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## Groundwater Contamination

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# THE 1984 RCRA AMENDMENTS: GROUNDWATER CONTAMINATION FROM UNDERGROUND STORAGE TANKS

By Kevin B. Smith

There [is] a growing belief that the next great crisis we may face in this Nation is a water crisis, and that it may be more difficult to solve than the energy crisis we have been struggling with over the past decade.<sup>1</sup>

## I. INTRODUCTION

Leaking underground storage tanks (LUSTs) have become a nationally recognized problem in just the past few years. Of the estimated ten million underground tanks in operation nationwide to store petroleum products, chemical substances, and other hazardous wastes, as many as 100,000 are suspected of leaking.<sup>2</sup> An additional 350,000 underground tanks will reportedly begin leaking within the next five years and potentially up to 75 percent in the next ten years.<sup>3</sup> While petroleum products such as gasoline are commonly thought harmless due to their everyday use, they actually contain up to 1,200 compounds including: ethylene dibromide/ethylene dichloride, benzene, toluene, and xylene which are known carcinogens.<sup>4</sup> This belief is further compounded by the common myth that groundwater is an unlimited resource which has the ability to "purify itself."<sup>5</sup> Perhaps because it cannot be seen, this resource has largely been taken for granted.<sup>6</sup>

In March 1980, the Nassau County, New York Department of Health discovered a gasoline leak, caused by defective storage tanks, had occurred at a retail service station.<sup>7</sup> As a result of the contamination four families located on the same street had to be evacuated. The Sun Oil Company paid for the lodging and living expenses for the families dislocated. Air samples taken from the homes found significantly high hydrocarbon levels. A more recent example of similar contamination is provided two miles south of Madison, Virginia. The State Water Control Board has required Exxon to pay for a 11,000 foot extension of the Madison water service to residents and a business where a well was polluted with petroleum products. A leaking gasoline

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<sup>1</sup>Review of Ground Water Contamination and Depletion Problems in the Northwest; Hearings Before the Subcomm. on the Environment, Energy, and Natural Resources of the House Committee on Government Operations, 98th Cong., 1st Sess. 2 (1983) [hereinafter cited as Hearings.]

<sup>2</sup>Lust in the Dust, 5 Resources 4 (1985).

<sup>3</sup>130 Cong. Rec. § 9164 (1984) (statement of Sen. Durenberger, sponsor of the RCRA Amendment creating the LUST program).

<sup>4</sup>Id.

<sup>5</sup>Id., at 8.

<sup>6</sup>A Host of Pollutants Threaten Drinking Water From Underground, Nat'l J. 1353 (1980).

<sup>7</sup>Novick v. Sun Oil Co. of Pa., 103 A.2d 800, 477 N.Y.S.2d 678 (1984).

storage tank at a defunct Exxon station is the suspected cause of contamination of the well.<sup>8</sup>

The incidents reported above are not unique. Similar occurrences are being seen in increasing numbers around the nation. All across the country LUSTs are releasing their toxic contents into the air and water of unsuspecting communities. This paper will briefly discuss the LUST problem and the federal approach to the situation under the Resource and Conservation and Recovery Act<sup>9</sup> developed to address the situation. The paper concludes that the national and state policies are inadequately addressing the growing problem of groundwater pollution from underground petroleum storage tanks.

## II. SCOPE OF THE PROBLEM

The United States Environmental Protection Agency (EPA) has stated that "leaking storage tanks may be causing the most serious risks to human health and the environment"<sup>10</sup> and has targeted this problem as one of three major areas for future research.<sup>11</sup> These leaks pose a serious health hazard to the population and environmental threat to the nation's groundwater.

