



Draft State Implementation Guidance for the Revisions to the Underground Injection Control Regulations for Class V Injection Wells

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- Appendix B Fact sheet to the Rule.
- Appendix C Frequently asked questions.
- Appendix D Sample permit application form.
- Appendix E Sample pre-closure form.
- Appendix F Sample inventory form.
- Appendix G Guidance on the delineation of other sensitive ground water areas.
- Appendix H Guidance on determining the status of storm water drainage wells located at motor vehicle service facilities.
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- Appendix J Training presentation materials for the Rule.
- Appendix K National Primary Drinking Water Standards.
- Appendix L *Handling Water Discharges From Automotive Service Facilities Located at Petroleum Marketing Operations* by the American Petroleum Institute.
- Appendix M *Best Management Practices for the Protection of Ground Water: A Local Official's Guide to Managing Class V UIC Wells* by Connecticut Department of Environmental Protection.
- Appendix N Glossary.

INTRODUCTION

A. Safe Drinking Water Act and Underground Injection Control

Underground injection wells are regulated by the underground injection control (UIC) program under the authority of Part C of the Safe Drinking Water Act (SDWA) (42 U.S.C. 300h *et seq.*). The SDWA is designed to protect the quality of drinking water in the United States, and Part C specifically mandates the regulation of underground injection of fluids through wells. EPA has promulgated a series of UIC regulations under this authority.

Section 1421 of the SDWA requires EPA to propose and promulgate regulations specifying minimum requirements for State programs to prevent underground injection that endangers drinking water sources. EPA promulgated administrative and permitting regulations, codified in 40 CFR parts 144 and 146, on May 19, 1980, and technical requirements in 40 CFR part 146 on June 24, 1980. The regulations were subsequently amended in 1981, 1982, 1983, 1988, 1993, 1994, and 1995.

Section 1422 of the SDWA provides that States may apply to EPA for primary enforcement responsibility to administer the UIC program; those States receiving such authority are referred to as "Primacy States." Where States do not seek this responsibility or fail to demonstrate that they meet EPA's minimum requirements, EPA is required by regulation to prescribe and directly implement a UIC program for these States that are referred to as DI States. For Class V wells, there are currently 37 Primacy programs (including three Territories) and 19 DI programs (including three Territories). In addition, all Class V UIC programs in Indian Country are directly implemented by EPA.

B. EPA's Strategy for Class V Wells

Class V injection wells¹ are generally shallow waste disposal wells, storm water and agricultural drainage systems, or other devices used to release fluids either directly into underground sources of drinking water (USDWs) or into the shallow subsurface that overlies USDWs.² Class V wells are used to inject non-hazardous wastes only.

¹ Class I wells are used to inject wastes beneath the lowermost geologic formation that contain an underground source of drinking water (USDW). Class II wells are used to inject fluids associated with oil and natural gas recovery and the storage of liquid hydrocarbons. Class III wells are associated with mining and the extraction of minerals such as uranium, copper, and salts. Class IV wells are used to inject hazardous or radioactive waste into or above USDWs, and they are banned. Any well that is not included in Classes I through IV, as defined in 40 CFR 144.6 and 40 CFR 144.80, is considered a Class V well.

² An underground source of drinking water (USDW) is an aquifer or a portion of an aquifer that supplies any public water systems or contains a sufficient quantity of ground water to supply a public water system, currently supplies drinking water for human consumption or contains fewer than 10,000 mg/l total dissolved solids; and is not an exempted aquifer (i.e., exempted from UIC regulations).

Class V wells are located in virtually every State, especially in unsewered areas where the population is likely to depend on onsite waste disposal for their wastewater and ground water for their drinking water. Frequently, these wells are designed as no more than shallow low-tech systems, such as dry wells or septic tank and leachfield combinations intended for sanitary waste disposal. While such designs may be adequate for draining non-hazardous waste water or the isolation and treatment of sanitary waste, they are not appropriate for the disposal of other fluids, although these systems are sometimes inappropriately used for this purpose.

