all that apply <input type="checkbox"/> ) Currently In Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Estimated Age (Years)</b>					
<b>3. Estimated Total Capacity (Gallons)</b>					
<b>4. Material of Construction</b> (Mark one <input type="checkbox"/> ) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5. Internal Protection</b> (Mark all that apply <input type="checkbox"/> ) Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6. External Protection</b> (Mark all that apply <input type="checkbox"/> ) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7. Piping</b> (Mark all that apply <input type="checkbox"/> ) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8. Substance Currently or Last Stored in Greatest Quantity by Volume</b> (Mark all that apply <input type="checkbox"/> ) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify _____ c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box <input type="checkbox"/> if tank stores a mixture of substances d. Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>9. Additional Information (for tanks permanently taken out of service)</b> a. Estimated date last used (mo. yr.) b. Estimated quantity of substance remaining (gal.) c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**LEAK CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW TANKS AT THIS LOCATION)**

10. Installation (mark all that apply):

- The installer has been certified by the tank and piping manufacturers.
- The installer has been certified or licensed by the implementing agency.
- The installation has been inspected and certified by a registered professional engineer.
- The installation has been inspected and approved by the implementing agency.
- All work listed on the manufacturer's installation checklists has been completed.
- Another method was used as allowed by the implementing agency. Please specify:  
\_\_\_\_\_

11. Release Detection (mark all that apply):

- Manual tank gauging.
- Tank tightness testing with inventory controls.
- Automatic tank gauging
- Vapor monitoring
- Ground-water monitoring.
- Interstitial monitoring within a secondary barrier
- Interstitial monitoring within secondary containment
- Automatic line leak detectors
- Line tightness testing
- Another method allowed by the implementing agency. Please specify  
\_\_\_\_\_

12. Corrosion Protection (if applicable)

- As specified for coated steel tanks with cathodic protection
- As specified for coated steel piping with cathodic protection
- Another method allowed by the implementing agency. Please specify  
\_\_\_\_\_

13. I have financial responsibility in accordance with Subpart I. Please specify

Method \_\_\_\_\_  
Insurer \_\_\_\_\_  
Policy Number \_\_\_\_\_

14. OATH. I certify that the information concerning installation provided in Item 10 is true to the best of my belief and knowledge

Installer \_\_\_\_\_  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_

Appendix C

Final Federal regulations  
for underground storage tanks  
storing petroleum products.

b. *Small Businesses in the General Industry Sector.* An estimated 24 to 41 percent of all USTs in the general industry sector are owned by firms with less than \$1 million in assets. A typical small firm in this segment was assumed to have \$300,000 in assets and net profits of \$21,000 a year. Overall, these firms represent about 12 percent of all UST-owning firms in the general industry sector.

The cost of corrective action for non-plume release (i.e., no ground-water contamination) would leave a small general industry firm in severe financial distress, and the cost of corrective action for a plume release (i.e., contamination of ground water) would lead to the failure of the firm. Replacing a tank would cause a small general industry firm a temporary financial hardship; however, this hardship would not seriously threaten the survival of the firm.

c. *Small Local Government Entities.* Local government entities of all sizes own USTs. In 1982, the typical municipality with a population less than 50,000 had general revenues of \$1.7 million. The costs of replacing even a single UST would represent 2 percent of the revenue of such a municipality, a significant expenditure that would have to be taken into account when planning. A corrective action that required cleaning up a dispersed plume would represent more than 13 percent of the general revenues of such a community, a sum that would probably cause severe financial distress.

In 1982, of the 38,886 local governments classified as counties, municipalities, and townships, 37,581 (approximately 97 percent) had populations of 50,000 or less. Almost all UST-owning local governments would, therefore, be subject to potentially substantial economic impacts under the technical standards rule if an UST release occurred.

#### C. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and have been assigned OMB Control Number 2050-0068. Reporting and recordkeeping burden on the public for this collection is estimated at 8,265,220 hours for the 1,750,000 respondents, with an average of 4 hours per response. These burden estimates include all aspects of the collection effort and may include time for reviewing instructions, searching existing data sources, gathering and maintaining the data

needed, and completing and reviewing the collection of information.

If you wish to submit comments regarding any aspect of this collection of information, including suggestions for reducing the burden, or if you would like a copy of the information collection request (please reference ICR #1380), contact Rick Westlund, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460 (202-382-2745); and Marcus Peacock, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

#### List of Subjects in 40 CFR Part 280

Administration practice and procedures, Confidential business information, Ground water, Hazardous materials, Reporting and recordkeeping requirements, Underground storage tanks, Water pollution control, Water supply.

September 8, 1988.

Lee Thomas,  
Administrator.

For the reasons set out in the Preamble, Part 280 of Title 40 of the Code of Federal Regulations is revised to read as follows:

### PART 280—TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENTS FOR OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS (UST)

#### Subpart A—Program Scope and Interim Prohibition

- Sec.  
280.10 Applicability.  
280.11 Interim prohibition for deferred UST systems.  
280.12 Definitions.

#### Subpart B—UST Systems: Design, Construction, Installation and Notification

- 280.20 Performance standards for new UST systems.  
280.21 Upgrading of existing UST systems.  
280.22 Notification requirements.

#### Subpart C—General Operating Requirements

- 280.30 Spill and overflow control.  
280.31 Operation and maintenance of corrosion protection.  
280.32 Compatibility.  
280.33 Repairs allowed.  
280.34 Reporting and recordkeeping.

#### Subpart D—Release Detection

- 280.40 General requirements for all UST systems.  
280.41 Requirements for petroleum UST systems.  
280.42 Requirements for hazardous substance UST systems.

- 280.43 Methods of release detection for tanks.  
280.44 Methods of release detection for piping.  
280.45 Release detection recordkeeping.

#### Subpart E—Release Reporting, Investigation, and Confirmation

- 280.50 Reporting of suspected releases.  
280.51 Investigation due to off-site impacts.  
280.52 Release investigation and confirmation steps.  
280.53 Reporting and cleanup of spills and overfills.

#### Subpart F—Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances

- 280.60 General.  
280.61 Initial response.  
280.62 Initial abatement measures and site check.  
280.63 Initial site characterization.  
280.64 Free product removal.  
280.65 Investigations for soil and ground-water cleanup.  
280.66 Corrective action plan.  
280.67 Public participation.

#### Subpart G—Out-of-Service UST Systems and Closure

- 280.70 Temporary closure.  
280.71 Permanent closure and changes-in-service.  
280.72 Assessing the site at closure or change-in-service.  
280.73 Applicability to previously closed UST systems.  
280.74 Closure records.  
Appendix I—Notification for Underground Storage Tanks (Form).  
Appendix II—List of Agencies Designated to Receive Notifications.  
Appendix III—Statement for Shipping Tickets and Invoices.

Authority: 42 U.S.C. 6912, 6991, 6991(a), 6991(b), 6991(c), 6991(d), 6991(e), 6991(f), 6991(h).

#### Subpart A—Program Scope and Interim Prohibition

##### § 280.10 Applicability.

(a) The requirements of this part apply to all owners and operators of an UST system as defined in § 280.12 except as otherwise provided in paragraphs (b), (c), and (d) of this section. Any UST system listed in paragraph (c) of this section must meet the requirements of § 280.11.

(b) The following UST systems are excluded from the requirements of this part:

(1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances.

(2) Any wastewater treatment tank system that is part of a wastewater

treatment facility regulated under section 402 or 307(b) of the Clean Water Act.

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks.

(4) Any UST system whose capacity is 110 gallons or less.

(5) Any UST system that contains a *de minimis* concentration of regulated substances.

(6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) *Deferrals*. Subparts B, C, D, E, and G do not apply to any of the following types of UST systems:

(1) Wastewater treatment tank systems;

(2) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following);

(3) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 50, Appendix A;

(4) Airport hydrant fuel distribution systems; and

(5) UST systems with field-constructed tanks.

(d) *Deferrals*. Subpart D does not apply to any UST system that stores fuel solely for use by emergency power generators.

#### § 280.11 Interim prohibition for deferred UST systems.

(a) No person may install an UST system listed in § 280.10(c) for the purpose of storing regulated substances unless the UST system (whether of single- or double-wall construction):

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of noncorrodible material, steel clad with a noncorrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding paragraph (a) of this section, an UST system without corrosion protection may be 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. Owners and operators must maintain records that demonstrate compliance with the requirements of this paragraph for the remaining life of the tank.

**Note:** The National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used as guidance for complying with paragraph (b) of this section.

#### § 280.12 Definitions.

"Aboveground release" means any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

"Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

"Belowground release" means any release to the subsurface of the land and to ground water. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

"Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

"Cathodic protection" is 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.

"Cathodic protection tester" means 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.

"CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

"Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

"Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

"Consumptive use" with respect to heating oil means consumed on the premises.

"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.

"Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

"Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

"Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

"Existing tank system" means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before December 22, 1988. Installation is considered to have commenced if:

(a) The owner or operator has obtained all federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and if,

(b)(1) Either a continuous on-site physical construction or installation program has begun; or,

(2) The owner or operator has entered into contractual obligations—which cannot be cancelled or modified without substantial loss—for physical

construction at the site or installation of the tank system to be completed within a reasonable time.

"Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. "Farm" includes fish hatcheries, rangeland and nurseries with growing operations.

"Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

"Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water.)

"Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

"Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

"Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

"Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.

"Implementing agency" means EPA, or, in the case of a state with a program approved under section 9004 (or pursuant to a memorandum of agreement with EPA), the designated state or local agency responsible for carrying out an approved UST program.

"Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production,

gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.

"Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.

"Motor fuel" means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine.

"New tank system" means a tank system that will be used to contain an accumulation of regulated substances and for which installation has commenced after December 22, 1988. (See also "Existing Tank System.")

"Noncommercial purposes" with respect to motor fuel means not for resale.

"On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.

"Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Subpart G.

"Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.

"Overflow release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

"Owner" means:

(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.

"Person" means an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government.

"Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with *de minimis* quantities of other regulated substances. Such

systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

"Pipe" or "Piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

"Pipeline facilities (including gathering lines)" are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.

"Regulated substance" means:

(a) Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and

(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.

"Release" means any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an UST into ground water, surface water or subsurface soils.

"Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

"Repair" means to restore a tank or UST system component that has caused a release of product from the UST system.

"Residential tank" is a tank located on property used primarily for dwelling purposes.

"SARA" means the Superfund Amendments and Reauthorization Act of 1986.

"Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.

"Storm-water or wastewater collection system" means piping, pumps, conduits, and any other equipment

necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

"Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

"Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

"Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

"Underground release" means any belowground release.

"Underground storage tank" or "UST" means any one or 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

(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.

"Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overflow controls to improve the ability of an underground storage tank system to prevent the release of product.

"UST system" or "Tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

"Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

#### Subpart B—UST Systems: Design, Construction, Installation and Notification

##### § 280.20 Performance standards for new UST systems.

In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems must meet the following requirements.

(a) *Tanks.* Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

Note: The following industry codes may be used to comply with paragraph (a)(1) of this section: Underwriters Laboratories Standard 1316, "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products"; Underwriter's Laboratories of Canada CAN4-S615-M83, "Standard for Reinforced Plastic Underground Tanks for Petroleum Products"; or American Society of Testing and Materials Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks."

(2) The tank is constructed of steel and cathodically protected in the following manner:

(i) The tank is coated with a suitable dielectric material;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current operating status as required in § 280.31(c); and

(iv) Cathodic protection systems are operated and maintained in accordance with § 280.31 or according to guidelines established by the implementing agency; or

Note: The following codes and standards may be used to comply with paragraph (a)(2) of this section:

(A) Steel Tank Institute "Specification for STI-P3 System of External Corrosion Protection of Underground Steel Storage Tanks";

(B) Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks";

(C) Underwriters Laboratories of Canada CAN4-S603-M85, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids," and CAN4-G03.1-M85, "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids," and CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems"; or

(D) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids."

(3) The tank is constructed of a steel-fiberglass-reinforced-plastic composite; or

Note: The following industry codes may be used to comply with paragraph (a)(3) of this section: Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks," or the Association for Composite Tanks ACT-100, "Specification for the Fabrication of FRP Clad Underground Storage Tanks."

(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; or

(5) The tank construction and corrosion protection are determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (a) (1) through (4) of this section.



(b) *Piping.* The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of fiberglass-reinforced plastic; or

**Note:** The following codes and standards may be used to comply with paragraph (b)(1) of this section:

(A) Underwriters Laboratories Subject 971, "UL Listed Non-Metal Pipe";

(B) Underwriters Laboratories Standard 567, "Pipe Connectors for Flammable and Combustible and LP Gas";

(C) Underwriters Laboratories of Canada Guide ULC-107, "Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids"; and

(D) Underwriters Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors."

(2) The piping is constructed of steel and cathodically protected in the following manner:

(i) The piping is coated with a suitable dielectric material;

(ii) Field-installed cathodic protection systems are designed by a corrosion expert;

(iii) Impressed current systems are designed to allow determination of current operating status as required in § 280.31(c); and

(iv) Cathodic protection systems are operated and maintained in accordance with § 280.31 or guidelines established by the implementing agency; or

**Note:** The following codes and standards may be used to comply with paragraph (b)(2) of this section:

(A) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(B) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems";

(C) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; and

(D) National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems."

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(i) The piping is installed at a site that is determined by a corrosion expert to not 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 paragraph

(b)(3)(i) of this section for the remaining life of the piping; or

**Note:** National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; and National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems," may be used to comply with paragraph (b)(3) of this section.

(4) The piping construction and corrosion protection are determined by the implementing agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (b) (1) through (3) of this section.

(c) *Spill and overflow prevention equipment.* (1) Except as provided in paragraph (c)(2) of this section, to prevent spilling and overflowing associated with product transfer to the UST system, owners and operators must use the following spill and overflow prevention equipment:

(i) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe (for example, a spill catchment basin); and

(ii) Overflow prevention equipment that will:

(A) Automatically shut off flow into the tank when the tank is no more than 95 percent full; or

(B) Alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm.

(2) Owners and operators are not required to use the spill and overflow prevention equipment specified in paragraph (c)(1) of this section if:

(i) Alternative equipment is used that is determined by the implementing agency to be no less protective of human health and the environment than the equipment specified in paragraph (c)(1) (i) or (ii) of this section; or

(ii) The UST system is filled by transfers of no more than 25 gallons at one time.

(d) *Installation.* All tanks and piping must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

**Note:** Tank and piping system installation practices and procedures described in the following codes may be used to comply with the requirements of paragraph (d) of this section:

(i) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System"; or

(ii) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(iii) American National Standards Institute Standard B31.3, "Petroleum Refinery Piping," and American National Standards Institute Standard B31.4 "Liquid Petroleum Transportation Piping System."

(e) *Certification of installation.* All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with paragraph (d) of this section by providing a certification of compliance on the UST notification form in accordance with § 280.22.

(1) The installer has been certified by the tank and piping manufacturers; or

(2) The installer has been certified or licensed by the implementing agency; or

(3) The installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation; or

(4) The installation has been inspected and approved by the implementing agency; or

(5) All work listed in the manufacturer's installation checklists has been completed; or

(6) The owner and operator have complied with another method for ensuring compliance with paragraph (d) of this section that is determined by the implementing agency to be no less protective of human health and the environment.

#### § 280.21 Upgrading of existing UST systems.

(a) *Alternatives allowed.* Not later than December 22, 1998, all existing UST systems must comply with one of the following requirements:

(1) New UST system performance standards under § 280.20;

(2) The upgrading requirements in paragraphs (b) through (d) of this section; or

(3) Closure requirements under Subpart C of this part, including applicable requirements for corrective action under Subpart F.

(b) *Tank upgrading requirements.* Steel tanks must be upgraded to meet one of the following requirements in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory:

(1) *Interior lining.* A tank may be upgraded by internal lining if:

(i) The lining is installed in accordance with the requirements of § 280.33, and

(ii) Within 10 years after lining, and every 5 years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.

(2) *Cathodic protection.* A tank may be upgraded by cathodic protection if the cathodic protection system meets the requirements of § 280.20(a)(2) (ii), (iii), and (iv) and the integrity of the tank is ensured using one of the following methods:

(i) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system; or

(ii) The tank has been installed for less than 10 years and is monitored monthly for releases in accordance with § 280.43 (d) through (h); or

(iii) The tank has been installed for less than 10 years and is assessed for corrosion holes by conducting two (2) tightness tests that meet the requirements of § 280.43(c). The first tightness test must be conducted prior to installing the cathodic protection system. The second tightness test must be conducted between three (3) and six (6) months following the first operation of the cathodic protection system; or

(iv) The tank is assessed for corrosion holes by a method that is determined by the implementing agency to prevent releases in a manner that is no less protective of human health and the environment than paragraphs (b)(2) (i) through (iii) of this section.