According to the EPA, only one gallon per day leaking into an underground aquifer is sufficient to pollute the water source of a community of 50,000 persons to a level of 100 ppb. A leak of two drops per second from an underground tank will release 1.2 gallons per day or 36 gallons per month.<sup>12</sup> The contamination problem is further exacerbated by the overpumping of groundwater in many areas, which can cause the intrusion of natural salt water or increase the concentration and movement of contaminants.<sup>13</sup> Restoration after contamination is often complex and expensive. In the case of petroleum leaks, recovery operations are typically only 40-60 percent effective at best.<sup>14</sup> Thus, the vulnerability of groundwater to pollution coupled with our dependence on it for our drinking, agriculture and industry, necessitates the creation of a strong, uniform policy to address the contamination problem.

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<sup>8</sup>Exxon Will Build Water Line to Replace Contaminated Well, 16 Water News, May 1985 at 3.

<sup>9</sup>Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-87. (1982).

<sup>10</sup>EPA Ground Water Protection Strategy (1984), app. 2, Review of Ground Water Contamination and Depletion Problems in the Northwest: Hearings Before the Subcomm. on the Environment, Energy, and Natural Resources of the House Committee on Government Operations, 98th Cong., 1st Sess. (1983) [hereinafter cited as EPA Strategy].

<sup>11</sup>Id., at 18.

<sup>12</sup>120 Cong. Rec. § 9165 (1985).

<sup>13</sup>Review of Ground Water Protection Strategy Recently Proposed by the Environmental Protection Agency: Hearings before the Subcomm. on the Environment, Energy and Natural Resources of the House Committee on Government Operations, 98th Cong., 2d Sess. 2 (1984).

<sup>14</sup>EPA Strategy, supra note 10, at 11.

Several factors, however, have made development of such a policy difficult. One of the main problems is the lack of exact data as to how many tanks there are or how many are leaking. Groundwater pollution has been discovered in all sections of the country and in virtually every state.<sup>15</sup> Moreover, a study by the EPA of public water supplies drawn from groundwater found man-made contamination in about one-third of all systems.<sup>16</sup>

Serious limitations on the mapping and monitoring of the groundwater aquifers makes it impossible to know precisely how much contamination has already occurred. Estimates range from one to two percent. It is known, however, that there are millions of potential sources of contamination including one and one-half to two million underground storage tanks.<sup>17</sup> About 40 percent of the more than one million steel tanks now in the ground are owned by gasoline stations, and approximately 40 percent of these belong to the major oil companies. The remaining 60 percent belong to small oil companies, industries and individual station owners.<sup>18</sup>

Finally, a key step in the process will be to develop a better understanding of the cause of leaks and develop the solutions. Generally, the life expectancy of an underground storage tank depends on: corrosion, poor installation, and poor operation or management practices.<sup>19</sup> For example in Virginia, corrosion is responsible for leaks in 90 percent of the documented cases of LUSTs.<sup>20</sup> Leak detection strategies provide the most common form of groundwater protection. These technologies include: leak detection technology; use of non-metallic materials for tank construction; and secondary containment devices and overfill protection systems.<sup>21</sup>

Inventory control is the most common leak detection method used. However, because tanks often leak at a slow rate, this method is not very reliable. More reliable, albeit more expensive, are sophisticated leak monitors which have permitted

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<sup>15</sup>H.R. Rep. No. 98-1136, 98th Cong., 2d Sess. 2-3 (1984) [hereinafter cited as A Quest of a National Policy]. Contamination problems have been found in at least 34 and possibly as many as 40 states. Id.

<sup>16</sup>EPA Strategy, supra note 10, at 11.

<sup>17</sup>A Quest for a National Policy, supra note 15, at 4. An unfortunate example of the problem posed by non-petroleum substances is presented by the situation in the "Silicon Valley" region of Northern California. Since the problem was first discovered four years ago, more than 120 leaking underground tanks have been confirmed and the water supplies for more than 50,000 people have been threatened. The majority of the leaking tanks are from the booming semiconductor industry which uses solvents to clean computer chips. The contamination is a byproduct of what is usually thought of as a clean industry. Toxic Contamination from California Electronics Industry Proves Costly to Clean Up, [Current Developments] Env't Rep. (BNA) 972 (October 12, 1984).