Under the Federal regulations, all Class V wells (with the exception of large capacity cesspools and motor vehicle waste disposal wells) are "authorized by rule" (40 CFR 144), which means they are allowed to inject if they comply with the UIC program requirements. The most important of these requirements is that Class V wells are not allowed to endanger.

Non-endangerment means that injection operations must not allow fluid containing any contaminants to move into USDWs where the presence of the contaminants may cause violations of primary drinking water regulations or adversely affect public health.

On November 23, 1999, the EPA Administrator signed a regulation that explicitly addresses two specific types of endangering Class V wells. In addition, EPA completed a study of all other Class V wells and published a notice on September 30, 1999 regarding the availability of the study.

Based on information gathered during the Class V well study, EPA is working on the next phase of its strategy to address the risks posed by Class V wells. EPA will propose to discharge the Administrator's rulemaking obligations with respect to all Class V well types by April 2001 and finalize these rules by May 31, 2002.

C. State Source Water Assessment and Protection Programs

The 1996 Amendments to the SDWA establish source water protection as a national priority. Source waters consist of underground aquifers or surface water bodies from which one or more public water systems (PWSs)³ receive supplies of drinking water. The Amendments provide incentives for States to assess their source waters, including the susceptibility of PWSs to contamination, and to establish State Source Water Assessment and Protection Programs that fit their particular needs and conditions. All 50 States have submitted their plans to EPA and a majority of them have received approval to begin their Programs.

³ A public water system (PWS) is a water system that provides water to the public for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves at least 25 individuals

D. Summary of the Revisions to the UIC Regulations for Class V Injection Wells (The Class V Rule)

The Revisions to the UIC Regulations for Class V Injection Wells, referred to in this guidance as the “Class V Rule,” adds new requirements for two categories of Class V wells to ensure protection of USDWs:

- *Motor vehicle waste disposal wells.* These are dry wells⁴ or septic tank and leachfield combinations that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR Part 141). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.
- *Large-capacity cesspools.* Cesspools are typically dry wells that receive untreated sanitary waste, and which sometimes have an open bottom and/or perforated sides. The UIC requirements do not apply to single-family residential cesspools or to non-residential cesspools that receive solely sanitary waste and have the capacity to serve fewer than 20 persons a day.

In particular, the Class V Rule bans new motor vehicle waste disposal wells and new and existing large-capacity cesspools nationwide. The Rule also bans existing motor vehicle waste disposal wells in ground water protection areas and other sensitive ground water areas but includes a waiver provision that will allow well owners and operators to seek a permit. The rule includes minimum permit conditions. For the purpose of the Class V Rule, ground water protection areas are source water protection areas delineated in accordance with the 1996 SDWA Amendments for community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) that use ground water as a source.⁵ Other sensitive ground water areas include areas delineated by States that are critical for the protection of USDWs.

⁴ A dry well is a bored, drilled or driven shaft or a dug hole whose depth is greater than its largest surface dimension, which is completed above the water table so that its bottom and sides are typically dry except when receiving fluids

⁵ Community water systems (CWSs) are public water systems that serve at least 15 service connections used by year-round residents of the area or regularly serve at least 25 year-round residents. Non-transient non-community water systems (NTNCWSs) regularly serve at least 25 of the same persons per day for more than 6 months per year. NTNCWs typically are schools, offices, churches, and factories. The third kind of public water systems, namely transient non-community water systems (TNCWSs), serves 25 per day for 6 months or less per year. TNCWSs typically are restaurants, hotels, and large stores

Revisions to the UIC Regulations for Class V Injection Wells (The Class V Rule) focus on:

- Two categories of Class V wells
 - Motor vehicle waste disposal wells
 - Nationwide ban of new wells
 - Ban of existing wells in ground water protection areas and other sensitive ground water areas with provision to obtain a waiver from the ban to obtain permits
 - Large-capacity cesspools
 - Nationwide ban of new and existing wells
- Integration of UIC regulations with source water assessment and protection programs

The new requirements of the Class V Rule are summarized in Table I.1 along with their locations in the new Subpart G and the relevant sections in this Implementation Guide.