(3) *Internal lining combined with cathodic protection.* A tank may be upgraded by both internal lining and cathodic protection if:

(i) The lining is installed in accordance with the requirements of § 280.33; and

(ii) The cathodic protection system meets the requirements of § 280.20(a)(2) (ii), (iii), and (iv).

**Note:** The following codes and standards may be used to comply with this section:

(A) American Petroleum Institute Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks";

(B) 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";

(C) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems"; and

(D) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems."

(c) *Piping upgrading requirements.* Metal piping that routinely contains regulated substances and is in contact with the ground must be cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and must meet the requirements of § 280.20(b)(2) (ii), (iii), and (iv).

**Note:** The codes and standards listed in the note following § 280.20(b)(2) may be used to comply with this requirement.

(d) *Spill and overflow prevention equipment.* To prevent spilling and overflowing associated with product transfer to the UST system, all existing UST systems must comply with new UST system spill and overflow prevention equipment requirements specified in § 280.20(c).

#### § 280.22 Notification requirements.

(a) Any owner who brings an underground storage tank system into use after May 8, 1986, must within 30 days of bringing such tank into use, submit, in the form prescribed in Appendix I of this part, a notice of existence of such tank system to the state or local agency or department designated in Appendix II of this part to receive such notice.

**Note:** Owners and operators of UST systems that were in the ground on or after May 8, 1986, unless taken out of operation on or before January 1, 1974, were required to notify the designated state or local agency in accordance with the Hazardous and Solid Waste Amendments of 1984, Pub. L. 98-616, on a form published by EPA on November 8, 1985 (50 FR 46602) unless notice was given pursuant to section 103(c) of CERCLA. Owners and operators who have not complied with the notification requirements may use portions I through VI of the notification form contained in Appendix I of this part.

(b) In states where state law, regulations, or procedures require owners to use forms that differ from those set forth in Appendix I of this part to fulfill the requirements of this section, the state forms may be submitted in lieu of the forms set forth in Appendix I of this part. If a state requires that its form be used in lieu of the form presented in this regulation, such form must meet the requirements of section 9002.

(c) Owners required to submit notices under paragraph (a) of this section must provide notices to the appropriate agencies or departments identified in Appendix II of this part for each tank they own. Owners may provide notice for several tanks using one notification form, but owners who own tanks located at more than one place of operation must file a separate

notification form for each separate place of operation.

(d) Notices required to be submitted under paragraph (a) of this section must provide all of the information in sections I through VI of the prescribed form (or appropriate state form) for each tank for which notice must be given. Notices for tanks installed after December 22, 1988 must also provide all of the information in section VII of the prescribed form (or appropriate state form) for each tank for which notice must be given.

(e) All owners and operators of new UST systems must certify in the notification form compliance with the following requirements:

(1) Installation of tanks and piping under § 280.20(e);

(2) Cathodic protection of steel tanks and piping under § 280.20 (a) and (b);

(3) Financial responsibility under Subpart H of this part; and

(4) Release detection under §§ 280.41 and 280.42.

(f) All owners and operators of new UST systems must ensure that the installer certifies in the notification form that the methods used to install the tanks and piping complies with the requirements in § 280.20(d).

(g) Beginning October 24, 1988, any person who sells a tank intended to be used as an underground storage tank must notify the purchaser of such tank of the owner's notification obligations under paragraph (a) of this section. The form provided in Appendix III of this part may be used to comply with this requirement.

#### Subpart C—General Operating Requirements

##### § 280.30 Spill and overflow control.

(a) Owners and operators must ensure that releases due to spilling or overflowing do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overflowing and spilling.

**Note:** The transfer procedures described in National Fire Protection Association Publication 385 may be used to comply with paragraph (a) of this section. Further guidance on spill and overflow prevention appears in American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," and National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code."

(b) The owner and operator must report, investigate, and clean up any

spills and overfills in accordance with § 280.53.

**§ 280.31 Operation and maintenance of corrosion protection.**

All owners and operators of steel UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances:

(a) All corrosion 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.

(b) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(1) *Frequency.* All cathodic protection systems must be tested within 6 months of installation and at least every 3 years thereafter or according to another reasonable time frame established by the implementing agency; and

(2) *Inspection criteria.* The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

**Note:** National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used to comply with paragraph (b)(2) of this section.

(c) UST systems with impressed current cathodic protection systems must also be inspected every 60 days to ensure the equipment is running properly.

(d) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained (in accordance with § 280.34) to demonstrate compliance with the performance standards in this section. These records must provide the following:

(1) The results of the last three inspections required in paragraph (c) of this section; and

(2) The results of testing from the last two inspections required in paragraph (b) of this section.

**§ 280.32 Compatibility.**

Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.

**Note:** Owners and operators storing alcohol blends may use the following codes to comply with the requirements of this section:

(a) American Petroleum Institute Publication 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations"; and

(b) American Petroleum Institute Publication 1627, "Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations."

**§ 280.33 Repairs allowed.**

Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(a) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

**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, Liquefied 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."

(b) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

(c) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Fiberglass pipes and fittings may be repaired in accordance with the manufacturer's specifications.

(d) Repaired tanks and piping must be tightness tested in accordance with § 280.43(c) and § 280.44(b) within 30 days following the date of the completion of the repair except as provided in paragraphs (d) (1) through (3), of this section:

(1) The repaired tank is internally inspected in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory; or

(2) The repaired portion of the UST system is monitored monthly for

releases in accordance with a method specified in § 280.43 (d) through (h); or

(3) Another test method is used that is determined by the implementing agency to be no less protective of human health and the environment than those listed above.

(e) Within 6 months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 280.31 (b) and (c) to ensure that it is operating properly.

(f) UST system owners and operators must maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with the requirements of this section.

**§ 280.34 Reporting and recordkeeping.**

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 Subtitle I of the Resource Conservation and Recovery Act, as amended.

(a) *Reporting.* Owners and operators must submit the following information to the implementing agency:

(1) Notification for all UST systems (§ 280.22), which includes certification of installation for new UST systems (§ 280.20(e)).

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

(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); and

(4) A notification before permanent closure or change-in-service (§ 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.

Note: The recordkeeping and reporting requirements in this section have been approved by the Office of Management and Budget and have been assigned OMB Control No. 2050-0068.

**Subpart D—Release Detection**

**§ 280.40 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.

(b) When a release detection method operated in accordance with the performance standards in § 280.43 and 280.44 indicates a release may have occurred, owners and operators must notify the implementing agency in accordance with Subpart E.

(c) Owners and operators of all UST systems must comply with the release detection requirements of this subpart by December 22 of the year listed in the following table:

**SCHEDULE FOR PHASE-IN OF RELEASE DETECTION**

Year system was installed	Year when release detection is required (by December 22 of the year indicated)				
	1989	1990	1991	1992	1993
Before 1965 or date unknown	RD	P			
1965-69		P/RD			
1970-74		P	RD		
1975-79		P		RD	
1980-88		P			RD

New tanks (after December 22) immediately upon installation.

P = Must begin release detection for all pressurized piping in accordance with § 280.41(b)(1) and § 280.42(b)(4).  
 RD = Must begin release detection for tanks and suction piping in accordance with § 280.41(a), § 280.41(b)(2), and § 280.42.

(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.

**§ 280.41 Requirements for petroleum UST systems.**

Owners and operators of petroleum UST systems must provide release detection for tanks and piping as follows:

(a) *Tanks.* Tanks must be monitored at least every 30 days for releases using one of the methods listed in § 280.43 (d) through (h) except that:

- (1) UST systems that meet the performance standards in § 280.20 or § 280.21, and the monthly inventory control requirements in § 280.43 (a) or (b), may use tank tightness testing (conducted in accordance with § 280.43(c)) at least every 5 years until December 22, 1998, or until 10 years after the tank is installed or upgraded under § 280.21(b), whichever is later;
- (2) UST systems that do not meet the performance standards in § 280.20 or § 280.21 may use monthly inventory controls (conducted in accordance with § 280.43(a) or (b)) and annual tank tightness testing (conducted 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)).

(b) *Piping.* Underground piping that routinely contains regulated substances

must be monitored for releases in a manner that meets one of the following requirements:

(1) *Pressurized piping.* Underground piping that conveys regulated substances under pressure must:

- (i) Be equipped with an automatic line leak detector conducted in accordance with § 280.44(a); and
- (ii) Have an annual line tightness test conducted in accordance with § 280.44(b) or have monthly monitoring conducted in accordance with § 280.44(c).

(2) *Suction piping.* Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least every 3 years and in accordance with § 280.44(b), or use a monthly monitoring method conduct in accordance with § 280.44(c). No release detection is required for suction piping that is designed and constructed to meet the following standards:

- (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 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.

**§ 280.42 Requirements for hazardous substance UST systems.**

Owners and operators of hazardous substance UST systems must provide release detection that meets the following requirements:

(a) Release detection at existing UST systems must meet the requirements for petroleum UST systems in § 280.41. By December 22, 1998, all existing hazardous substance UST systems must meet the release detection requirements for new systems in paragraph (b) of this section.

(b) Release detection at new hazardous substance UST systems must meet the following requirements:

- (1) Secondary containment systems must be designed, constructed and installed to:
  - (i) Contain regulated substances released from the tank system until they are detected and removed;
  - (ii) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(iii) Be checked for evidence of a release at least every 30 days.

Note.—The provisions of 40 CFR 265.193, Containment and Detection of Releases, may be used to comply with these requirements.

(2) Double-walled tanks must be designed, constructed, and installed to:

(i) Contain a release from any portion of the inner tank within the outer wall; and

(ii) Detect the failure of the inner wall.

(3) External liners (including vaults) must be designed, constructed, and installed to:

(i) Contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Prevent the interference of precipitation or ground-water intrusion with the ability to contain or detect a release of regulated substances; and

(iii) Surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).

(4) Underground piping must be equipped with secondary containment that satisfies the requirements of paragraph (b)(1) of this section (e.g., trench liners, jacketing of double-walled pipe). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in accordance with § 280.44(a).

(5) Other methods of release detection may be used if owners and operators:

(i) Demonstrate to the implementing agency that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in §§ 280.43(b) through (h) can detect a release of petroleum;

(ii) Provide information to the implementing agency on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site; and

(iii) Obtain approval from the implementing agency to use the alternate release detection method before the installation and operation of the new UST system.

**§ 280.43 Methods of release detection for tanks.**

Each method of release detection for tanks used to meet the requirements of § 280.41 must be conducted in accordance with the following:

(a) *Inventory control.* Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis in the following manner:

(1) Inventory volume measurements for regulated substance inputs,

and the amount still remaining in the tank are recorded each operating day;

(2) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(3) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(4) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(5) Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 cubic inches for every 5 gallons of product withdrawn; and

(6) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

Note: Practices described in the American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," may be used, where applicable, as guidance in meeting the requirements of this paragraph.

(b) *Manual tank gauging.* Manual tank gauging must meet the following requirements:

(1) Tank liquid level measurements are taken at the beginning and ending of a period of at least 36 hours during which no liquid is added to or removed from the tank;

(2) Level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;

(3) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(4) A leak is suspected and subject to the requirements of Subpart E if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Weekly standard (one test)	Monthly standard (average of four tests)
550 gallons or less	10 gallons	5 gallons.
551-1,000 gallons.	13 gallons	7 gallons.
1,001-2,000 gallons.	26 gallons	13 gallons.

(5) Only tanks of 550 gallons or less nominal capacity may use this as the sole method of release detection. Tanks of 551 to 2,000 gallons may use the method in place of manual inventory

control in § 280.43(a). Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet the requirements of this subpart.

(c) *Tank tightness testing.* 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.

(d) *Automatic tank gauging.* Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:

(1) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and

(2) Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of § 280.43(a).

(e) *Vapor monitoring.* Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(1) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(2) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(3) The measurement of vapors by the monitoring device is not rendered inoperative by the ground water, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days;

(4) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(5) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(6) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (e) (1) through (4) of this section and to

establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product; and

(7) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(f) *Ground-water monitoring.* Testing or monitoring for liquids on the ground water must meet the following requirements:

(1) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(2) Ground water is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(3) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground-water conditions;

(4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(5) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(6) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells;

(7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (f) (1) through (5) of this section and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(g) *Interstitial monitoring.* Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(1) For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product;

**Note:** The provisions outlined in the Steel Tank Institute's "Standard for Dual Wall Underground Storage Tanks" may be used as guidance for aspects of the design and construction of underground steel double-walled tanks.

(2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least  $10^{-6}$  cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The ground water, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days;

(v) The site is assessed to ensure that the secondary barrier is always above the ground water and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(3) For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(h) *Other methods.* Any other type of release detection method, or combination of methods, can be used if:

(1) It 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

(2) The implementing agency may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in paragraphs (c) through (h) of this section. In comparing methods, the implementing agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and

operator must comply with any conditions imposed by the implementing agency on its use to ensure the protection of human health and the environment.

#### § 280.44 Methods of release detection for piping.

Each method of release detection for piping used to meet the requirements of § 280.41 must be conducted in accordance with the following:

(a) *Automatic line leak detectors.* Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm may be used only if they detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour. An annual test of the operation of the leak detector must be conducted in accordance with the manufacturer's requirements.

(b) *Line tightness testing.* A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(c) *Applicable tank methods.* Any of the methods in § 280.43 (e) through (h) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

#### § 280.45 Release detection recordkeeping.

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.

#### Subpart E—Release Reporting, Investigation, and Confirmation

##### § 280.50 Reporting of suspected releases.

Owners and operators of UST systems must report to the implementing agency within 24 hours, or another reasonable time period specified by the implementing agency, and follow the procedures in § 280.52 for any of the following conditions:

(a) The discovery by owners and operators or others of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(b) Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and

(c) Monitoring results from a release detection method required under § 280.41 and § 280.42 that indicate a release may have occurred unless:

(1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result; or

(2) In the case of inventory control, a second month of data does not confirm the initial result.

##### § 280.51 Investigation due to off-site impacts.

When required by the implementing agency, owners and operators of UST systems must follow the procedures in § 280.52 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the implementing agency or brought to its attention by another party.

##### § 280.52 Release investigation and confirmation steps.

Unless corrective action is initiated in accordance with Subpart F, owners and operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting

under § 280.50 within 7 days, or another reasonable time period specified by the implementing agency, using either the following steps or another procedure approved by the implementing agency:

(a) *System test.* Owners and operators must conduct tests (according to the requirements for tightness testing in § 280.43(c) and § 280.44(b)) that determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping, or both.

(1) Owners and operators must repair, replace or upgrade the UST system, and begin corrective action in accordance with Subpart F if the test results for the system, tank, or delivery piping indicate that a leak exists.

(2) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.

(3) Owners and operators must conduct a site check as described in paragraph (b) of this section if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.

(b) *Site check.* Owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of ground water, and other factors appropriate for identifying the presence and source of the release.

(1) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin corrective action in accordance with Subpart F;

(2) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

##### § 280.53 Reporting and cleanup of spills and overfills.

(a) Owners and operators of UST systems must contain and immediately clean up a spill or overfill and report to the implementing agency within 24 hours, or another reasonable time period specified by the implementing agency, and begin corrective action in accordance with Subpart F in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds 25 gallons or another

reasonable amount specified by the implementing agency, or that causes a sheen on nearby surface water; and

(2) Spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR Part 302).

(b) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than 25 gallons or another reasonable amount specified by the implementing agency, and a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within 24 hours, or another reasonable time period established by the implementing agency, owners and operators must immediately notify the implementing agency.

Note: Pursuant to §§ 302.6 and 355.40, a release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within 24 hours) to the National Response Center under sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and to appropriate state and local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986.

#### Subpart F—Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances

##### § 280.60 General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this subpart except for USTs excluded under § 280.10(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

##### § 280.61 Initial response.

Upon confirmation of a release in accordance with § 280.52 or after a release from the UST system is identified in any other manner, owners and operators must perform the following initial response actions within 24 hours of a release or within another reasonable period of time determined by the implementing agency:

(a) Report the release to the implementing agency (e.g., by telephone or electronic mail);

(b) Take immediate action to prevent any further release of the regulated substance into the environment; and

(c) Identify and mitigate fire, explosion, and vapor hazards.

**§ 280.62 Initial abatement measures and site check.**

(a) Unless directed to do otherwise by the implementing agency, owners and operators must perform the following abatement measures:

(1) Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of the released substance into surrounding soils and ground water;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator must comply with applicable State and local requirements;

(5) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site check required by § 280.52(b) or the closure site assessment of § 280.72(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill, depth to ground water and other factors as appropriate for identifying the presence and source of the release; and

(6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with § 280.64.

(b) Within 20 days after release confirmation, or within another reasonable period of time determined by the implementing agency, owners and operators must submit a report to the implementing agency summarizing the initial abatement steps taken under paragraph (a) of this section and any resulting information or data.