<sup>18</sup>EPA Strategy, supra note 10, at 15.

<sup>19</sup>Note, Leaking Underground Storage Tanks: Buried But Not Forgotten, 1 Hofstra Env't'l L. Dig. 18 (1984).

<sup>20</sup>State to Begin Underground Storage Tank Program, 16 Water News, October 1985 at 1,2.

<sup>21</sup>Note, supra note 19, at 18.

tank owners to take corrective action before the harm occurs.<sup>22</sup> Leak prevention strategy has been particularly effective in providing methods for slowing and, in some cases, halting the corrosion process.

A number of new technologies and treatment methods are also making groundwater cleanup possible. Often, remedial methods are less expensive for a community than developing a new drinking water source.<sup>23</sup> The two general techniques which have been most frequently employed are containment and treatment. These can be used either singly or in combination. The cost and effectiveness of these techniques depend on factors such as the local geology, and the type and extent of the contamination. In general, they work best when the size of the polluted area is small.<sup>24</sup>

All of the above mentioned technologies, however, are expensive and the long-term effectiveness of many of these measures have not been determined.<sup>25</sup> Perhaps the only way to justify these expenses is to weigh them against the costs imposed by the leaks. Leaks are not the only detriments to society, they are not good business. Valuable products are lost, public relations suffer, and, more importantly, the number of cases in which companies are being forced to compensate victims of underground leaks is rapidly increasing.<sup>26</sup>

Fortunately, as understanding of the causes of leaks has expanded, so have technological remedies to the problem. Public leaders, however, are rapidly becoming aware of the extreme expense and technical difficulties involved in treating and preventing groundwater pollution. Unlike surface water, groundwater does not benefit from the natural cleansing mechanisms of aeration, biological activity, rapid dilution and sunlight. Consequently, it is best that we develop policies and prevention strategies to deal with pollution from underground tanks before the less effective remedial measures are required.<sup>27</sup>

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<sup>22</sup>Id.

<sup>23</sup>Contamination Problems Will be Solved Without New Laws, State Officials Are Told, [Current Developments] Env't Rep. (BNA) 1777, (February 22, 1985) [hereinafter cited as Contamination Problems Solved].

<sup>24</sup>T. Henderson, J. Trauberman & T. Gallagher, Groundwater: Strategies for State Action 19 (1984) [hereinafter cited as Strategies for State Action]. Containment attempts to retard the spread of contaminant plume in an aquifer through subsurface walls and drains; pumping wells to draw in contaminants, surface capping of hazardous sites to prevent washing of additional contaminants into the groundwater; and pumping water out from behind the contaminated area and back into the ground in front of it. The second technique, treatment, usually involves pumping the contaminated water from the aquifer and running it through a treatment system and reinjecting it or discharging it into surface waters. Some contaminants can also be removed in place by using chemical or bacterial treatment and air stripping at the well head can remove volatile organic compounds which may account for 80 percent of the contamination. Id.

<sup>25</sup>Id., at 21; Contamination Problems Solved, supra note 23.

<sup>26</sup>Note, supra note 19, at 18.

<sup>27</sup>Strategies for State Action, supra note 24, at 19.

### III. FEDERAL APPROACH

Preventing groundwater pollution is generally more effective and, in the long term, less expensive than remedial measures. The nation's predicament with LUSTs requires a stringent national and state policy to properly safeguard the public health and environment. A key concern for those who work in this area has been the lack of a comprehensive, effective national policy to deal with the problems of groundwater pollution.<sup>28</sup> Although parts of many federal, state and local programs deal peripherally with matters relating to groundwater protection, there have been no federal, and few, if any, state regulations dealing specifically and comprehensively with the contamination of groundwater.<sup>29</sup> Nor has there been any effective coordinating mechanism to marshal the combined resources of the federal, state and local governments and the private sector to deal with the unique problems in addressing groundwater contamination.<sup>30</sup> Rather, there has been a patchwork of laws, a condition which still remains with regard to the entire resource.