Table I.1 - New Class V Rule Requirements

| New Class V Rule Requirements | Federal Citation (40 CFR 144 Subpart G) | Section in Guidance |
|--|--|---------------------|
| Ban of new large-capacity cesspools by April 5, 2000 | 40 CFR 144.84(b)(2) 40 CFR 144.88(a)(2) | 2.C.1 4 B |
| Ban of new motor vehicle waste disposal wells by April 5, 2000 | 40 CFR 144.84(b)(2) 40 CFR 144.88(b)(2) | 2.C.2 5 A |
| Closure of all existing large-capacity cesspools by January 1, 2005 | 40 CFR 144.88(a)(1)(i) | 2 C.1 4 C |
| Well closure or obtain a waiver from the ban for motor vehicle waste disposal wells located in ground water protection areas | 40 CFR 144.84(b)(2) 40 CFR 144.87(a) and (b) 40 CFR 144.88(b)(1)(i) | 2.C.2 6 A 6 C |
| Applicability of the Rule to motor vehicle waste disposal wells in <u>new</u> ground water protection areas (assessed after the initial deadline) | 40 CFR 144.87(e) 40 CFR 144.88(b)(1)(i) | 6 B |
| Statewide application of the Rule to all motor vehicle waste disposal wells in States that fail to complete local assessments for ground water protection areas | 40 CFR 144.87(b) 40 CFR 144.88(b)(1)(v) | 6 D 6 E |
| Well closure or obtain a waiver from the ban for motor vehicle waste disposal wells located in other sensitive ground water areas | 40 CFR 144.84(b)(2) 40 CFR 144.87(a) and (c) 40 CFR 144.88(b)(1)(ii) | 7 A 7 B |
| Statewide application of the Rule to all motor vehicle waste disposal wells in States that fail to complete delineation of other sensitive ground water areas | 40 CFR 144.87(c) 40 CFR 144.87(b)(vi) | 7 C 7 D |
| Statewide application of the Rule to all motor vehicle waste disposal wells in States that determine not to designate other sensitive ground water areas | 40 CFR 144.87(f) 40 CFR 144.88(b)(vi) | |
| Application of existing authorities outside of ground water protection areas and other sensitive ground water areas | 40 CFR 144.87(h) | 4 E 5 D |
| Pre-closure notification at least 30 days prior to well closure of large-capacity cesspool and motor vehicles waste disposal wells | 40 CFR 144.88(a)(1)(ii) 40 CFR 144.88(b)(1)(vii) | 4 C.2 5 B.2 |
| Closure of large-capacity cesspools and motor vehicle waste disposal wells | 40 CFR 144.89(a) 40 CFR 144.82(b) | 4 C.3 5 B.3 |
| Permit conditions and monitoring requirements for motor vehicle waste disposal wells | 40 CFR 144.88(b)(1)(iii) and (iv) | 5 B.4 5 B.5 |
| Conversion of motor vehicle waste disposal wells to other Class V well type | 40 CFR 144.89(b) | 5 E.2 |
| Plugging and abandoning Class V wells (closure) | 40 CFR 146.10(c) | 8 C |
| Reclassification of radioactive waste disposal wells | 40 CFR 146.5 | 8 A |
| Rule authorization of Class IV wells under the Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act (EPA and States) | 40 CFR 144.23(c) | 8 B |

E. Purpose and Scope of this Implementation Guide

The purpose of this State Implementation Guide is to provide aid to States and EPA Regions for the implementation of the Revisions to the UIC Regulations for Class V Injection Wells (i.e., the Class V Rule).

The requirements of the rule contained in the Class V rule are the federal minimum. This guide has been developed to assist States in implementing the Class V rule, and therefore, the material is not binding. Where rule requirements are presented, the words "must" or "shall" are used. Where it is recommended or guidance, the words "should" or "may" are used. This manual presents the requirements and timelines for the requirements promulgated.