**§ 280.63 Initial site characterization.**

(a) Unless directed to do otherwise by the implementing agency, owners and operators must assemble information about the site and the nature of the

release, including information gained while confirming the release or completing the initial abatement measures in § 280.60 and § 280.61. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and/or site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site check required under § 280.62(a)(5); and

(4) Results of the free product investigations required under § 280.62(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 280.64.

(b) Within 45 days of release confirmation or another reasonable period of time determined by the implementing agency, owners and operators must submit the information collected in compliance with paragraph (a) of this section to the implementing agency in a manner that demonstrates its applicability and technical adequacy, or in a format and according to the schedule required by the implementing agency.

**§ 280.64 Free product removal.**

At sites where investigations under § 280.62(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the implementing agency while continuing, as necessary, any actions initiated under §§ 280.61 through 280.63, or preparing for actions required under §§ 280.65 through 280.66. In meeting the requirements of this section, owners and operators must:

(a) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, State and Federal regulations;

(b) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(c) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(d) Unless directed to do otherwise by the implementing agency, prepare and submit to the implementing agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

(1) The name of the person(s) responsible for implementing the free product removal measures;

(2) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(3) The type of free product recovery system used;

(4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(5) The type of treatment applied to, and the effluent quality expected from, any discharge;

(6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

(7) The disposition of the recovered free product.

**§ 280.65 Investigations for soil and ground-water cleanup.**

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the ground water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that ground-water wells have been affected by the release (e.g., as found during release confirmation or previous corrective action measures);

(2) Free product is found to need recovery in compliance with § 280.64;

(3) There is evidence that contaminated soils may be in contact with ground water (e.g., as found during conduct of the initial response measures or investigations required under §§ 280.60 through 280.64); and

(4) The implementing agency requests an investigation, based on the potential effects of contaminated soil or ground water on nearby surface water and ground-water resources.

(b) Owners and operators must submit the information collected under paragraph (a) of this section as soon as practicable or in accordance with a schedule established by the implementing agency.



**§ 280.66 Corrective action plan.**

(a) At any point after reviewing the information submitted in compliance with § 280.61 through § 280.63, the implementing agency may require owners and operators to submit additional information or to develop and submit a corrective action plan for responding to contaminated soils and ground water. If a plan is required, owners and operators must submit the plan according to a schedule and format established by the implementing agency. Alternatively, owners and operators may, after fulfilling the requirements of § 280.61 through § 280.63, choose to submit a corrective action plan for responding to contaminated soil and ground water. In either case, owners and operators are responsible for submitting a plan that provides for adequate protection of human health and the environment as determined by the implementing agency, and must modify their plan as necessary to meet this standard.

(b) The implementing agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the implementing agency should consider the following factors as appropriate:

- (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;
- (5) An exposure assessment; and
- (6) Any information assembled in compliance with this subpart.

(c) Upon approval of the corrective action plan or as directed by the implementing agency, owners and operators must implement the plan, including modifications to the plan made by the implementing agency. They must monitor, evaluate, and report the results of implementing the plan in accordance with a schedule and in a format established by the implementing agency.

(d) Owners and operators may, in the interest of minimizing environmental contamination and promoting more effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved provided that they:

- (1) Notify the implementing agency of their intention to begin cleanup;

- (2) Comply with any conditions imposed by the implementing agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and

- (3) Incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the implementing agency for approval.

**§ 280.67 Public participation.**

(a) For each confirmed release that requires a corrective action plan, the implementing agency must provide notice to the public by means designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by field staff.

(b) The implementing agency must ensure that site release information and decisions concerning the corrective action plan are made available to the public for inspection upon request.

(c) Before approving a corrective action plan, the implementing agency may hold a public meeting to consider comments on the proposed corrective action plan if there is sufficient public interest, or for any other reason.

(d) The implementing agency must give public notice that complies with paragraph (a) of this section if implementation of an approved corrective action plan does not achieve the established cleanup levels in the plan and termination of that plan is under consideration by the implementing agency.

**Subpart G—Out-of-Service UST Systems and Closure****§ 280.70 Temporary closure.**

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 280.31, and any release detection in accordance with Subpart D. Subparts E and F must be complied with if a release is suspected or confirmed. However, release detection is not required as long as the UST system is empty. 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.

(b) When an UST system is temporarily closed for 3 months or more,

owners and operators must also comply with the following requirements:

- (1) Leave vent lines open and functioning; and

- (2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than 12 months, owners and operators must permanently close the UST system if it does not meet either performance standards in § 280.20 for new UST systems or the upgrading requirements in § 280.21, *except that* the spill and overfill equipment requirements do not have to be met. Owners and operators must permanently close the substandard UST systems at the end of this 12-month period in accordance with §§ 280.71–280.74, *unless* the implementing agency provides an extension of the 12-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 280.72 before such an extension can be applied for.

**§ 280.71 Permanent closure and change-in-service.**

(a) At least 30 days before beginning either permanent closure or a change-in-service under paragraphs (b) and (c) of this section, or within another reasonable time period determined by the implementing agency, owners and operators must notify the implementing agency of their intent to permanently close or make the change-in-service, *unless* such action is in response to corrective action. The required assessment of the excavation zone under § 280.72 must be performed after notifying the implementing agency but before completion of the permanent closure or a change-in-service.

(b) To permanently close a tank, owners and operators must empty and clean it by removing all liquids and accumulated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with an inert solid material.

(c) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with § 280.72.

Note: The following cleaning and closure procedures may be used to comply with this section:

(A) American Petroleum Institute Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks";

(B) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks," may be used as guidance for compliance with this section; and

(D) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard \* \* \* Working in Confined Space" may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.

**§ 280.72 Assessing the site at closure or change-in-service.**

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored

substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release. The requirements of this section are satisfied if one of the external release detection methods allowed in § 280.43 (e) and (f) is operating in accordance with the requirements in § 280.43 at the time of closure, and indicates no release has occurred.

(b) If contaminated soils, contaminated ground water, or free product as a liquid or vapor is discovered under paragraph (a) of this section, or by any other manner, owners and operators must begin corrective action in accordance with Subpart F.

**§ 280.73 Applicability to previously closed UST systems.**

When directed by the implementing agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the

excavation zone and close the UST system in accordance with this Subpart if releases from the UST may, in the judgment of the implementing agency, pose a current or potential threat to human health and the environment.

**§ 280.74 Closure records.**

Owners and operators must maintain records in accordance with § 280.34 that are capable of demonstrating compliance with closure requirements under this Subpart. The results of the excavation zone assessment required in § 280.72 must be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the UST system out of service;

(b) By the current owners and operators of the UST system site; or

(c) By mailing these records to the implementing agency if they cannot be maintained at the closed facility.

**BALLING CODE 8560-50-M**

# Notification for Underground Storage Tanks

FORM APPROVED  
OMB NO. 2050-0068  
APPROVAL EXPIRES 9-30-91

EPA estimates public reporting burden for this form to average 30 minutes per response, including time for reviewing instructions, gathering and maintaining the data needed, and completing and reviewing the form. Send comments regarding this burden estimate to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503, marked "Attention: Desk Officer for EPA."

STATE USE ONLY

ID Number

Date Received

## GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

**Who Must Notify?** Section 9002 of RCRA, as amended, requires that (unless exempted), owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means:

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984 but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

**What Tanks Are Included?** Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel; and 2. industrial solvents, pesticides, herbicides, or fungicides.

**What Tanks Are Excluded?** Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979 or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mine, working drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

**What Substances Are Covered?** The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 301.114 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) with the exception of those substances regulated as hazardous waste under Subpart C of RCRA. It also includes petroleum (e.g., crude oil or any fraction thereof) which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

**Where To Notify?** Completed notification forms should be sent to the address given at the top of this page.

**When To Notify?** 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks in use after May 8, 1986, must notify within 30 days of bringing the tanks in use.

**Penalties:** Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

## INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached

### I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

Street Address

County

City State ZIP Code

Area Code Phone Number

Type of Owner (Mark all that apply )

- |                                  |  |   |
|----------------------------------|--|---|
| <input type="checkbox"/> Current | <input type="checkbox"/> State or Local Gov't                        | <input type="checkbox"/> Private or Corporate |
| <input type="checkbox"/> Former  | <input type="checkbox"/> Federal Gov't (GSA facility I.D. no. _____) | <input type="checkbox"/> Ownership uncertain  |

### II. LOCATION OF TANK(S)

(If same as Section I, mark box here )

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest) State ZIP Code

Indicate number of tanks at this location

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands

### III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here )

Job Title

Area Code

Phone Number

### IV. TYPE OF NOTIFICATION

Mark box here only if this is an amended or subsequent notification for this location

### V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

Signature

Date Signed

CONTINUE ON REVERSE SIDE

**VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)**

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
<b>1. Status of Tank</b> (Mark all that apply <input type="checkbox"/> ) Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Estimated Age (Years)</b>					
<b>3. Estimated Total Capacity (Gallons)</b>					
<b>4. Material of Construction</b> (Mark one <input type="checkbox"/> ) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5. Internal Protection</b> (Mark all that apply <input type="checkbox"/> ) Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6. External Protection</b> (Mark all that apply <input type="checkbox"/> ) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7. Piping</b> (Mark all that apply <input type="checkbox"/> ) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8. Substance Currently or Last Stored in Greatest Quantity by Volume</b> (Mark all that apply <input type="checkbox"/> ) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box <input type="checkbox"/> if tank stores a mixture of substances d. Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>9. Additional Information (for tanks permanently taken out of service)</b> a. Estimated date last used (mo. yr). b. Estimated quantity of substance remaining (gal.) c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	/	/	/	/	/

**ENVIRONMENTAL CERTIFICATION OF COMPLIANCE (COMPLETE FOR ALL NEW TANKS AT THIS LOCATION)**

10. Installation (mark all that apply):

- The installer has been certified by the tank and piping manufacturers.
- The installer has been certified or licensed by the implementing agency.
- The installation has been inspected and certified by a registered professional engineer.
- The installation has been inspected and approved by the implementing agency.
- All work listed on the manufacturer's installation checklists has been completed
- Another method was used as allowed by the implementing agency. Please specify \_\_\_\_\_

11. Release Detection (mark all that apply):

- Manual tank gauging.
- Tank tightness testing with inventory controls
- Automatic tank gauging
- Vapor monitoring
- Ground-water monitoring.
- Interstitial monitoring within a secondary barrier
- Interstitial monitoring within secondary containment
- Automatic line leak detectors
- Line tightness testing
- Another method allowed by the implementing agency. Please specify \_\_\_\_\_

12. Corrosion Protection (if applicable)

- As specified for coated steel tanks with cathodic protection
- As specified for coated steel piping with cathodic protection
- Another method allowed by the implementing agency. Please specify \_\_\_\_\_

13. I have financial responsibility in accordance with Subpart I. Please specify

Method \_\_\_\_\_  
Insurer \_\_\_\_\_  
Policy Number \_\_\_\_\_

14. OATH I certify that the information concerning installation provided in Item 10 is true to the best of my belief and knowledge

Installer \_\_\_\_\_  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_

## Appendix II—List of Agencies Designated To Receive Notifications

- Alabama (EPA Form).** Alabama Department of Environmental Management, Ground Water Section/Water Division, 1751 Congressman W.L. Dickinson Drive, Montgomery, Alabama 36130, 205/271-7823
- Alaska (EPA Form).** Department of Environmental Conservation, Box 0, Juneau, Alaska 99811-1800, 970/465-2653
- American Samoa (EPA Form).** Executive Secretary, Environmental Quality Commission, Office of the Governor, American Samoan Government, Pago Pago, American Samoa 96799; Attention: UST Notification
- Arizona (EPA Form).** Attention: UST Coordinator, Arizona Department of Environmental Quality, Environmental Health Services, 2005 N. Central, Phoenix, Arizona 85004
- Arkansas (EPA Form).** Arkansas Department of Pollution Control and Ecology, P.O. Box 9583, Little Rock, Arkansas 72219, 501/562-7444
- California (State Form).** Executive Director, State Water Resources Control Board, P.O. Box 100, Sacramento, California 95801, 916/445-1533
- Colorado (EPA Form).** Section Chief, Colorado Department of Health, Waste Management Division, Underground Tank Program, 4210 East 11th Avenue, Denver, Colorado 80220, 303/320-8333
- Connecticut (State Form).** Hazardous Materials Management Unit, Department of Environmental Protection, State Office Building, 165 Capitol Avenue, Hartford, Connecticut 06106
- Delaware (State Form).** Division of Air and Waste Management, Department of Natural Resources and Environmental Control, P.O. Box 1401, 89 Kings Highway, Dover, Delaware 19903, 302/726-5409
- District of Columbia (EPA Form).** Attention: UST Notification Form, Department of Consumer and Regulatory Affairs, Pesticides and Hazardous Waste Management Branch, Room 114, 5010 Overlook Avenue SW., Washington, DC 20032
- Florida (State Form).** Florida Department of Environmental Regulation, Solid Waste Section, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, Florida 32399, 904/487-4398
- Georgia (EPA Form).** Georgia Department of Natural Resources, Environmental Protection Division, Underground Storage Tank Program, 3420 Norman Berry Drive, 7th Floor, Hapeville, Georgia 30354, 404/656-7404
- Guam (State Form).** Administrator, Guam Environmental Protection Agency, P.O. Box 2999, Agana, Guam 96910, Overseas Operator (Commercial call 646-8863)
- Hawaii (EPA Form).** Administrator, Hazardous Waste Program, 645 Halekauwila Street, Honolulu, Hawaii 96813, 808/548-2270
- Idaho (EPA Form).** Underground Storage Tank Coordinator, Water Quality Bureau, Division of Environmental Quality, Idaho Department of Health and Welfare, 450 W. State Street, Boise, Idaho 83720, 208/334-4251
- Illinois (EPA Form).** Underground Storage Tank Coordinator, Division of Fire Prevention, Office of State Fire Marshal, 3150 Executive Park Drive, Springfield, Illinois 62703-4599
- Indiana (EPA Form).** Underground Storage Tank Program, Office of Environmental Response, Indiana Department of Environmental Management, 105 South Meridian Street, Indianapolis, Indiana 46225
- Iowa (State Form).** UST Coordinator, Iowa Department of Natural Resources, Henry A. Wallace Building, 900 East Grand, Des Moines, Iowa 50219, 512/281-8135
- Kansas (EPA Form).** Kansas Department of Health and Environment, Forbes Field, Building 740, Topeka, Kansas 66620, 913/296-1594
- Kentucky (State Form).** Department of Environmental Protection, Hazardous Waste Branch, Fort Boone Plaza, Building #2, 18 Reilly Road, Frankfort, Kentucky 40601, 501/564-6716
- Louisiana (State Form).** Secretary, Louisiana Department of Environmental Quality, P.O. Box 44066, Baton Rouge, Louisiana 70804, 501/342-1265
- Maine (State Form).** Attention: Underground Tanks Program, Bureau of Oil and Hazardous Material Control, Department of Environmental Protection, State House—Station 17, Augusta, Maine 04333
- Maryland (EPA Form).** Science and Health Advisory Group, Office of Environmental Programs, 201 West Preston Street, Baltimore, Maryland 21201
- Massachusetts (EPA Form).** UST Registry, Department of Public Safety, 1010 Commonwealth Avenue, Boston, Massachusetts 02215, 617/566-4500
- Michigan (EPA Form).** Michigan Department of State Police, Fire Marshal Division, General Office Building, 7150 Harris Drive, Lansing, Michigan 48913
- Minnesota (State Form).** Underground Storage Tank Program, Division of Solid and Hazardous Wastes, Minnesota Pollution Control Agency, 520 West Lafayette Road, St. Paul, Minnesota 55155
- Mississippi (State Form).** Department of Natural Resources, Bureau of Pollution Control, Underground Storage Tank Section, P.O. Box 10385, Jackson, Mississippi 39209, 601/961-5171
- Missouri (EPA Form).** UST Coordinator, Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102, 314/751-7428
- Montana (EPA Form).** Solid and Hazardous Waste Bureau, Department of Health and Environmental Science, Cogswell Bldg., Room B-201, Helena, Montana 59620
- Nebraska (EPA Form).** Nebraska State Fire Marshal, P.O. Box 94677, Lincoln, Nebraska 68509-4677, 402/471-9465
- Nevada (EPA Form).** Attention: UST Coordinator, Division of Environmental Protection, Department of Conservation and Natural Resources, Capitol Complex 201 S. Fall Street, Carson City, Nevada 89710, 800/992-0900, Ext. 4670, 702/885-4670
- New Hampshire (EPA Form).** NH Dept. of Environmental Services, Water Supply and Pollution Control Division, Hazen Drive, P.O. Box 95, Concord, New Hampshire 03301, Attention: UST Registration
- New Jersey (State Form).** Underground Storage Tank Coordinator, Department of Environmental Protection, Division of Water Resources (CN-029), Trenton, New Jersey 08625, 609/292-0424
- New Mexico (EPA Form).** New Mexico Environmental Improvement Division, Groundwater/Hazardous Waste Bureau, P.O. Box 968, Santa Fe, New Mexico 37504, 505/827-2933
- New York (EPA Form).** Bulk Storage Section, Division of Water, Department of Environmental Conservation, 50 Wolf Road, Room 326, Albany, New York 12233-0001, 518/457-4351
- North Carolina (EPA Form).** Division of Environmental Management, Ground-Water Operations Branch, Department of Natural Resources and Community Development, P.O. Box 27687, Raleigh, North Carolina 27611, 919/733-3221
- North Dakota (State Form).** Division of Hazardous Management and Special Studies, North Dakota Department of Health, Box 5520, Bismarck, North Dakota 58502-5520
- Northern Mariana Islands (EPA Form).** Chief, Division of Environmental Quality, P.O. Box 1304, Commonwealth of Northern Mariana Islands, Saipan, CM 96950, Cable Address: Gov. NMI Saipan, Overseas Operator: 6984
- Ohio (State Form).** State Fire Marshal's Office, Department of Commerce, 8895 E. Main Street, Reynoldsburg, Ohio 43068, State Hotline: 800/282-1927
- Oklahoma (EPA Form).** Underground Storage Tank Program, Oklahoma Corporation Comm., Jim Thorpe Building, Oklahoma City, Oklahoma 73105
- Oregon (State Form).** Underground Storage Tank Program, Hazardous and Solid Waste Division, Department of Environmental Quality, 811 S.W. Sixth Avenue, Portland, Oregon 98204, 503/229-5788
- Pennsylvania (EPA Form).** PA Department of Environmental Resources, Bureau of Water Quality Management, Ground Water Unit, 9th Floor Fulton Building, P.O. Box 2063, Harrisburg, Pennsylvania 17120
- Puerto Rico (EPA Form).** Director, Water Quality Control Area, Environmental Quality Board, Commonwealth of Puerto Rico, Santurce, Puerto Rico, 809/725-0717
- Rhode Island (EPA Form).** UST Registration, Department of Environmental Management, 83 Park Street, Providence, Rhode Island 02903, 401/277-2234
- South Carolina (State Form).** Ground-Water Protection Division, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201, 803/756-5213
- South Dakota (EPA Form).** Office of Water Quality, Department of Water and Natural Resources, Joe Foss Building, Pierre, South Dakota 57501.
- Tennessee (EPA Form).** Tennessee Department of Health and Environment, Division of Superfund Underground Storage Tank Section, 150 Ninth Avenue, North, Nashville, Tennessee 37219-5404, 615/741-0690