Although the different functional areas of water are interrelated aspects of water resource management, applicable law has tended to be drafted independently in each case.<sup>31</sup> Water policy development has, in fact, generally occurred in a crisis situation when the resolution of a pressing but narrowly defined problem was the main issue. In the 1970's, national environmental concerns focused primarily on the natural resources and pollutants one could see or smell. Surface water and air quality and specific types of obvious contaminants, such as hazardous wastes sites, were of primary concern.<sup>32</sup> People rarely concerned themselves with groundwater. Hidden from view, it commanded little attention and very little was really understood regarding its pollution.<sup>33</sup>

The prior Federal statutes, considered by many as inadequate attempts to deal with the complexities of groundwater problems, came under attack for only dealing peripherally with the problem--dealing explicitly with certain situations but leaving others ill-addressed. There are at least nine (possibly as many as sixteen) federal statutory programs that relate in some way to groundwater;<sup>34</sup> however, they were not designed to deal comprehensively or coherently with groundwater contamination. Of

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<sup>28</sup>Horne, Groundwater Policy: A Patchwork of Protection, 24 Env't 6 (1982).

<sup>29</sup>A Quest for a National Policy, supra note 15, at 5.

<sup>30</sup>Hearings, supra note 1, at 3.

<sup>31</sup>Grad, Treatise on Environmental Law Ch.3 § 3.05 at 3-424 (1985).

<sup>32</sup>Cox, Water Law Primer 109 (1982).

<sup>33</sup>EPA Strategy, supra note 10, at 2.

<sup>34</sup>These statutes include: Clean Water Act, 33 U.S.C. §§ 1251-1376 (1982); Safe Drinking Water Act, 42 U.S.C. §§ 300F-300J-10 (1982); Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-98 (1982); Comprehensive Environmental Response, Cooperation, & Liability Act, 42 U.S.C. §§ 9101-9657 (1982); Toxic Substance Control Act, 15 U.S.C. §§ 2601-29 (1982); Federal Insecticide, Fungical, & Rodenticide Act, 7 U.S.C. §§ 136-136Y (1982); Uranium Mining Tailings Radiation Control Act, 42 U.S.C. §§ 2014, 2021, 2022, 2111, 2113, 2114, 2201, 7901, 7911-7925, 7941, 7942 (1982); Natural Environmental Policy Act, 42 U.S.C. §§ 4321-79 (1982).

the statutes that can be claimed to deal with groundwater there are only five main statutes that could potentially have dealt with LUSTS.<sup>35</sup> Recognition of the groundwater contamination problem has raised questions as to whether our existing legal system is sufficient.

Recently, however, there have been several initiatives at the federal level to deal specifically with the problems created by LUSTs. EPA has recognized this problem as a specific example of an unaddressed area of the law for a number of years. In August of 1984 EPA released its final National Ground Water Protection Strategy.<sup>36</sup> Another was the amendment to the Resource Conservation and Recovery Act (RCRA Amendments), which the President signed into law on November 9, 1984.<sup>37</sup> The amendments require EPA to develop a comprehensive program regulating tanks by 1987. The program will focus on the areas of monitoring, record keeping, replacement and performance standards.

#### IV. RCRA AND THE 1984 AMENDMENTS

The Resource Conservation and Recovery Act of 1976, (RCRA)<sup>38</sup> enables the EPA and state governments to regulate the disposal of municipal solid waste and hazardous waste. With the enactment of RCRA, Congress broadened federal supervision over the most dangerous and widespread source of groundwater contamination.<sup>39</sup>