This draft implementation guide is being developed through a workgroup process involving EPA Headquarters and Regions. It will be updated and revised based on feedback and comments from participants of the implementation workgroup sessions scheduled during the first quarter of the year 2000 and other stakeholders. The guide contains the following sections:

- Section 1 summarizes the minimum federal requirements for all Class V wells, which are not part of the new Class V Rule.
- Section 2 presents the general time frame associated with the Class V Rule.
- Section 3 addresses the State Source Water Assessment and Protection Program mandated under the SDWA Amendments of 1996, as it relates to the Class V Rule.
- Section 4 presents the requirements and implementation time line for large-capacity cesspools.
- Section 5 focuses on the requirements associated with motor vehicle waste disposal wells.
- Section 6 presents the implementation time line for motor vehicle waste disposal wells as associated with the assessments of ground water protection areas.
- Section 7 presents the implementation time line for motor vehicle waste disposal wells as associated with the delineation of other sensitive ground water areas.
- Section 8 covers other changes contained in the Class V Rule, which are not related to motor vehicle waste disposal wells and large-capacity cesspools.
- Section 9 addresses State Primacy Revision Requirements, including a detailed time frame for application review and approval. This section also contains

guidance and references to help States adopt each new special primacy requirement included in the Class V Rule.

The Appendices of this document also provide information that will be useful to States and EPA Regions throughout the primacy revision application process.

- Appendix A contains the published Class V Rule, along with the preamble to the rule (64 FR 68546).
- Appendix B contains the fact sheet to the Rule.
- Appendix C provides a list of frequently asked questions, along with their answers.
- Appendix D contains a sample permit application form.
- Appendix E contains a sample pre-closure form.
- Appendix F contains a sample inventory form.
- Appendix G contains a guidance on the delineation of other sensitive ground water areas.
- Appendix H contains a guidance on determining the status of storm water drainage wells located at motor vehicle service facilities.
- Appendix I contains a guidance on the conversion of motor vehicle waste disposal wells to other Class V wells.
- Appendix J contains training presentation materials for the rule.
- Appendix K presents the national primary drinking water standards.
- Appendix L contains "Handling Water Discharges From Automotive Service Facilities Located at Petroleum Marketing Operations" by the American Petroleum Institute.
- Appendix M contains "Best Management Practices for the Protection of Ground Water: A Local Official's Guide to Managing Class V UIC Wells" by Connecticut Department of Environmental Protection.
- Appendix N contains a glossary used in this implementation guide

SECTION 1 FEDERAL REQUIREMENTS APPLICABLE TO ALL CLASS V WELLS (40 CFR 144)

1.A. Consolidation of Class V Requirements in Subpart G of 40 CFR 144

The Class V Rule consolidates requirements for all Class V wells in Subpart G of 40 CFR 144. Subpart G is written in an easy to understand "plain English" format. Class V well owners and operators are subject to other UIC Program requirements in 40 CFR 144 through 147. While most of the relevant requirements are repeated or referenced in Subpart G, it would be necessary for well owners and operators to read these other parts to understand the entire UIC Program.

1.B. General requirements on Class V Wells

The minimum Federal standard for all Class V wells (with the exception of motor vehicle waste disposal wells and large-capacity cesspools) is that they are "authorized by rule" (40 CFR 144.24). Class V wells are authorized to inject as long as:

- (1) they do not endanger USDWs (40 CFR 144.12), and
- (2) the well owners or operators submit basic inventory information (40 CFR 144.26).

If a Class V well has been determined to be endangering USDWs, State and EPA may call the well in for a permit (40 CFR 144.25) or request additional information from the well owner or operator (40 CFR 144.27). Table 1.1 lists the minimum Federal requirements, their locations in the CFR and the new Subpart G.