Texas (EPA Form), Underground Storage Tank Program, Texas Water Commission, P.O. Box 13087, Austin, Texas 78711

Utah (EPA Form), Division of Environmental Health, P.O. Box 45500, Salt Lake City, Utah 84145-0500

Vermont (State Form), Underground Storage Tank Program, Vermont AEC/Waste Management Division, State Office Building, Montpelier, Vermont 05602, 802/828-3395

Virginia (EPA Form), Virginia Water Control Board, P.O. Box 11143, Richmond, Virginia 23230-1143, 804/257-6685

Virgin Islands (EPA Form), 205(j) Coordinator, Division of Natural Resources Management, 14 F Building 111, Watergut Homes, Christianstead, St. Croix, Virgin Islands 00820

Washington (State Form), Underground Storage Tank Notification, Solid and Hazardous Waste Program, Department of Ecology, M/S PV-11, Olympia, Washington 98504-8711, 206/459-6318

West Virginia (EPA Form), Attention: UST Notification, Solid and Hazardous Waste, Ground Water Branch, West Virginia Department of Natural Resources, 1201 Greenbriar Street, Charleston, West Virginia 25311

Wisconsin (State Form), Bureau of Petroleum Inspection, P.O. Box 7969, Madison, Wisconsin 53707, 608/266-7605

Wyoming (EPA Form), Water Quality Division, Department of Environmental Quality, Herschler Building, 4th Floor West, 122 West 25th Street, Cheyenne, Wyoming 82002, 307/777-7781.

### Appendix III—Statement for Shipping Tickets and Invoices

Note.—A Federal law (the Resource Conservation and Recovery Act (RCRA), as amended (Pub. L. 98-616)) requires owners of certain underground storage tanks to notify designated State or local agencies by May 8, 1986, of the existence of their tanks. Notifications for tanks brought into use after May 8, 1986, must be made within 30 days. Consult EPA's regulations, issued on November 8, 1985 (40 CFR Part 280) to determine if you are affected by this law.

[FR Doc. 88-21153 Filed 9-22-88; 8:45 am]

BILLING CODE 6560-50-M

### 40 CFR Part 281

[FRL-3385-4]

### Underground Storage Tanks; State Program Approval

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (EPA) today finalizes regulations for approval of states to run underground storage tank programs in

lieu of the federal program. These regulations were first proposed on April 17, 1987 (52 FR 12853) and were further developed in a subsequent Supplemental Notice published on December 23, 1987 (52 FR 48638).

Subtitle I of the Resource Conservation and Recovery Act (RCRA) establishes a federal program for the regulation of underground storage tanks (USTs) Subtitle I of RCRA also allows EPA to approve state programs to operate in place of the federal UST requirements if those state programs have standards that are no less stringent than the federal requirements and provide adequate enforcement of compliance with those standards. States with approved UST programs will have primary enforcement responsibility with respect to UST program requirements in their states. Today's rule establishes final requirements for approval of state UST programs and for streamlined procedures to be used in submitting and evaluating state applications.

**DATES:** These regulations will become effective on December 22, 1988.

**ADDRESSES:** The public docket for this rulemaking is available for public inspection from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding holidays at: Office of Underground Storage Tanks (WH-562A), Docket No. UST 4, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Call (202) 475-9720 to make an appointment with docket clerk.

**FOR FURTHER INFORMATION CONTACT:** RCRA/SUPERFUND Hotline, (800) 424-9346; or in Washington, DC, (202) 382-3000.

**SUPPLEMENTARY INFORMATION:** The contents of today's preamble are listed in the following outline:

- I. Authority
- II. Background
  - A. Subtitle I of RCRA (Section 9004)
  - B. Summary of the April 17 Proposal
  - C. Summary of Supplemental Notice
  - D. Summary of Public Comments
  - E. Important Influences on Today's Rule
- III. Summary of Today's Rule
  - A. Summary of Today's Rule
  - B. Strategy for State Program Approval
- IV. Analysis of Today's Rule
  - A. Subpart A—Purpose, General Requirements and Scope (§§ 281.10-281.12)
  - B. Subpart B—Components of a Program Application (§§ 281.20-281.25)
  - C. Subpart C—Criteria for "No Less Stringent" (§§ 281.30-281.36)
  - D. Subpart D—Adequate Enforcement of Compliance (§§ 281.40-281.43)
  - E. Subpart E—Approval Procedures (§§ 281.50-281.52)
  - F. Subpart F—Withdrawal of Approval of State Programs (§§ 281.60-281.61)
- V. Relationship to Other EPA Programs

- A. Leaking Underground Storage Tank Petroleum Response Fund
- B. RCRA Hazardous Waste Program
- VI. Economic and Regulatory Impacts
  - A. Regulatory Impact Analysis
  - B. Regulatory Flexibility Act
  - C. Paperwork Reduction Act

### I. Authority

These regulations are promulgated under sections 9004, 9005, 9006 and 2002 of the Solid Waste Disposal Act, as amended.

### II. Background

#### A. Subtitle I of RCRA (section 9004)

The Hazardous and Solid Waste Amendments of 1984 added Subtitle I to the Resource Conservation and Recovery Act (RCRA). Subtitle I establishes a federal program for the regulation of underground storage tanks and has the following components.

Section 9002 requires each owner of an underground storage tank (UST) in operation after 1973 to notify the designated state agency of the existence of the tank and the tank age, size, type, location, and use. This notification was due on May 8, 1986, or within 30 days after an owner brings a new UST into use.

Section 9003(a) requires EPA to promulgate standards and requirements for new and existing USTs covering detection, prevention, and correction of releases. These regulations are set forth in the final UST technical standards published elsewhere in today's Federal Register.

Section 9003(g) establishes a prohibition on the installation of certain USTs from May 8, 1985 until the effective date of EPA's new tank performance standards established under section 9003(e). Section 9003(h), added to Subtitle I under section 205 of the Superfund Amendments and Reauthorization Act of 1986, establishes a program for cleanup of petroleum from leaking USTs.

Section 9004 provides a procedure by which states may administer and enforce state UST programs in lieu of the federal program established under section 9003. Under section 9004, states may submit their programs to EPA and will be approved by EPA if the state program meets the requirements for notification found under section 9002, provides for adequate enforcement of compliance with all program requirements, and includes requirements that are no less stringent than the corresponding federal UST technical standards for leak detection and prevention, recordkeeping for leak detection, reporting of releases and

Number 2050-0067. The one-time reporting and recordkeeping burden on the public for this collection is estimated at 15,272 total hours, or 1,632 hours for the 6 respondents per year over nine years (with an average of 272 hours per response). These burden estimates include all aspects of the collection effort and may include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information, etc.

If you wish to submit comments regarding any aspect of this collection of information, including suggestions for reducing the burden, or if you would like a copy of the information collection request (please reference ICF #1355), contact Rick Westlund, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460 (202-382-2745); and Marcus Peacock, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

#### List of Subjects in 40 CFR Part 281

Administrative practice and procedure, Hazardous materials, Petroleum, State program approval, Underground storage tanks.

Date: September 8, 1988.

Lee M. Thomas,  
Administrator.

For reasons set out in the preamble, Title 40 of the Code of Federal Regulations is amended by adding a new Part 281 as follows:

### PART 281—APPROVAL OF STATE UNDERGROUND STORAGE TANK PROGRAMS

#### Subpart A—Purpose, General Requirements and Scope

Sec.

- 281.10 Purpose.
- 281.11 General requirements.
- 281.12 Scope and definitions.

#### Subpart B—Components of a Program Application

- 281.20 Program application.
- 281.21 Description of state program.
- 281.22 Procedures for adequate enforcement.
- 281.23 Schedule for interim approval.
- 281.24 Memorandum of agreement.
- 281.25 Attorney General's statement.

#### Subpart C—Criteria for No Less Stringent

- 281.30 New UST system design, construction, installation, and notification.

- 281.31 Upgrading existing UST systems.
- 281.32 General operating requirements.
- 281.33 Release detection.
- 281.34 Release reporting, investigation, and confirmation.
- 281.35 Release response and corrective action.
- 281.36 Out-of-service UST systems and closure.
- 281.37 Financial responsibility for USTs containing petroleum. [Reserved]
- 281.38 Financial responsibility for USTs containing hazardous substances. [Reserved]

#### Subpart D—Adequate Enforcement of Compliance

- 281.40 Requirements for compliance monitoring program and authority.
- 281.41 Requirements for enforcement authority.
- 281.42 Requirements for public participation.
- 281.43 Sharing of information.

#### Subpart E—Approval Procedures

- 281.50 Approval procedures for state programs.
- 281.51 Amendment required at end of interim period.
- 281.52 Revision of approved state programs.

#### Subpart F—Withdrawal of Approval of State Programs

- 281.60 Criteria for withdrawal of approval of state programs.
- 281.61 Procedures for withdrawal of approval of state programs.

Authority: Sections 2002, 9004, 9005, 9006 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6912, 6991 (c), (d), (e)).

#### Subpart A—Purpose, General Requirements and Scope

##### § 281.10 Purpose.

(a) This subpart specifies the requirements that state programs must meet for approval by the Administrator under section 9004 of RCRA, and the procedures EPA will follow in approving, revising and withdrawing approval of state programs.

(b) State submissions for program approval must be in accordance with the procedures set out in this part.

(c) A state may apply for approval under this subpart at any time after the promulgation of release detection, prevention, and correction regulations under section 9003 of RCRA.

(d) Any state program approved by the Administrator under this part shall at all times be conducted in accordance with the requirements of this part.

##### § 281.11 General requirements.

(a) *State program elements.* The following substantive elements of a state program must be addressed in a state application for approval:

(1) Requirements for all existing and new underground storage tanks:

- (i) New UST systems (design, construction, installation, and notification);
- (ii) Upgrading of existing UST systems;
- (iii) General operating requirements;
- (iv) Release detection;
- (v) Release reporting, investigation, and confirmation;
- (vi) Out-of-service USTs and closure;
- (vii) Release response and corrective action; and
- (viii) Financial responsibility for UST systems containing petroleum.

(2) Provisions for adequate enforcement of compliance with the above program elements.

(b) *Final approval.* The state must demonstrate that its requirements under each state program element for existing and new UST systems are no less stringent than the corresponding federal requirements as set forth in Subpart C of this part, except as provided in paragraph (c) of this section. The state must also demonstrate that it has a program that provides adequate enforcement of compliance with these requirements.

(c) *Interim approval.* (1) The Administrator may approve state programs with requirements less stringent than the federal requirements for a period of 1 to 3 years from September 23, 1988. Such interim approval may be granted only if state regulatory and/or legislative change is required in order for the state program to be no less stringent than the federal requirements and standards under Part 280 for one or more of the following program elements: Release detection at existing UST systems; release reporting and investigation; and out-of-service or closed UST systems.

(2) A state program may receive interim approval if it:

- (i) Has requirements for three elements:
  - (A) Release Detection;
  - (B) Release Reporting, Investigation, and Confirmation; and
  - (C) Out-of-Service UST Systems and Closure; and
- (ii) Has requirements that are no less stringent than the corresponding federal requirements for five elements:
  - (A) New UST System Design, Construction, Installation and Notification;
  - (B) Upgrading Existing UST Systems;
  - (C) General Operating Requirements;
  - (D) Release Response and Corrective Action; and
  - (E) Financial Responsibility for UST systems containing petroleum; and



(iii) Provides for adequate enforcement of compliance with these requirements.

(3) A state with a program that has received interim approval must receive final approval of an amended program containing program elements that are no less stringent than the corresponding federal program elements under Subpart C in accordance with the following schedule:

(i) If only state regulatory action is required, the state must submit an amended program to EPA for approval before September 23, 1989.

(ii) If only state legislative action is required, the state must submit an amended program to EPA for approval before September 23, 1990.

(iii) If both state legislative and regulatory action are required, the state must submit an amended program to EPA for approval before September 23, 1991.

(d) States with programs approved under this part are authorized to administer the state program in lieu of the federal program and will have primary enforcement responsibility with respect to the requirements of the approved program. EPA retains authority to take enforcement action in approved states as necessary and will notify the designated lead state agency of any such intended action.

**§ 281.12 Scope and definitions.**

(a) *Scope.* (1) The Administrator may approve either partial or complete state programs. A "partial" state program regulates either solely UST systems containing petroleum or solely UST systems containing hazardous substances. If a "partial" state program is approved, EPA will administer the remaining part of the program. A "complete" state program regulates both petroleum and hazardous substance tanks.

(2) EPA will administer the UST program on Indian lands, except where Congress has clearly expressed an intention to grant a state authority to regulate petroleum and hazardous substance USTs on Indian lands. In either case, this decision will not impair a state's ability to obtain program approval for petroleum and/or hazardous substances on non-Indian lands in accordance with this part.

(3) Nothing in this subpart precludes a state from:

(i) Adopting or enforcing requirements that are more stringent or more extensive than those required under this part; or

(ii) Operating a program with a greater scope of coverage than that required under this part. Where an

approved state program has a greater scope of coverage than required by federal law, the additional coverage is not part of the federally-approved program.

(b) *Definitions.* (1) The definitions in Part 280 apply to all subparts of this part.

(2) For the purpose of this part, the term "interim approval" means the approval received by a state program that meets the requirements in § 281.11(c) (1) and (2) for the time period defined in § 281.11(c)(3).

(3) For the purposes of this part the term "final approval" means the approval received by a state program that meets the requirements in § 281.11(b).

**Subpart B—Components of a Program Application**

**§ 281.20 Program application.**

Any state that seeks to administer a program under this part must submit an application containing the following parts:

(a) A transmittal letter from the Governor of the state requesting program approval;

(b) A description in accordance with § 281.21 of the state program and operating procedures;

(c) A demonstration of the state's procedures to ensure adequate enforcement;

(d) A schedule for obtaining needed authorities under interim approval, where applicable;

(e) A Memorandum of Agreement outlining roles and responsibilities of EPA and the implementing agency;

(f) An Attorney General's statement in accordance with § 281.25 certifying to applicable state authorities; and

(g) Copies of all applicable state statutes and regulations.

Note: EPA has designed an optional application form that is available for use by state applicants.

**§ 281.21 Description of state program.**

A state seeking to administer a program under this part must submit a description of the program it proposes to administer under state law in lieu of the federal program. The description of a state's existing or planned program must include:

(a) The scope of the state program:

(1) Whether the state program regulates UST systems containing petroleum or hazardous substances, or both;

(2) Whether the state is applying for interim or final approval;

(3) Whether the state program is more stringent or broader in scope than the federal program, and in what ways; and

(4) Whether the state has any existing authority over Indian lands or has existing agreements with Indian tribes relevant to the regulation of underground storage tanks.