RCRA substantially broadened EPA's authority and closed much of the gap created by the limited application of the earlier statutes. Included among RCRA's purposes is the protection of subsurface water. Many of its provisions are devoted to the protection of groundwater from leachates from the land disposal of waste. RCRA's definition of "disposable" includes leakage and demonstrates congressional awareness that hazardous waste may enter the environment by being discharged into any waters.<sup>40</sup> "Solid waste" is broadly defined to include garbage, refuse, sludge and any other discarded products whether solid, liquid, semi-solid or contained gas.<sup>41</sup> Regulation in the Act controls site selection, construction, operation and monitoring of hazardous facilities by requiring a permit from all persons who treat, store or dispose of hazardous wastes.<sup>42</sup> RCRA authorizes the EPA to publish regulations for

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<sup>35</sup>These Statutes include: Clean Water Act, 33 U.S.C. §§ 1251-1376 (1982); Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-10 (1982); Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-87 (1982); Comprehensive Environmental Response, Cooperation, & Liability Act, 42 U.S.C. §§ 9101-9657 (1982); Toxic Substance Control Act, 15 U.S.C. §§ 2601-29 (1982).

<sup>36</sup>EPA Strategy, supra note 10, at 18.

<sup>37</sup>The Resource Conservation & Recovery Act, 42 U.S.C. §§ 6901-87 (1982), amended by 42 U.S.C. §§ 6991-6991(i) (Supp. 1985).

<sup>38</sup>Resource Conservation & Recovery Act, 42 U.S.C. §§ 6901-87 (1982).

<sup>39</sup>Horne, supra note 28, at 9.

<sup>40</sup>Resource Conservation & Recovery Act, 42 U.S.C. at § 6903(3) (1982).

<sup>41</sup>Id., at § 6903(27).

<sup>42</sup>Id., at § 6921-87.

continuing guidelines for solid waste management programs<sup>43</sup> and encourages states to develop their own programs for solid waste management.

The Hazardous and Solid Waste Amendments of 1984<sup>44</sup> were a culmination of a series of congressional hearings during which many members of the Congress expressed the public's frustration with what was perceived as EPA's lack of willingness to promulgate all of the regulations necessary to implement the RCRA program and deal with the loopholes in the regulations that the EPA had promulgated. These congressional deliberations lasted approximately three years.<sup>45</sup>

Congress and EPA first considered amending Toxic Substance Control Act;<sup>46</sup> however, RCRA was finally chosen as the statute to amend. The amendments did more than merely reauthorize RCRA. They will cause a major change in the way the nation manages its waste.<sup>47</sup> The new amendments established new programs covering small generators of hazardous waste and underground storage tanks. Most important, EPA will not be able to extend the development of regulations beyond the statutory deadline. Congress has dictated that if the Agency misses any of a number of statutory deadline, statutory "hammers" will fall putting into effect strict legislative rules.

The RCRA Amendments address many of the problems posed by LUSTs by creating a major new regulatory program to identify leaking tanks, to require corrective actions when leaking tanks are discovered, and to prevent the installation of new tanks that could pose a future threat. The scope of the new program appears vast. Some estimate that as many as two to three million tanks may be covered.<sup>48</sup> Under the program a tank will be subject to regulation if ten percent of its volume, including underground pipes, is underground,<sup>49</sup> and contains a regulated substance.<sup>50</sup>

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<sup>43</sup>Id., at § 6907.

<sup>44</sup>RCRA Amendments, supra note 37.

<sup>45</sup>Paper presented by M. Cook, The New RCRA, at "Perspectives on the 1984 Amendments to the Resource and Conservation Act of 1976," Colloquium sponsored by Virginia Institute of Marine Science, the College of William and Mary and the Institute of Law and Public Health Protection, October 24, 1985. [hereinafter cited as The New RCRA].

<sup>46</sup>Toxic Substances Control Act, 15 U.S.C. §§ 2601-2629 (1982).

<sup>47</sup>Rosbe & Gulley, The Hazardous and Solid Waste Amendments of 1984: A Pragmatic Overhaul of the Way America Manages Its Hazardous Waste, 14 Env'tl. L. Rep. 10458 (1984).

<sup>48</sup>New RCRA Permitting Could Close 70 Percent of Land Disposal Facilities, Skinner Predicts, [Current Developments] Env't Rep. (BNA) 1275, 1276 (November 23, 1984).