(b) The organization and structure of the state and local agencies with responsibility for administering the program. The jurisdiction and responsibilities of all state and local implementing agencies must be delineated, appropriate procedures for coordination set forth, and one state agency designated as a "lead agency" to facilitate communications between EPA and the state.

(c) Staff resources to carry out and enforce the required state program elements, both existing and planned, including the number of employees, agency where employees are located, general duties of the employees, and current limits or restrictions on hiring or utilization of staff.

(d) An existing state funding mechanism to meet the estimated costs of administering and enforcing the required state program elements, and any restrictions or limitations upon this funding.

**§ 281.22 Procedures for adequate enforcement.**

A state must submit a description of its compliance monitoring and enforcement procedures, including related state administrative or judicial review procedures.

**§ 281.23 Schedule for interim approval.**

For a state program that must modify its statutory or regulatory requirements for release detection, release reporting and investigation, and out-of-service or closed UST systems in order to be no less stringent than the federal requirements, the plan must include a schedule for making such changes and for submitting an amendment to the state application in accordance with § 281.51.

**§ 281.24 Memorandum of agreement.**

EPA and the approved state will negotiate a Memorandum of Agreement (MOA) containing proposed areas of coordination and shared responsibilities between the state and EPA and separate EPA and state roles and responsibilities in areas including, but not limited to: Implementation of partial state programs; enforcement; compliance monitoring; EPA oversight; and sharing and reporting of information. At the time of approval, the MOA must be signed by

the Regional Administrator and the appropriate official of the state lead agency.

**§ 281.25 Attorney General's statement.**

(a) A state must submit a written demonstration from the Attorney General that the laws and regulations of the state provide adequate authority to carry out the program described under § 281.21 and to meet other requirements of this part. This statement may be signed by independent legal counsel for the state rather than the Attorney General, provided that such counsel has full authority to independently represent the state Agency in court on all matters pertaining to the state program. This statement must include citations to the specific statutes, administrative regulations, and where appropriate, judicial decisions that demonstrate adequate authority to regulate and enforce requirements for UST systems. State statutes and regulations cited by the state Attorney General must be fully effective when the program is approved.

(b) If a state currently has authority over underground storage tank activities on Indian Lands, the statement must contain an appropriate analysis of the state's authority.

**Note:** The reporting requirements under this section have been approved by the Office of Management and Budget (OMB) and have been assigned OMB Control Number 2050-0067.

**Subpart C—Criteria for No-Less-Stringent**

**§ 281.30 New UST system design, construction, installation, and notification.**

In order to be considered no less stringent than the corresponding federal requirements for new UST system design, construction, installation, and notification, the state must have requirements that ensure all new underground storage tanks, and the attached piping in contact with the ground and used to convey the regulated substance stored in the tank, conform to the following:

(a) Be designed, constructed, and installed in a manner that will prevent releases for their operating life due to manufacturing defects, structural failure, or corrosion.

**Note:** Codes of practice developed by nationally-recognized organizations and national independent testing laboratories may be used to demonstrate that the state program requirements are no less stringent in this area.

(b) Be provided with equipment to prevent spills and tank overfills when new tanks are installed or existing tanks

are upgraded, unless the tank does not receive more than 25 gallons at one time.

(c) All UST system owners and operators must notify the implementing state agency of the existence of any new UST system using a form designated by the state agency.

**§ 281.31 Upgrading existing UST systems.**

In order to be considered no less stringent than the corresponding federal upgrading requirements, the state must have requirements that ensure existing UST systems will be replaced or upgraded before December 22, 1998, to prevent releases for their operating life due to corrosion, and spills or overfills.

**§ 281.32 General operating requirements.**

In order to be considered no less stringent than the corresponding federal general operating requirements, the state must have requirements that ensure all new and existing UST systems conform to the following:

(a) Prevent spills and overfills by ensuring that the space in the tank is sufficient to receive the volume to be transferred and that the transfer operation is monitored constantly;

(b) Where equipped with cathodic protection, be operated and maintained by a person with sufficient training and experience in preventing corrosion, and in a manner that ensures that no releases occur during the operating life of the UST system;

**Note:** Codes of practice developed by nationally-recognized organizations and national independent testing laboratories may be used to demonstrate the state program requirements are no less stringent.

(c) Be made of or lined with materials that are compatible with the substance stored;

(d) At the time of upgrade or repair, be structurally sound and upgraded or repaired in a manner that will prevent releases due to structural failure or corrosion during their operating lives;

(e) Have records of monitoring, testing, repairs, and closure maintained that are sufficient to demonstrate recent facility compliance status, except that records demonstrating compliance with repair and upgrading requirements must be maintained for the remaining operating life of the facility. These records must be made readily available when requested by the implementing agency.

**§ 281.33 Release detection.**

In order to be considered no less stringent than the corresponding federal requirements for release detection, the state must have requirements that at a minimum ensure all UST systems are

provided with release detection that conforms to the following:

(a) *General methods.* Release detection requirements for owners and operators must consist of a method, or combination of methods, that is:

(1) Capable of detecting a release of the regulated substance from any portion of the UST system that routinely contains regulated substances—as effectively as any of the methods allowed under the federal technical standards—for as long as the UST system is in operation. In comparing methods, the implementing agency shall consider the size of release that the method can detect and the speed and reliability with which the release can be detected.

(2) Designed, installed, calibrated, operated and maintained so that releases will be detected in accordance with the capabilities of the method.

(b) *Phase-in of requirements.* Release detection requirements must, at a minimum, be scheduled to be applied at all UST systems:

(1) Immediately when a new UST system is installed;

(2) On an orderly schedule that completes a phase-in of release detection at all existing UST systems (or their closure) before December 21, 1993, except that release detection for the piping attached to any existing UST that conveys a regulated substance under greater than atmospheric pressure must be phased-in before December 22, 1990.

(c) *Requirements for petroleum tanks.* All petroleum tanks must be sampled, tested, or checked for releases at least monthly, except that:

(1) New or upgraded tanks (that is, tanks and piping protected from releases due to corrosion and equipped with both spill and overfill prevention devices) may temporarily use monthly inventory control (or its equivalent) in combination with tightness testing (or its equivalent) conducted every 5 years for the first 10 years after the tank is installed or upgraded or until December 22, 1998, whichever is later; and

(2) Existing tanks unprotected from releases due to corrosion or without spill and overfill prevention devices may use monthly inventory control (or its equivalent) in combination with annual tightness testing (or its equivalent) until December 22, 1998.

(d) *Requirements for petroleum piping.* All underground piping attached to the tank that routinely conveys petroleum must conform to the following:

(1) If the petroleum is conveyed under greater than atmospheric pressure:

(i) The piping must be equipped with release detection that detects a release within an hour by restricting or shutting off flow or sounding an alarm; and

(ii) The piping must have monthly monitoring applied or annual tightness tests conducted.

(2) If suction lines are used:

(i) Tightness tests must be conducted at least once every 3 years, unless a monthly method of detection is applied to this piping; or

(ii) The piping is designed to allow the contents of the pipe to drain back into the storage tank if the suction is released and is also designed to allow an inspector to immediately determine the integrity of the piping system.

(e) *Requirements for hazardous substance UST systems.* All UST systems storing hazardous substances must meet the following:

(1) All existing hazardous substance UST systems must comply with all the requirements for petroleum UST systems in paragraphs (c) and (d) of this section and after December 22, 1998, they must comply with the following paragraph (e)(2) of this section.

(2) All new hazardous substance UST systems must use interstitial monitoring within secondary containment of the tanks and the attached underground piping that conveys the regulated substance stored in the tank, unless the owner and operator can demonstrate to the state (or the state otherwise determines) that another method will detect a release of the regulated substance as effectively as other methods allowed under the state program for petroleum UST systems and that effective corrective action technology is available for the hazardous substance being stored that can be used to protect human health and the environment.

**§ 281.34 Release reporting, investigation, and confirmation.**

In order to be considered no less stringent than the corresponding federal requirements for release reporting, investigation, and confirmation, the state must have requirements that ensure all owners and operators conform with the following:

(a) Promptly investigate all suspected releases, including:

(1) When unusual operating conditions, release detection signals and environmental conditions at the site suggest a release of regulated substances may have occurred; and

(2) When required by the implementing agency to determine the source of a release having an impact in the surrounding area; and

(b) Promptly report all confirmed underground releases and any spills and overfills that are not contained and cleaned up.

(c) Ensure that all owners and operators contain and clean up unreported spills and overfills in a manner that will protect human health and the environment.

**§ 281.35 Release response and corrective action.**

In order to be considered no less stringent than the corresponding federal requirements for release response and corrective action, the state must have requirements that ensure:

(a) All releases from UST systems are promptly assessed and further releases are stopped;

(b) Actions are taken to identify, contain and mitigate any immediate health and safety threats that are posed by a release (such activities include investigation and initiation of free product removal, if present);

(c) All releases from UST systems are investigated to determine if there are impacts on soil and ground water, and any nearby surface waters. The extent of soil and ground water contamination must be delineated when a potential threat to human health and the environment exists.

(d) All releases from UST systems are cleaned up through soil and ground water remediation and any other steps, as necessary to protect human health and the environment;

(e) Adequate information is made available to the state to demonstrate that corrective actions are taken in accordance with the requirements of paragraphs (a) through (d) of this section. This information must be submitted in a timely manner that demonstrates its technical adequacy to protect human health and the environment; and

(f) In accordance with § 280.67, the state must notify the affected public of all confirmed releases requiring a plan for soil and ground water remediation, and upon request provide or make available information to inform the interested public of the nature of the release and the corrective measures planned or taken.

**§ 281.36 Out-of-service UST systems and closure.**

In order to be considered no less stringent than the corresponding federal requirements for temporarily closed UST systems and permanent closure, the state must have requirements that ensure UST systems conform with the following:

(a) Removal from service. All new and existing UST systems temporarily closed must:

(1) Continue to comply with general operating requirements, release reporting and investigation, and release response and corrective action;

(2) Continue to comply with release detection requirements if regulated substances are stored in the tank;

(3) Be closed off to outside access; and

(4) Be permanently closed if the UST system has not been protected from corrosion and has not been used in one year, unless the state approves an extension after the owner and operator conducts a site assessment.

(b) Permanent closure of UST systems. All tanks and piping must be cleaned and permanently closed in a manner that eliminates the potential for safety hazards and any future releases. The owner or operator must notify the state of permanent UST system closure. The site must also be assessed to determine if there are any present or were past releases, and if so, release response and corrective action requirements must be complied with.

(c) All UST systems taken out of service before the effective date of the federal regulations must permanently close in accordance with paragraph (b) of this section when directed by the implementing agency.

**§ 281.37 Financial responsibility for USTs containing petroleum. EM (Reserved)**

**§ 281.38 Financial responsibility for USTs containing hazardous substances. (Reserved)**

**Subpart D—Adequate Enforcement of Compliance**

**§ 281.40 Requirements for compliance monitoring program and authority.**

(a) Any authorized representative of the state engaged in compliance inspections, monitoring, and testing must have authority to obtain by request any information from an owner or operator with respect to the UST system(s) that is necessary to determine compliance with the regulations.

(b) Any authorized representative of the state must have authority to require an owner or operator to conduct monitoring or testing.

(c) Authorized representatives must have the authority to enter any site or premises subject to UST system regulations or in which records relevant to the operation of the UST system(s) are kept, and to copy these records, obtain samples of regulated substances, and inspect or conduct the monitoring or testing of UST system(s).

(d) State programs must have procedures for receipt, evaluation, retention, and investigation of records and reports required of owners or operators and must provide for enforcement of failure to submit these records and reports.

(e)(1) State programs must have inspection procedures to determine, independent of information supplied by regulated persons, compliance with program requirements, and must provide for enforcement of failure to comply with the program requirements. States must maintain a program for systematic inspections of facilities subject to regulations in a manner designed to determine compliance or non-compliance, to verify accuracy of information submitted by owners or operators of regulated USTs, and to verify adequacy of methods used by owners or operators in developing that information.

(2) When inspections are conducted, samples taken, or other information gathered, these procedures must be conducted in a manner (for example, using proper "chain of custody" procedures) that will produce evidence admissible in an enforcement proceeding, or in court.

(f) Public effort in reporting violations must be encouraged and the state enforcement agency(ies) must make available information on reporting procedures. State programs must maintain a program for investigating information obtained from the public about suspected violations of UST program requirements.

(g) The state program must maintain the data collected through inspections and evaluation of records in such a manner that the implementing agency can monitor over time the compliance status of the regulated community. Any compilation, index, or inventory of such facilities and activities shall be made available to EPA upon request.

#### § 281.41 Requirements for enforcement authority.

(a) Any state agency administering a program must have the authority to implement the following remedies for violations of state program requirements:

(1) To restrain immediately and effectively any person by order or by suit in state court from engaging in any unauthorized activity that is endangering or causing damage to public health or the environment;

(2) To sue in courts of competent jurisdiction to enjoin any threatened or continuing violation of any program requirement;

(3) To assess or sue to recover in court civil penalties as follows:

(i) Civil penalties for failure to notify or for submitting false information pursuant to tank notification requirements must be capable of being assessed up to \$5,000 or more per violation.

(ii) Civil penalties for failure to comply with any state requirements or standards for existing or new tank systems must be capable of being assessed for each instance of violation, up to \$5,000 or more for each tank for each day of violation. If the violation is continuous, civil penalties shall be capable of being assessed up to \$5,000 or more for each day of violation.

(b) The burden of proof and degree of knowledge or intent required under state law for establishing violations under paragraph (a)(3) of this section, must be no greater than the burden of proof or degree of knowledge or intent that EPA must provide when it brings an action under Subtitle I of the Resource Conservation and Recovery Act.

(c) A civil penalty assessed, sought, or agreed upon by the state enforcement agency(ies) under paragraph (a)(3) of this section must be appropriate to the violation.

#### § 281.42 Requirements for public participation.

Any state administering a program must provide for public participation in the state enforcement process by providing any one of the following three options:

(a) Authority that allows intervention analogous to Federal Rule 24(a)(2), and assurance by the appropriate state enforcement agency that it will not oppose intervention under the state analogue to Rule 24(a)(2) on the ground that the applicant's interest is adequately represented by the State.

(b) Authority that allows intervention as of right in any civil action to obtain the remedies specified in § 281.41 by any citizen having an interest that is or may be adversely affected; or

(c) Assurance by the appropriate state agency that:

(1) It will provide notice and opportunity for public comment on all proposed settlements of civil enforcement actions (except where immediate action is necessary to adequately protect human health and the environment);

(2) It will investigate and provide responses to citizen complaints about violations; and

(3) It will not oppose citizen intervention when permissive intervention is allowed by statute, rule, or regulation

#### § 281.43 Sharing of information.

(a) States with approved programs must furnish EPA, upon request, any information in state files obtained or used in the administration of the state program. This information includes:

(1) Any information submitted to the state under a claim of confidentiality. The state must submit that claim to EPA when providing such information. Any information obtained from a state and subject to a claim of confidentiality will be treated in accordance with federal regulations in 40 CFR Part 2; and

(2) Any information that is submitted to the state without a claim of confidentiality. EPA may make this information available to the public without further notice.

(b) EPA must furnish to states with approved programs, upon request, any information in EPA files that the state needs to administer its approved state program. Such information includes:

(1) Any information that is submitted to EPA without a claim of confidentiality; and

(2) Any information submitted to EPA under a claim of confidentiality, subject to the conditions in 40 CFR Part 2.

#### Subpart E—Approval Procedures

##### § 281.50 Approval procedures for state programs.

(a) The following procedures are required for all applications, regardless of whether the application is for a partial or complete program, as defined in § 281.12, or for interim or final approval in accordance with § 281.11.

(b) Before submitting an application to EPA for approval of a state program, the state must provide an opportunity for public notice and comment in the development of its underground storage tank program.

(c) When EPA receives a state program application, EPA will examine the application and notify the state whether its application is complete, in accordance with the application components required in § 281.20. The 180-day statutory review period begins only after EPA has determined that a complete application has been received.

(d) The state and EPA may by mutual agreement extend the review period.

(e) After receipt of a complete program application, the Administrator will tentatively determine approval or disapproval of the state program. EPA shall issue public notice of the tentative determination in the Federal Register; it enough of the largest newspapers in the state to attract statewide attention; and to persons on the state agency mailing list and any other persons who the

agency has reason to believe are interested. Notice of the tentative determination must also:

(1) Afford the public 30 days after the notice to comment on the state's application and the Administrator's tentative determination; and

(2) Include a general statement of the areas of concern, if the Administrator indicates the state program may not be approved; and

(3) Note the availability for inspection by the public of the state program application; and

(4) Indicate that a public hearing will be held by EPA no earlier than 30 days after notice of the tentative determination unless insufficient public interest is expressed, at which time the Regional Administrator may cancel the public hearing.