<sup>49</sup>RCRA Amendments, supra note 37, at 6991(1). Excluded from the definition of "underground storage tank" are septic tanks, storage tanks in underground areas but standing above the floor, small farm or residential tanks used for storing motor fuel for noncommercial purposes (less than 1,100 gallons), heating oil tanks for consumptive use on the premises, and pipelines that are already regulated under federal or state law. Id.

The senate sponsor described the purpose of the amendments as intended to establish a constructive federal role to aid the states in protection of their underground water supplies. Senator Durenburger felt that passage of the bill would help to ensure some consistency between state programs and tank standards.<sup>51</sup> The role outlined for the EPA is the traditional one of issuing standards for design, construction, and installation of new tanks and establishing criteria for sound programs to prevent contamination.

The program is aimed at promoting state implementation. States will submit their programs to the EPA for approval. If the programs meet the generally designated program criteria and reflect standards at least as strict as EPA's, the program will be approved. Upon approval states will be eligible for grant monies available for implementation of the programs.<sup>52</sup> By May of 1985, the governor of each state was to designate a state agency to receive notification from all tank owners in the state.<sup>53</sup> Within one year from that date owners of all new or existing tanks or tanks taken out of operation since 1973 must notify the state agency as to the age, location, size, type and uses of each tank.<sup>54</sup> The amendments also include 58 regulatory deadlines to be met by EPA within two and one half years and 72 overall. These specifications, actually closer to regulations, are spelled out in great detail, and include requirements that EPA promulgate: (1) a leak detection, and inventory control system, together with tank testing or a comparable method of identifying releases; (2) recordkeeping for monitoring and leak detection; (3) reporting of leaks and corrective actions; and (4) closure of tanks when necessary to prevent future contamination. In addition, EPA must promulgate regulations establishing financial responsibility requirements and performance standards for new tanks including: standards for design, construction, installation, leak detection and compatibility standards.<sup>55</sup> EPA states that because so many diverse people will have to understand and obey the regulations, they may be the shortest ever written. EPA plans to provide the widest scope possible including mandatory replacement of all underground tanks.<sup>56</sup>

One of the first deadlines to go into effect was a ban on the installation of bare steel tanks. The ban took effect automatically on May 8, 1985 and affects all qualifying tanks. Until the EPA published standards, no new tank may be installed unless it meets special interim requirements designed to prevent releases due to

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<sup>50</sup>The term "regulated substance" is defined as any substance defined in § 101(14) of CERCLA (but not any substance regulated as a hazardous waste under subtitle C [of RCRA] and any liquid petroleum. *Id.*, at § 6991 (2).

<sup>51</sup>130 Cong. Rec. § 9164 (1984) (statement of Senator Durenberger, sponsor of the amendment bill).

<sup>52</sup>*Id.*, at § 6165.

<sup>53</sup>RCRA Amendments, *supra* note 37, at § 6991a(b).

<sup>54</sup>*Id.*, at § 6991a(a) (1)-(3).

<sup>55</sup>Rosbe & Gulley, *supra* note 37, at 10464.

<sup>56</sup>RCRA Underground Storage Tank Regulations May Be 'Shortest Ever,' EPA Official Says, [Current Developments] Env't Rep. (BNA) 590 (August 9, 1985). EPA plans to help state and local governments provide training, assistance and special inducements to promote compliance. The New RCRA, *supra* note 45, at 6.

corrosion or structural failure,<sup>57</sup> or unless the soil resistivity surrounding the tank is greater than 12,000 ohm/cm.<sup>57</sup>

Enforcement of the underground tank provisions is likely to be slow in developing. Violators of the provisions will be liable for civil penalties of up to \$10,000 per day.<sup>58</sup> EPA has no present enforcement plan in place to detect violators but it is planning one. Primary enforcement responsibility will be with the state and local governments.<sup>59</sup>

The RCRA Amendments appear to be a step in the right direction. An argument, however, can be made that they still fail to adequately address the problem. A primary weakness is that the Amendments fail to regulate all underground tanks that may endanger the environment. All tanks containing less than 1,100 gallons or which are used to store substances for personal use are exempt from regulation. It would seem logical that a true effort to protect public health would also include these possible sources of contamination. Further, neither Superfund nor RCRA yet provide funds for compensation to those injured from underground petroleum leaks. Finally, enforcement has been weak in the past and is likely to be slow in addressing violations of the new provisions.