(f) Within 180 days of receipt of a complete state program application, the Administrator must make a final determination whether to approve the state program after review of all public comments. EPA will give notice of its determination in the Federal Register and codify the approved state program. The notice must include a statement of the reasons for this determination and a response to significant comments received.

**§ 281.51 Amendment required at end of interim period.**

(a) State programs that meet the requirements of section 281.11(c) (1) and (2) may be approved for 1 to 3 years from September 23, 1988. States that receive such interim approval must adopt requirements that are no less stringent than the corresponding federal requirements and standards within the timeframes specified under

**§ 281.11(c)(3).**

(b) By the end of the specified time period, a state with interim approval must submit to EPA an amendment to its application that includes all modified and new requirements for any of the elements containing less stringent requirements. Such amended applications must also include a modified program description, an Attorney General's statement and a Memorandum of Agreement that incorporate the amended program requirements, and copies of all applicable state statutes and regulations.

(c) Upon receipt of the application amendment, the Administrator shall follow the same review and approval procedures as required in § 281.50.

(d) If a state fails to submit an amendment within the specified timeframe, the interim approval of the state program expires upon the

applicable date established under § 281.11(c), and the Subtitle I program automatically reverts to EPA.

(e) If a state submits an amendment to the program application within the timeframe specified under § 281.11(c)(3) and the amendment is disapproved after the end of the time period, the interim approval of the state program expires immediately upon disapproval and the Subtitle I program automatically reverts to EPA.

(f) If interim approval of the state program expires, EPA must notify the regulated community and the public of the re-establishment of the federal program through a notice in the Federal Register.

**§ 281.52 Revision of approved state programs.**

(a) Either EPA or the approved state may initiate program revision. Program revision may be necessary when the controlling federal or state statutory or regulatory authority is changed or when responsibility for the state program is shifted to a new agency or agencies. The state must inform EPA of any proposed modifications to its basic statutory or regulatory authority or change in division of responsibility among state agencies. EPA will determine in each case whether a revision of the approved program is required.

(b) Whenever the Administrator has reason to believe that circumstances have changed with respect to an approved state program or the federal program, the Administrator may request, and the state must provide, a revised application as prescribed by EPA.

(c) The Administrator will approve or disapprove program revisions based on the requirements of this Part and of Subtitle I pursuant to the procedures under this section, or under section 281.50 if EPA has reason to believe the proposed revision will receive significant negative comment from the public.

(1) The Administrator must issue public notice of planned approval or disapproval of a state program revision in the Federal Register; in enough of the largest newspapers in the state to attract statewide attention; and by mailing to persons on the state agency mailing list and to any other persons who the agency has reason to believe are interested. The public notice must summarize the state program revision, indicate whether EPA intends to approve or disapprove the revision, and provide for an opportunity to comment for a period of 30 days.

(2) The Administrator's decision on the proposed revision becomes effective 60 days after the date of publication in

the Federal Register in accordance with paragraph (c)(1) of this section, unless significant negative comment opposing the proposed revision is received during the comment period. If significant negative comment is received, EPA must notify the state and within 60 days after the date of publication, publish in the Federal Register either:

(i) A withdrawal of the immediate final decision, which will then be treated as a tentative decision in accordance with the applicable procedures of § 281.50 (e) and (f); or

(ii) A notice that contains a response to significant negative comments and affirms either that the immediate final decision takes effect or reverses the decision.

(d) Revised state programs that receive approval must be codified in the Federal Register.

**Subpart F—Withdrawal of Approval of State Programs**

**§ 281.60 Criteria for withdrawal of approval of state programs.**

(a) The Administrator may withdraw program approval when the Agency determines that a state no longer has adequate regulatory or statutory authority or is not administering and enforcing an approved program in accordance with this part. The state must have adequate capability to administer and enforce the state program. In evaluating whether such capability exists, the Agency will consider whether the state is implementing an adequate enforcement program by evaluating the quality of compliance monitoring and enforcement actions.

(b) Such withdrawal of approval will occur only after the state fails to take appropriate action within a reasonable time, not to exceed 120 days after notice from the Administrator that the state is not administering and enforcing its program in accordance with the requirements of this part.

**§ 281.61 Procedures for withdrawal of approval of state programs.**

(a) The following procedures apply when a state with an approved program voluntarily transfers to EPA those program responsibilities required by federal law.

(1) The state must give EPA notice of the proposed transfer, and submit, at least 90 days before the transfer, a plan for the orderly transfer of all relevant program information necessary for EPA to administer the program.

(2) Within 30 days of receiving the state's transfer plan, EPA must evaluate the plan and identify any additional

information needed by the federal government for program administration.

(3) At least 30 days before the transfer is to occur, EPA must publish notice of the transfer in the Federal Register, in enough of the largest newspapers in the state to attract statewide attention; and to persons on appropriate state mailing lists.

(b) When EPA begins proceedings to determine whether to withdraw approval of a state program (either on its own initiative or in response to a petition from an interested person), withdrawal proceedings must be conducted in accordance with procedures set out in 40 CFR 271.23 (b) and (c), except for § 271.23(b)(8)(iii) to the extent that it deviates from requirements under § 281.60.

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entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.

EPA has conducted an analysis of the impacts of this regulation on small businesses as part of its regulatory impact analysis (RIA) and has concluded that this regulation may have a significant economic impact on some small businesses. EPA examined the economic impacts of financial responsibility requirements on the small business segments of the retail motor fuel marketing industry and on the general industry sectors for which expected annual insurance premium costs are more than 10 percent of before-tax profits.

In the retail motor fuel marketing sector, economic impacts are measured in terms of the percentage of existing outlets surviving 5, 10, and 15 years after the imposition of regulations. Through year 5, 57 percent of existing small-firm-owned outlets would survive if only the technical requirements were imposed. Assuming the imposition of technical and financial responsibility requirements, 55 percent of existing outlets survive, if all small firms can obtain insurance. By year 15, 34 percent of outlets would survive the imposition of technical requirements and 47 percent would survive the imposition of both technical and financial responsibility requirements, if all small firms can obtain insurance. Thus, by year 15, the imposition of the financial responsibility requirements has a beneficial impact on the survival of small-firm-owned outlets.

In the general industry sector, EPA found that the costs of insurance premiums represent 10 percent or more of the before-tax profits of firms that have less than \$1 million in assets in 4 of the 65 four-digit SIC codes examined. The impact of these premium costs on the pre-tax returns on assets for these firms ranged between 0.1 and 0.9 percent.

The RIA does not examine the possibility that all corrective action costs and third-party liability awards might be paid by state funds financed by taxes on gasoline. Such funds would minimize economic impacts on small businesses and transfer the costs of these financial responsibility requirements to the consumers of motor fuel.

### C. Paperwork Reduction Act

The information collection requirements in this rule have been

approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and have been assigned OMB control number 2050-0066. The reporting and recordkeeping burden on the public for this collection is estimated at 65,707 hours for the 265,534 respondents, with an average of 0.1 hours per response. These burden estimates include all aspects of the collection effort and may include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information, etc.

If you wish to submit comments regarding any aspect of this collection of information, including suggestions for reducing the burden, or if you would like a copy of the information collection request (please reference ICR #1359), contact Rick Westland, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460 (202-382-2745); and Marcus Peacock, Office of Management and Budget, Washington, DC 20503.

### List of Subjects in 40 CFR Parts 280 and 281

Administrative practice and procedure, Environmental protection, Hazardous materials insurance, Oil pollution, Penalties, Petroleum, Reporting and recordkeeping requirements, State program approval, Surety bonds, Underground storage tanks, Water pollution control.

Lee M. Thomas,

Administrator.

Dated: October 14, 1988.

For the reasons set out in the preamble, Parts 280 and 281 of Title 40 of the Code of Federal Regulations are amended as follows:

### PART 280—TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENTS FOR OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS

1. The authority citation for Part 280 continues to read as follows:

Authority: 42 U.S.C. 6912, 6991, 6991(a), 6991(b), 6991(c), 6991(d), 6991(e), 6991(f), and 6991(h).

2. Appendices I through III following Subpart G are designated as Appendices I through III to Part 280.

3. 40 CFR Part 280 is amended to add a new Subpart H as follows:

### Subpart H—Financial Responsibility

Sec.

- 280.90 Applicability.
  - 280.91 Compliance dates.
  - 280.92 Definition of terms.
  - 280.93 Amount and scope of required financial responsibility.
  - 280.94 Allowable mechanisms and combinations of mechanisms.
  - 280.95 Financial test of self-insurance.
  - 280.96 Guarantee.
  - 280.97 Insurance and risk retention group coverage.
  - 280.98 Surety bond.
  - 280.99 Letter of credit.
  - 280.100 Use of state-required mechanism.
  - 280.101 State fund or other state assurance.
  - 280.102 Trust fund.
  - 280.103 Standby trust fund.
  - 280.104 Substitution of financial assurance mechanisms by owner or operator.
  - 280.105 Cancellation or nonrenewal by a provider of financial assurance.
  - 280.106 Reporting by owner or operator.
  - 280.107 Recordkeeping.
  - 280.108 Drawing on financial assurance mechanisms.
  - 280.109 Release from the requirements.
  - 280.110 Bankruptcy or other incapacity of owner or operator or provider of financial assurance.
  - 280.111 Replenishment of guarantees, letters of credit, or surety bonds.
  - 280.112 Suspension of enforcement.
- \* \* \* \* \*

### Subpart H—Financial Responsibility

#### § 280.90 Applicability.

(a) This subpart applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.

(b) Owners and operators of petroleum UST systems are subject to these requirements if they are in operation on or after the date for compliance established in § 280.91.

(c) 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 requirements of this subpart.

(d) The requirements of this subpart do not apply to owners and operators of any UST system described in § 280.10 (b) or (c).

(e) If the owner and operator of a petroleum underground storage tank are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in event of noncompliance. Regardless of which party complies, the date set for compliance at a particular facility is determined by the characteristics of the owner as set forth in § 280.91.



**§ 280.91 Compliance dates.**

Owners of petroleum underground storage tanks are required to comply with the requirements of this subpart by the following dates:

(a) All petroleum marketing firms owning 1,000 or more USTs and all other UST owners that report a tangible net worth of \$20 million or more to the U.S. Securities and Exchange Commission (SEC), Dun and Bradstreet, the Energy Information Administration, or the Rural Electrification Administration; January 24, 1989.

(b) All petroleum marketing firms owning 100-999 USTs; October 26, 1989.

(c) All petroleum marketing firms owning 13-99 USTs at more than one facility; April 26, 1990.

(d) All petroleum UST owners not described in paragraphs (a), (b), or (c) of this section, including all local government entities; October 26, 1990.

**§ 280.92 Definition of terms.**

When used in this subpart, the following terms shall have the meanings given below:

(a) "Accidental release" means any sudden or nonsudden release of petroleum from an underground storage tank that results in a need for corrective action and/or compensation for bodily injury or property damage neither expected nor intended by the tank owner or operator.

(b) "Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

(c) "Controlling interest" means direct ownership of at least 50 percent of the voting stock of another entity.

(d) "Director of the Implementing Agency" means the EPA Regional Administrator, or, in the case of a state with a program approved under section 9004, the Director of the designated state or local agency responsible for carrying out an approved UST program.

(e) "Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) a 10-K report submitted to the SEC;

(2) an annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) annual reports submitted to the Energy Information Administration or the Rural Electrification Administration.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

(f) "Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought,

(1) By EPA or a state to require corrective action or to recover the costs of corrective action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

(g) "Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank.

Note: This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence."

(h) "Owner or operator," when the owner or operator are separate parties, refers to the party that is obtaining or has obtained financial assurances.

(i) "Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

(j) "Petroleum marketing firms" are all firms owning petroleum marketing facilities. Firms owning other types of facilities with USTs as well as petroleum marketing facilities are considered to be petroleum marketing firms.

(k) "Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include corrective action associated with releases from tanks which are covered by the policy.

(l) "Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank through one of the mechanisms listed in §§ 280.95-280.103, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

(m) "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 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.

(n) "Tangible net worth" means the 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.

**§ 280.93 Amount and scope of required financial responsibility.**

(a) Owners or operators of petroleum underground storage tanks must 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 in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum underground storage tanks that are located at petroleum marketing facilities, or that handle an average of more than 10,000 gallons of petroleum per month based on annual throughput for the previous calendar year; \$1 million.

(2) For all other owners or operators of petroleum underground storage tanks; \$500,000.

(b) Owners or operators of petroleum underground storage tanks must 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 in at least the following annual aggregate amounts:

(1) For owners or operators of 1 to 100 petroleum underground storage tanks, \$1 million; and

(2) For owners or operators of 101 or more petroleum underground storage tanks, \$2 million.

(c) For the purposes of paragraphs (b) and (f) of this section, only, "a petroleum underground storage tank" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in paragraph (e) of this section, if the owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for-



(1) Taking corrective action;  
 (2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in paragraphs (a) and (b) of this section.

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds 100, the owner or operator shall demonstrate financial responsibility in the amount of at least \$2 million of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least \$2 million of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

**§ 280.94 Allowable mechanisms and combinations of mechanisms.**

(a) Subject to the limitations of paragraphs (b) and (c) of this section, an owner or operator may use any one or combination of the mechanisms listed in §§ 280.95 through 280.103 to demonstrate financial responsibility under this subpart for one or more underground storage tanks.

(b) An owner or operator may use a guarantee or surety bond to establish financial responsibility only if the Attorney(s) General of the state(s) in

which the underground storage tanks are located has (have) submitted a written statement to the implementing agency that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in that state.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

**§ 280.95 Financial test of self-insurance.**

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 280.93 by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor must meet the criteria of paragraph (b) or (c) of this section based on year-end financial statements for the latest completed fiscal year.

(b)(1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(i) The total of the applicable aggregate amount required by § 280.93, based on the number of underground storage tanks for which a financial test is used to demonstrate financial responsibility to EPA under this section or to a state implementing agency under a state program approved by EPA under 40 CFR Part 281;

(ii) The sum of the corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to EPA under 40 CFR 264.101, 264.143, 264.145, 265.143, 165.145, 264.147, and 265.147 or to a state implementing agency under a state program authorized by EPA under 40 CFR Part 271; and

(iii) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 CFR 144.63 or to a state implementing agency under a state program authorized by EPA under 40 CFR Part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least \$10 million.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in paragraph (d) of this section.

(4) The owner or operator, and/or guarantor, must either:

(i) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Electrification Administration; or

(ii) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4 or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c)(1) The owner or operator, and/or guarantor must meet the financial test requirements of 40 CFR 264.147(f)(1), substituting the appropriate amounts specified in § 280.93 (b)(1) and (b)(2) for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in paragraph (d) of this section.

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Electrification Administration, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(i) He has compared the data that the letter form the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(ii) In connection with that comparison, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under paragraph (b) or (c) of this section, the chief financial officer of the owner or operator, or guarantor, must sign, within 120 days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to

support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

**Letter from Chief Financial Officer**

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance," and/or "guarantee"] to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" and/or "nonsudden accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test or a financial test under an authorized State program by this [insert: "owner or operator," and/or "guarantor"]: [List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a financial test under a State program approved under 40 CFR Part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test or a financial test under a State program authorized under 40 CFR Part 281 by the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22 or the corresponding State requirements.]

A [insert: "financial test," and/or "guarantee"] is also used by this [insert: "owner or operator," or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 CFR Parts 271 and 145:

EPA Regulations	Amount
Closure (§§ 264.143 and 265.143).....	\$ _____
Post-Closure Care (§§ 264.145 and 265.145).....	\$ _____
Liability Coverage (§§ 264.147 and 265.147).....	\$ _____
Corrective Action (§§ 264.101(b)).....	\$ _____
Plugging and Abandonment (§ 144.63).....	\$ _____
Closure.....	\$ _____
Post-Closure Care.....	\$ _____
Liability Coverage.....	\$ _____
Corrective Action.....	\$ _____
Plugging and Abandonment.....	\$ _____
Total.....	\$ _____

This [insert: "owner or operator," or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of paragraph (b) of § 280.95 are

being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of paragraph (c) of § 280.95 are being used to demonstrate compliance with the financial test requirements.]

**Alternative I**

1. Amount of annual UST aggregate coverage being assured by a financial test, and/or guarantee.....\$ \_\_\_\_\_
  2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, and/or guarantee.....\$ \_\_\_\_\_
  3. Sum of lines 1 and 2.....\$ \_\_\_\_\_
  4. Total tangible assets.....\$ \_\_\_\_\_
  5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6].....\$ \_\_\_\_\_
  6. Tangible net worth [subtract line 5 from line 4].....\$ \_\_\_\_\_
- Yes No
7. Is line 6 at least \$10 million?.....
  8. Is line 6 at least 10 times line 3?.....
  9. Have financial statements for the latest fiscal year been filed with the Securities and Exchange Commission?.....
  10. Have financial statements for the latest fiscal year been filed with the Energy Information Administration?.....
  11. Have financial statements for the latest fiscal year been filed with the Rural Electrification Administration?.....
  12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.].....

**Alternative II**

1. Amount of annual UST aggregate coverage being assured by a test, and/or guarantee.....\$ \_\_\_\_\_
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, and/or guarantee.....\$ \_\_\_\_\_
3. Sum of lines 1 and 2.....\$ \_\_\_\_\_
4. Total tangible assets.....\$ \_\_\_\_\_
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6].....\$ \_\_\_\_\_
6. Tangible net worth [subtract line 5 from line 4].....\$ \_\_\_\_\_

**Alternative I—Continued**

7. Total assets in the U.S. [required only if less than 90 percent of assets are located in the U.S.].....\$ \_\_\_\_\_
  8. Is line 6 at least \$10 million?....\$ \_\_\_\_\_
  9. Is line 6 at least 6 times line 3?.....
  10. Are at least 90 percent of assets located in the U.S.? [If "No," complete line 11.].....
  11. Is line 7 at least 6 times line 3?.....
  12. Current assets.....\$ \_\_\_\_\_
  13. Current liabilities.....
  14. Net working capital [subtract line 13 from line 12].....
  15. Is line 14 at least 6 times line 3?.....
  16. Current bond rating of most recent bond issue.....
  17. Name of rating service.....
  18. Date of maturity of bond.....
  19. Have financial statements for the latest fiscal year been filed with the SEC, the Energy Information Administration, or the Rural Electrification Administration?.....
- Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative I and Alternative II complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR Part 280.95(d) as such regulations were constituted on the date shown immediately below.

[Signature]  
[Name]  
[Title]  
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within 150 days of the end of the year for which financial statements have been prepared.

(f) The Director of the implementing agency may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the Director finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of § 280.95(b) or (c) and (d), the owner or operator must obtain

alternate coverage within 30 days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within 150 days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within 30 days of notification by the Director of the implementing agency that he or she no longer meets the requirements of the financial test, the owner or operator must notify the Director of such failure within 10 days.

#### § 280.96 Guarantee.

(a) An owner or operator may satisfy the requirements of § 280.93 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that (i) possesses a controlling interest in the owner or operator; (ii) possesses a controlling interest in a firm described under paragraph (a)(1)(i) of this section; or, (iii) is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or,

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within 120 days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 280.95 based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 280.95(d) and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within 120 days of the end of that financial reporting year the guarantor shall send by certified mail, before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Director of the implementing agency notifies the guarantor that he no longer meets the requirements of the financial test of § 280.95 (b) or (c) and (d), the guarantor must notify the owner or operator within 10 days of receiving such notification from the Director. In both cases, the guarantee will terminate no less than 120 days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 280.110(c).

(c) The guarantee must be worded as follows, except that instructions in

brackets are to be replaced with the relevant information and the brackets deleted:

#### Guarantee

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the state of [name of state], herein referred to as guarantor, to [the state implementing agency] and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

#### Recitals.

(1) Guarantor meets or exceeds the financial test criteria of 40 CFR 280.95 (b) or (c) and (d) and agrees to comply with the requirements for guarantors as specified in 40 CFR 280.96(b).

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22 or the corresponding state requirement, and the name and address of the facility.] This guarantee satisfies 40 CFR Part 280, Subpart H requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to [implementing agency] and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within 60 days after receipt of a notice of cancellation of this guarantee and the [Director of the implementing agency] has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the [Director], shall fund a standby trust fund in accordance with the provisions of 40 CFR 280.108, in an amount not to exceed the coverage limits specified above.

In the event that the [Director] determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with 40 CFR Part 280, Subpart F, the guarantor upon written instructions

from the [Director] shall fund a standby trust in accordance with the provisions of 40 CFR 280.108, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the [Director], shall fund a standby trust in accordance with the provisions of 40 CFR 280.108 to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of 40 CFR 280.95 (b) or (c) and (d), guarantor shall send within 120 days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate 120 days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within 10 days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to 40 CFR Part 280.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of 40 CFR Part 280, Subpart H for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaded to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated

to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 40 CFR 280.93.

(9) Guarantor expressly waives notice of acceptance of this guarantee by [the implementing agency], by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 280.96(c) as such regulations were constituted on the effective date shown immediately below.

Effective date: \_\_\_\_\_  
 [Name of guarantor] \_\_\_\_\_  
 [Authorized signature for guarantor] \_\_\_\_\_  
 [Name of person signing] \_\_\_\_\_  
 [Title of person signing] \_\_\_\_\_  
 Signature of witness or notary: \_\_\_\_\_

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 280.93 must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Director of the implementing agency under § 280.108. This standby trust fund must meet the requirements specified in § 280.103.

**§ 280.97 Insurance and risk retention group coverage.**

(a) An owner or operator may satisfy the requirements of § 290.93 by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (b)(1) of this section, or evidenced by a certificate of insurance worded as specified in paragraph (b)(2) of this section, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

**(1) Endorsement**

Name: [name of each covered location] \_\_\_\_\_  
 Address: [address of each covered location] \_\_\_\_\_  
 Policy Number: \_\_\_\_\_  
 Period of Coverage: [current policy period] \_\_\_\_\_  
 Name of [Insurer or Risk Retention Group]: \_\_\_\_\_  
 Address of [Insurer or Risk Retention Group]: \_\_\_\_\_  
 Name of Insured: \_\_\_\_\_  
 Address of Insured: \_\_\_\_\_

**Endorsement:**

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility.]

for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95-280.102.

c. Whenever requested by [a Director of an implementing agency], the ["Insurer" or "Group"] agrees to furnish to [the Director] a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"] will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured.

[Insert for claims-made policies:

e. The insurance covers claims for any occurrence that commenced during the term of the policy that is discovered and reported to the ["Insurer" or "Group"] within six months of the effective date of the cancellation or termination of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in 40 CFR 280.97(b)(1) and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states"].

[Signature of authorized representative of Insurer or Risk Retention Group] \_\_\_\_\_  
 [Name of person signing] \_\_\_\_\_  
 [Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group] \_\_\_\_\_  
 [Address of Representative] \_\_\_\_\_

**(2) Certificate of Insurance**

Name: [name of each covered location] \_\_\_\_\_  
 Address: [address of each covered location] \_\_\_\_\_  
 Policy Number: \_\_\_\_\_  
 Endorsement (if applicable): \_\_\_\_\_  
 Period of Coverage: [current policy period] \_\_\_\_\_  
 Name of [Insurer or Risk Retention Group]: \_\_\_\_\_  
 Address of [Insurer or Risk Retention Group]: \_\_\_\_\_  
 Name of Insured: \_\_\_\_\_  
 Address of Insured: \_\_\_\_\_

**Certification:**

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility.]

for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations,

indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location), exclusive of legal defense costs. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95-280.102.

c. Whenever requested by [a Director of an implementing agency], the ["Insurer" or "Group"] agrees to furnish to [the Director] a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"] will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured.

[Insert for claims-made policies:

e. The insurance covers claims for any occurrence that commenced during the term of the policy that is discovered and reported to the ["Insurer" or "Group"] within six months of the effective date of the cancellation or other termination of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in 40 CFR 280.97(b)(2) and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states"].

[Signature of authorized representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer or Risk Retention Group]

[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

**§ 280.98 Surety bond.**

(a) An owner or operator may satisfy the requirements of § 280.93 by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest

Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

**Performance Bond**

Date bond executed: \_\_\_\_\_

Period of coverage: \_\_\_\_\_

Principal: [legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation (if applicable): \_\_\_\_\_

Surety(ies): [name(s) and business address(es)]

Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases" "arising from operating the underground storage tank"].

Penal sums of bond:

Per occurrence \$ \_\_\_\_\_

Annual aggregate \$ \_\_\_\_\_

Surety's bond number: \_\_\_\_\_

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to [the implementing agency], in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Subtitle I of the Resource Conservation and Recovery Act (RCRA), as amended, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising

from operating the underground storage tank identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance:

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with 40 CFR Part 280, Subpart F and the Director of the state implementing agency's instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden" or "nonsudden" or "sudden and nonsudden"] accidental releases arising from operating the tank(s) identified above or if the Principal shall provide alternate financial assurance, as specified in 40 CFR Part 280, Subpart H, within 120 days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 40 CFR 280.93.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by [the Director of the implementing agency] that the Principal has failed to ["take corrective action, in accordance with 40 CFR Part 280, Subpart F and the Director's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with 40 CFR Part 280 and the Director's instructions," and/or "third-party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by [the Regional Administrator or the Director] under 40 CFR 280.108.

Upon notification by [the Director] that the Principal has failed to provide alternate financial assurance within 60 days after the date the notice of cancellation is received by the Principal from the Surety(ies) and that [the Director] has determined or suspects that

a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by [the Director] under 40 CFR 280.108.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual aggregate to the penal sum shown on the face of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 40 CFR 280.98(b) as such regulations were constituted on the date this bond was executed.

*Principal*

[Signature(s)]  
[Names(s)]  
[Title(s)]  
[Corporate seal]

*Corporate Surety(ies)*

[Name and address]  
[State of Incorporation: \_\_\_\_\_]  
[Liability limit: \$ \_\_\_\_\_]  
[Signature(s)]  
[Names(s) and title(s)]  
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: \$ \_\_\_\_\_

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 280.93 must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with

instructions from the Director under § 280.108. This standby trust fund must meet the requirements specified in § 280.103.

**§ 280.99 Letter of credit.**

(a) An owner or operator may satisfy the requirements of § 280.93 by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in each state where used and whose letter-of-credit operations are regulated and examined by a federal or state agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**Irrevocable Standby Letter of Credit**

[Name and address of issuing institution]  
[Name and address of Director(s) of state implementing agency(ies)]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. \_\_\_\_\_ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars (\$[insert dollar amount]), available upon presentation [insert, if more than one Director of a state implementing agency is a beneficiary, "by any one of you"] of

(1) your sight draft, bearing reference to this letter of credit, No. \_\_\_\_\_, and  
(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of Subtitle I of the Resource Conservation and Recovery Act of 1976, as amended."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] \$[insert dollar amount] per occurrence and [in words] \$[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

- (a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;
- (b) Bodily injury to an employee of [insert owner or operator] arising from, and in the

course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 40 CFR 280.93.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by [owner or operator], as shown on the signed return receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 40 CFR 280.99(b) as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]  
[Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 280.93 must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Director of the implementing agency will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Director under § 280.108. This standby trust fund must meet the requirements specified in § 280.103.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit



must provide that credit be automatically renewed for the same term as the original term, unless, at least 120 days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of credit, the 120 days will begin on the date when the owner or operator receives the notice, as evidenced by the return receipt.

**§ 280.100 Use of state-required mechanism.**

(a) For underground storage tanks located in a state that does not have an approved program, and where the state requires owners or operators of underground storage tanks to demonstrate financial responsibility for taking corrective action and/or for compensating third parties for bodily injury and property damage, an owner or operator may use a state-required financial mechanism to meet the requirements of § 280.93 if the Regional Administrator determines that the state mechanism is at least equivalent to the financial mechanisms specified in this subpart.

(b) The Regional Administrator will evaluate the equivalency of a state-required mechanism principally in terms of: certainty of the availability of funds for taking corrective action and/or for compensating third parties; the amount of funds that will be made available; and the types of costs covered. The Regional Administrator may also consider other factors as is necessary.

(c) The state, an owner or operator, or any other interested party may submit to the Regional Administrator a written petition requesting that one or more of the state-required mechanisms be considered acceptable for meeting the requirements of § 280.93. The submission must include copies of the appropriate state statutory and regulatory requirements and must show the amount of funds for corrective action and/or for compensating third parties assured by the mechanism(s). The Regional Administrator may require the petitioner to submit additional information as is deemed necessary to make this determination.

(d) Any petition under this section may be submitted on behalf of all of the state's underground storage tank owners and operators.

(e) The Regional Administrator will notify the petitioner of his determination regarding the mechanism's acceptability in lieu of financial mechanisms specified in this subpart. Pending this determination, the owners and operators using such mechanisms will be deemed

to be in compliance with the requirements of § 280.93 for underground storage tanks located in the state for the amounts and types of costs covered by such mechanisms.

**§ 280.101 State fund or other state assurance.**

(a) An owner or operator may satisfy the requirements of § 280.93 for underground storage tanks located in a state, where EPA is administering the requirements of this subpart, which assures that monies will be available from a state fund or state assurance program to cover costs up to the limits specified in § 280.93 or otherwise assures that such costs will be paid if the Regional Administrator determines that the state's assurance is at least equivalent to the financial mechanisms specified in this subpart.

(b) The Regional Administrator will evaluate the equivalency of a state fund or other state assurance principally in terms of: Certainty of the availability of funds for taking corrective action and/or for compensating third parties; the amount of funds that will be made available; and the types of costs covered. The Regional Administrator may also consider other factors as is necessary.

(c) The state must submit to the Regional Administrator a description of the state fund or other state assurance to be supplied as financial assurance, along with a list of the classes of underground storage tanks to which the funds may be applied. The Regional Administrator may require the state to submit additional information as is deemed necessary to make a determination regarding the acceptability of the state fund or other state assurance. Pending the determination by the Regional Administrator, the owner or operator of a covered class of USTs will be deemed to be in compliance with the requirements of § 280.93 for the amounts and types of costs covered by the state fund or other state assurance.

(d) The Regional Administrator will notify the state of his determination regarding the acceptability of the state's fund or other assurance in lieu of financial mechanisms specified in this subpart. Within 60 days after the Regional Administrator notifies a state that a state fund or other state assurance is acceptable, the state must provide to each owner or operator for which it is assuming financial responsibility a letter or certificate describing the nature of the state's assumption of responsibility. The letter or certificate from the state must include, or have attached to it, the

following information: the facility's name and address and the amount of funds for corrective action and/or for compensating third parties that is assured by the state. The owner or operator must maintain this letter or certificate on file as proof of financial responsibility in accordance with § 280.107(b)(5).

**§ 280.102 Trust fund.**

(a) An owner or operator may satisfy the requirements of § 280.93 by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 280.103(b)(1), and must be accompanied by a formal certificate of acknowledgement as specified in § 280.103(b)(2).

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage as used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Director of the implementing agency for release of the excess.

(e) If other financial assurance as specified in this subpart is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Director of the implementing agency for release of the excess.

(f) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (d) or (e) of this section, the Director of the implementing agency must instruct the trustee to release to the owner or operator such funds as the Director specifies in writing.

**§ 280.103 Standby trust fund.**

(a) An owner or operator using any one of the mechanisms authorized by §§ 280.96, 280.98, or 280.99 must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal agency or an agency of the state in which the fund is established.

(b)(1) The standby trust agreement must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

#### Trust Agreement

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "Incorporated in the state of \_\_\_\_\_" or "a national bank"], the "Trustee."

[Whereas, the United States Environmental Protection Agency, "EPA," an agency of the United States Government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank (This paragraph is only applicable to the standby trust agreement.);]

[Whereas, the Grantor has elected to establish [insert either "a guarantee," "surety bond," or "letter of credit"] to provide all or part of such financial assurance for the underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.);]

[Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

#### Section 1. Definitions

As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

#### Section 2. Identification of the Financial Assurance Mechanism.

This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.);]

#### Section 3. Establishment of Fund.

The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of [implementing agency]. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to [the Director of the

implementing agency's] instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by [the state implementing agency].

#### Section 4. Payment for ["Corrective Action" and/or Third-Party Liability Claims"].

The Trustee shall make payments from the Fund as [the Director of the implementing agency] shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of 40 CFR 280.93.

The Trustee shall reimburse the Grantor, or other persons as specified by [the Director], from the Fund for corrective action expenditures and/or third-party liability claims in such amounts as [the Director] shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as [the Director] specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

#### Section 5. Payments Comprising the Fund

Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

#### Section 6. Trustee Management.

The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in

accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the tanks, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

#### Section 7. Commingling and Investment

The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq. including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

#### Section 8. Express Powers of Trustee

Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with



certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

**Section 9. Taxes and Expenses**

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

**Section 10. Advice of Counsel**

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

**Section 11. Trustee Compensation**

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

**Section 12. Successor Trustee**

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses

incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

**Section 13. Instructions to the Trustee.**

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by [the Director of the implementing agency] to the Trustee shall be in writing, signed by [the Director], and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or [the director] hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or [the Director], except as provided for herein.

**Section 14. Amendment of Agreement**

This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and [the Director of the implementing agency] if the Grantor ceases to exist.