## V. NEED FOR STATE ACTION

The nation's ominous problems with LUSTs require stringent regulation in order to safeguard the resource. Despite an increasing Federal role in the protection of groundwater, the bulk of this responsibility will most likely fall on the states. Congress and the EPA have both recognized and promoted the state level as the focal point of groundwater/LUST regulatory protection. The states themselves have also realized this directive. An immediate task for the federal agencies appears to center on coordinating their various programs and producing legislation to solely address the problems of groundwater quality.

There are a number of reasons why states are likely, and perhaps best able, to retain management authority in this area. First, there is already the basis for the development of a comprehensible common law and statutory system to govern the use and allocation of groundwater in each statute. Second, groundwater hydrology, geology and contamination vary from state to state, making establishment of a uniform or comprehensive national groundwater law impractical. Third, many of the solutions, proposing to control groundwater use and pollution, require land use control, which states and local governments are in the best position to do. Finally, states are increasingly assuming administrative authority over the national groundwater pollution control laws.<sup>60</sup>

States assess groundwater contamination problems on the basis of severity or frequency of degradation to groundwater. Reported LUSTs are considered a major

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<sup>57</sup>RCRA Amendments, supra note 37, at § 6991b(g).

<sup>58</sup>Id., at § 6991e(d).

<sup>59</sup>Installation of Unprotected Underground Tanks Prohibited: Large Plants' Gas Stations Affected, [Current Developments] Env't Rep. (BNA) 39 (May 10, 1985).

<sup>60</sup>Strategies for State Action, supra note 24, at 29.

source of contamination.<sup>61</sup> Approximately 32 states and 65 local municipalities have, or are in the process of enacting, some form of legislation aimed at leak detection and prevention.<sup>62</sup> The methods vary widely from state to state based on storage tank problems, and the hydrological sensitivity of the region. In the absence of a Federal model, each state has approached LUSTs management with its own regulatory scheme. Almost all states have initiated programs to study the problem in the state.

The state programs are increasing in both scope and number. In the future they will most likely provide the basis for our national underground tank regulation. Due to the nature of the resource, however, there is still need for coordination between the federal government and the states and the states themselves. State boundaries become arbitrary when dealing with a resource such as groundwater. Consequently, increased coordination will be necessary to provide for a policy truly national in scope. States should give direction to their independent efforts and programs for assisting in the implementation of the federal program.

## VI. CONCLUSION

Leaking underground storage tanks have moved from obscurity to national prominence in just five years. Between 1981 and now, the problem has been recognized and mechanisms and technologies to deal with it have been established. It must be realized, however, that present attempts to address the issue of LUSTs are still inadequate. While groundwater protection remains an area where primary authority has been and will be with the states, it is becoming increasingly apparent that the federal government must take a more active and organized role. The EPA Strategy and the RCRA amendments demonstrate recognition of the need for unified and comprehensive protection measures. The federal programs need not infringe on traditional state prerogatives to allocate and protect groundwater; however, a national policy for prevention and cleanup of groundwater contamination from LUSTs and efficient administration of the various federal and state programs is essential.

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<sup>61</sup>EPA Strategy, supra note 10, at 12-13.

<sup>62</sup>Regulatory Strategy for Underground Tanks May Require Daily Testing, EPA Official Says, [Current Developments] Env't Rep. (BNA) 413 at 414 (July 13, 1984); Note, supra note 19, at 19.