**Section 15. Irrevocability and Termination**

Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and [the Director of the implementing agency], if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

**Section 16. Immunity and Indemnification**

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or [the Director of the implementing agency] issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

**Section 17. Choice of Law**

This Agreement shall be administered, construed, and enforced according to the laws of the state of [insert name of state], or the Comptroller of the Currency in the case of National Association banks.

**Section 18. Interpretation**

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive

headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 280.103(b)(1) as such regulations were constituted on the date written above.

[Signature of Grantor]  
[Name of the Grantor]  
[Title]

Attest:

[Signature of Trustee]  
[Name of the Trustee]  
[Title]  
[Seal]  
[Signature of Witness]  
[Name of the Witness]  
[Title]  
[Seal]

(2) The standby trust agreement must be accompanied by a formal certification of acknowledgment similar to the following. State requirements may differ on the proper content of this acknowledgment.

State of \_\_\_\_\_  
County of \_\_\_\_\_

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]  
[Name of Notary Public]

(c) The Director of the implementing agency will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if the Director determines that no additional corrective action costs or third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

**§ 280.104 Substitution of financial assurance mechanisms by owner or operator.**

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subpart, provided that at all times he maintains an effective financial assurance mechanism or combination of

mechanisms that satisfies the requirements of § 280.93.

(b) After obtaining alternate financial assurance as specified in this subpart, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

**§ 280.105 Cancellation or nonrenewal by a provider of financial assurance.**

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a guarantee, a surety bond, or a letter of credit may not occur until 120 days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(2) Termination of insurance, risk retention group coverage, or state-funded assurance may not occur until 60 days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 280.106, the owner or operator must obtain alternate coverage as specified in this section within 60 days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within 60 days after receipt of the notice of termination, the owner or operator must notify the Director of the implementing agency of such failure and submit:

- (1) The name and address of the provider of financial assurance;
- (2) The effective date of termination; and
- (3) The evidence of the financial assistance mechanism subject to the termination maintained in accordance with § 280.107(b).

**§ 280.106 Reporting by owner or operator.**

(a) An owner or operator must submit the appropriate forms listed in § 280.107(b) documenting current evidence of financial responsibility to the Director of the implementing agency:

- (1) Within 30 days after the owner or operator identifies a release from an underground storage tank required to be reported under § 280.53 or § 280.61;
- (2) If the owner or operator fails to obtain alternate coverage as required by this subpart, within 30 days after the owner or operator receives notice of:
  - (i) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a

provider of financial assurance as a debtor.

(ii) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism.

(iii) Failure of a guarantor to meet the requirements of the financial test.

(iv) Other incapacity of a provider of financial assurance; or

(3) As required by § 280.95(g) and § 280.105(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this part as specified in the new tank notification form when notifying the appropriate state or local agency of the installation of a new underground storage tank under § 280.22.

(c) The Director of the Implementing Agency may require an owner or operator to submit evidence of financial assurance as described in § 280.107(b) or other information relevant to compliance with this subpart at any time.

(The information requirements in this section have been approved by the Office of Management and Budget and assigned OMB control number 2050-0066.)

**§ 280.107 Recordkeeping.**

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subpart for an underground storage tank until released from the requirements of this subpart under § 208.109. An owner or operator must maintain such evidence at the underground storage tank site or the owner's or operator's place of business. Records maintained off-site must be made available upon request of the implementing agency.

(b) An owner or operator must maintain the following types of evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 280.95 through 280.100 or § 280.102 must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than 120 days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement

and copies of any amendments to the agreement.

(4) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(5) An owner or operator covered by a state fund or other state assurance must maintain on file a copy of any evidence of coverage supplied by or required by the State under § 280.101(d).

(6) An owner or operator using an assurance mechanism specified in §§ 280.95 through 280.102 must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**Certification of Financial Responsibility**

[Owner or operator] hereby certifies that it is in compliance with the requirements of Subpart H of 40 CFR Part 280.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Subpart H of 40 CFR Part 280 is [are] as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases."]

[Signature of owner or operator]

[Name of owner or operator]

[Title]

[Date]

[Signature of witness or notary]

[Name of witness or notary]

[Date]

The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

(The information requirements in this section have been approved by the Office of Management and Budget and assigned OMB control number 2050-0065.)

**§ 280.108 Drawing on financial assurance mechanisms.**

(a) The Director of the implementing agency shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Director, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1)(i) The owner or operator fails to establish alternate financial assurance within 60 days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(ii) The Director determines or suspects that a release from an underground storage tank covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Director pursuant to Subparts E or F of a release from an underground storage tank covered by the mechanism; or

(2) The conditions of paragraph (b)(1) or (b)(2)(i) or (ii) of this section are satisfied.

(b) The Director of the implementing agency may draw on a standby trust fund when:

(1) The Director makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted corrective action as required under 40 CFR Part 280, Subpart F; or

(2) The Director has received either:

(i) Certification from the owner or operator and the third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

**Certification of Valid Claim**

The undersigned, as principals and as legal representatives of [insert owner or operator] and [insert name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of \$[ \_\_\_\_\_ ].

[Signatures]

Owner or Operator  
 Attorney for Owner or Operator  
 (Notary) Date

[Signature(s)]

Claimant(s)  
 Attorney(s) for Claimant(s)  
 (Notary) Date

or (ii) A valid final court order establishing a judgment against the owner or operator for bodily injury or property damage caused by an accidental release from an underground storage tank covered by financial assurance under this subpart and the

Director determines that the owner or operator has not satisfied the judgment.

(c) If the Director of the implementing agency determines that the amount of corrective action costs and third-party liability claims eligible for payment under paragraph (b) of this section may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Director shall pay third-party liability claims in the order in which the Director receives certifications under paragraph (b)(2)(i) of this section, and valid court orders under paragraph (b)(2)(ii) of this section.

**§ 280.109 Release from the requirements.**

An owner or operator is no longer required to maintain financial responsibility under this subpart for an underground storage tank after the tank has been properly closed or, if corrective action is required, after corrective action has been completed and the tank has been properly closed as required by 40 CFR Part 280, Subpart G.

**§ 280.110 Bankruptcy or other incapacity of owner or operator or provider of financial assurance.**

(a) Within 10 days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming an owner or operator as debtor, the owner or operator must notify the Director of the implementing agency by certified mail of such commencement and submit the appropriate forms listed in § 280.107(b) documenting current financial responsibility.

(b) Within 10 days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 280.96.

(c) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, letter of credit, or state-required mechanism. The owner or operator must obtain alternate

financial assurance as specified in this subpart within 30 days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within 30 days after such notification, he must notify the Director of the implementing agency.

(d) Within 30 days after receipt of notification that a state fund or other state assurance has become incapable of paying for assured corrective action or third-party compensation costs, the owner or operator must obtain alternate financial assurance.

**§ 280.111 Replenishment of guarantees, letters of credit, or surety bonds.**

(a) If at any time after a standby trust is funded upon the instruction of the Director of the implementing agency with funds drawn from a guarantee, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required, or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 280.93 of this subpart. If a combination of mechanisms was used to provide the assurance funds which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

**§ 280.112 Suspension of enforcement. [Reserved]**

**PART 281—APPROVAL OF STATE UNDERGROUND STORAGE TANK PROGRAMS**

4. The authority citation for Part 281 continues to read as follows:

Authority: Secs. 2002, 9004, 9005, 9006 of the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6912, 6991 (c), (d), (e)).

5. 40 CFR Part 281 is amended to add § 281.37 as follows:

**§ 281.37 Financial responsibility for UST systems containing petroleum.**

(a) In order to be considered no less stringent than the federal requirements for financial responsibility for UST systems containing petroleum, the state requirements for financial responsibility

for petroleum UST systems must ensure that:

(1) Owners and operators have \$1 million per occurrence for corrective action and third-party claims in a timely manner to protect human health and the environment;

(2) Owners and operators not engaged in petroleum production, refining, and marketing and who handle a throughput of 10,000 gallons of petroleum per month or less have \$500,000 per occurrence for corrective action and third-party claims in a timely manner to protect human health and the environment;

(3) Owners and operators of 1 to 100 petroleum USTs must have an annual aggregate of \$1 million; and

(4) Owners and operators of 101 or more petroleum USTs must have an annual aggregate of \$2 million.

(b) Phase-in of requirements. Financial responsibility requirements for petroleum UST systems must, at a minimum, be scheduled to be applied at all UST systems on an orderly schedule that completes a phase-in of the financial responsibility requirements within 18 months after the effective date of the federal regulations.

(c) States may allow the use of a wide variety of financial assurance mechanisms to meet this requirement. Each financial mechanism must meet the following criteria in order to be no less stringent than the federal requirements. The mechanism must: Be

valid and enforceable; be issued by a provider that is qualified or licensed in the state; not permit cancellation without allowing the state to draw funds; ensure that funds will only and directly be used for corrective action and third party liability costs; and require that the provider notify the owner or operator of any circumstances that would impair or suspend coverage.

(d) States must require owners and operators to maintain records that demonstrate compliance with the state financial responsibility requirements, and these records must be made readily available when requested by the implementing agency.

[FR Doc. 88-24395 Filed 10-25-88; 8:45 am]

BILLING CODE 6560-50-M

Appendix D

List of 135 potential abandoned  
or unreported USTs identified  
by AEHD Environmental  
Services staff.

# CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE

April 1, 1987

REF. NO. \_\_\_\_\_

TO: File

FROM: <sup>CEM</sup> Curt Montman, Supervisor, Insect and Rodent Control  
Section, Environmental Health Department

SUBJECT: POSSIBLE ORPHAN UST

The following facilities were not listed on the notification forms for underground storage tanks received from the Environmental Improvement Division. A majority of these appear to be converted gasoline stations and it is unknown if tanks are still in the ground. Further investigation is needed at each of these sites to determine if there are buried tanks and if they were abandoned correctly. Some facilities are operating or recently constructed gas stations for which there is no form.

1. 9700 Second - Big Chief Truck Terminal
2. 5522 Second - Rio Valley Auto Center
3. 4632 Second - Yuma Automotive
4. 3610 Second - Truck Lot
5. 2345 Second - McNary Lumber
6. 2500 San Mateo - Tint Masters
7. 9331 San Mateo - Old Station
8. 3621 San Mateo - Albuquerque Tire
9. 1103 San Mateo - Old Station
10. 802 San Mateo - Atlas Transmission
11. 734 San Mateo - Talaveras Automotive
12. 807 San Mateo - Bentley's Auto Repair
13. 901 San Mateo - Toomey's Auto Repair
14. 1113 San Mateo - The Eatery Informal Dining
15. 3312 Stanford - S & J Services
16. 400 Louisiana, SE - Old Station
17. 1401 Carlisle, NE - Gas Station
18. 1022 Carlisle - Reliable Auto Shop
19. 1200 Carlisle - Evans Auto Service

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20. 6649 Coors SW - Jerry's Conoco
21. Coors SW - Bell Gas Station
22. Central & Rhode Island - Fair & Square
23. 7800 Central, SE - Fulton Motors
24. 7519 Central, NE - City Auto Sales
25. 6700 Central, SE - K & D Budget Windshields
26. 6417 Central, NE - Car Village
27. Central & San Pedro - Joe Blythe Truck & Van
28. 5823 Central, NE - Riggins Auto center
29. Central & Madeira - Old I & M Building
30. 3611 Central, NE - JMG Motor
31. Central & Tijeras, NW - Art's Transmissions
32. 1720 Central, SW - El Paso Motel
33. Central & Rio Grande, NW - Vacant
34. 2403 Central, NW - Meinicke Mufflers
35. 5927 Central, SW - Whiting Brothers
36. 6102 Central, SW - Chevron
37. 7601 Central, NW - Gaede's Auto Service
38. 9722 Central, SW - Conoco
39. 1314 Gibson, SE - Isshin Karate Club
40. Crest & Truman - Old Circle K
41. 5101 Gibson - ACR Professional Body Work
42. 6121 Gibson - Old Gas Station - Starter Shop
43. 2503 Rio Grande, NW - Now Offices
44. 1527 Fourth Street - Allsup's
45. 2020 Fourth Street - Old Gas Station
46. 2200 Fourth Street - Guaranteed Auto Repair
47. 3417 Fourth Street - Stewarts Motors
48. 3926 Fourth Street - Big Q Auto Sales
49. 4201 Fourth Street - Wayne's Automotive
50. 4101 Fourth Street - The Tire Mart
51. 9200 Fourth Street - L & R Service Station
52. 9311 Fourth Street - Gas Mart
53. Fourth & Golden Meadow - Circle K

54. 10463 Fourth Street - Old Gas Station
55. 3723 Fourth Street - Station at Bakery Warehouse
56. 3025 Fourth Street - Sef's Brake & Alignment
57. 1305 Wyoming, NE - Old Gas Station
58. 1358 Wyoming, NE - Old Gas Station
59. Wyoming & Constitution - No Listing
60. Southeast Corner Wyoming & Menaul - Old  
Station
61. Wyoming & Constitution Place - Albuquerque  
Ambulance
62. 1300 block Yale - Old Dress Shop
63. 2019 Eubank, NE - Shannon Euro Motor Car
64. 1836 Eubank, NE - Mckinney Motor Company
65. Eubank & Menaul - Old Service Station
66. 2320 Eubank - Freezer Beef
67. 9433 Lomas, NE - Closed Gas Station
68. 7101 Lomas - Charles Martin Imports
69. 5611 Lomas - Southwest Motor
70. 4500 block Lomas - American Car Stereo
71. 4500 block Lomas - Enchantment Auto Sales
72. 4500 block Lomas - J J Auto Service
73. Lomas & Monte Vista - B & P Car Cleaning
74. Lomas & Buena Vista - 7-Eleven
75. 605 Lomas - Ugly Duckling Rent A Car
76. 427 Lomas - Perfection Crafts
77. 401 Lomas - Tom's Motor
78. Lomas & Broadway, Southeast Corner - Service  
Station
79. Fifteenth & Lomas - Circle K
80. Chelwood & Candelaria - 7-Eleven
81. Candelaria & Morris - Shell Gas Station
82. Candelaria & Eubank - New Gas Station (Being  
Built)
83. Candelaria & Carlisle - Budget Rent A Car



84. Candelaria & Princeton - Suspension Services  
Inc.
85. 12830 Central, SE - Shell Service Station
86. 10605 Central - New Mexico Car Audio
87. 10401 Central - Anton's Auto Haus
88. 9501 Central - Fast Gas Station
89. Central & General Chennault - Moriarity  
Fertilizer & Feed
90. 9200 Central - Airline Auto
91. 8508 Central - Tune up Masters
92. Mountain & Edith - New Construction
93. 1905 Mountain - Keeberger Company
94. 2021 Mountain - Blueher Lumber Company
95. Menaul & Second - T C B Auto Sales
96. 2001 Menaul - New Circle K
97. Menaul & Princeton - New Shell Station
98. 3923 Menaul - Jack Vaughn's Used Cars
99. 6125 Montgomery - Shamrock
100. Montgomery & Louisiana - Old Gas Station
101. 3701 Morris - J V C Transmissions
102. Menaul & Sixth - Dr. Pepper Bottling Company
103. 3640 Morris - Auto Service
104. 4825 Jefferson - Chavez Concrete & Escavation
105. 5801 Maplewood, SW - Clearwater Construction
106. 307 Isleta - Old Gas Station
107. 430 Isleta - Body Shop
108. 1601 Isleta - Used Car Dealership
109. 3000 Isleta - Old Gas Station
110. 3201 Isleta - Old Gas Station
111. 3401 Isleta - Plateau Station
112. 3627 Isleta - Bob's Burgers

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- 113. 3900 Isleta - Atex Oil Company
- 114. Isleta & Mayflower - Old Grocery Store
- 115. 7026 Isleta - Val's Automotive
- 116. Isleta & Marcellino - Old Fina Station
- 117. 3316 Coors, SW - Flora Plants & Pots
- 118. Southeast Corner of Bridge & Coors
- 119. 514 Coors, SW - Plateau
  
- 120. 2325 Alamo, SE - Alamo Rent A Car
- 121. Alameda & Fourth - Circle K
- 122. 1125 Alameda - Allsup's
- 123. 988 Alameda - Quanz Motor Car Company
- 124. Bridge & La Vega - Circle K
- 125. 1322 Bridge, SW - Sparkle Car Wash
- 126. 1700 Bridge, SW - Roman Service Center
- 127. 1701 Bridge, SW - Senor Cafe
  
- 128. 708 Bell - United Steel Fabricating
- 129. 1605 Broadway - Old Gas Station
- 130. Broadway & Trumbull - Old Gas Station
- 131. Broadway & Bell - Old Gas Station
- 132. 1212 Broadway - Old Gas Station
- 133. Broadway & Lewis - Old Gas Station
- 134. 505 Murray Road - Precast Concrete
- 135. Coors & Rio Vista - Pump & Save

CM/ip  
cc: ✓ File  
2551V