Table 1.1 - UIC Requirements for all Class V Injection Wells

| Existing Rule Requirements | Federal Citation | Subpart G |
|---|-------------------------|------------------|
| Submission of inventory information | 40 CFR 144.26 | 40 CFR 144 83(a) |
| Non-endangerment of USDWs | 40 CFR 144 12 | 40 CFR 144 82(a) |
| Submission of requested information (DI States) | 40 CFR 144 27 | 40 CFR 144 83(b) |
| Apply for a permit (as required) | 40 CFR 144 25 | 40 CFR 144 84(b) |

1.C. Non-Endangerment Requirement (Mandatory)

The minimum Federal requirements do not allow the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR 141 or may adversely affect public health (40 CFR 144.12(a)). Also, the regulations require the State and EPA to take one or more of the following actions if it learns that a Class V well may cause a violation of primary drinking water regulations or adversely affect the public health (40 CFR 144.12(c)):

- (1) require the well owner or operator to obtain an individual permit;
- (2) order the well owner or operator to take actions (including well closure) to prevent the violation; or
- (3) take enforcement action.

Furthermore, the State or EPA in DI States, may take emergency action if the introduction of a contaminant into the USDWs may present an imminent and substantial endangerment to public health (40 CFR 144.12(e)).

1.D. Inventory Requirement (Mandatory)

The owner or operator of a Class V injection well must submit inventory information to the State or EPA in a timely manner (40 CFR 144.26). A well owner or operator is not authorized to inject until he or she submits inventory information for the well to the State or EPA. At a minimum, the well owner or operator must provide at least the following information:

- (1) facility name and location;
- (2) name and address of legal contact;
- (3) ownership of facility;
- (4) nature and type of injection wells; and
- (5) operating status of injection wells.

Note: These information items are requested on the national "Inventory of Injection Wells" form (OMB No. 2040-0042). A copy of the form can be found in Appendix F.

Owners or operators of existing Class V injection wells that have not yet submitted inventory information are in violation of the inventory requirement and are not allowed to inject into their wells. In Class V UIC Primacy States, well owner and operators who have not submitted inventory information must contact the States to determine what and when they need to submit to fulfill the inventory requirement. Additional requirements for well owners and operators in DI States are outlined in Section 1.D.

1.E. Additional Requirements of DI Programs (Inventory and Information Request)

The Class V Rule added a new requirement for owners and operators of all Class V wells in DI States. Well owners and operators must submit inventory information on their new Class V wells *prior to constructing* their wells (40 CFR 144.83(a)(1)(i)).

For existing Class V wells in DI States, if owners or operators have not submitted inventory information for their wells, they must cease injection and submit inventory information.

A well owner or operator is not allowed to inject into the well if he or she fails to submit inventory information. Upon submission of inventory information, a well owner or operator must wait 90 days before resuming injection, unless he or she receives notice from EPA. In addition, owners and operators of certain Class V well types are required to submit additional information under the inventory requirements (40 CFR 144.26(b)(1)(iii)(F)).

Apart from the added inventory requirements, EPA may require the owner or operator of any well authorized by rule to submit information for review to determine if a well may be endangering a USDW in violation of 40 CFR 144.12. Such information requests must be made in writing, with a brief statement of the reasons for requiring the information (40 CFR 144.27).

1.F. Permit Requirement (when deemed necessary)

If determined to be necessary, a State or EPA may require the owner or operator of any Class V well to apply for and obtain an individual or area UIC permit (40 CFR 144.25). Criteria for requiring a permit include:

- (1) the injection well is not in compliance with any requirements of the rule (e.g., endangering USDWs);
- (2) the injection well is not or no longer is within the category of wells and types of well operations authorized in the rule; and
- (3) the protection of USDWs requires that the injection operation be regulated by requirements (e.g., for corrective action, monitoring and reporting, or operation), which are not contained in the rule.

Permits for Class V wells are generally effective for a fixed term not to exceed 10 years (40 CFR 144.36). A Class V well owner or operator is not allowed to inject into the well upon the effective date of permit denial, or upon failure by the owner or operator to submit an application in a timely manner as specified in the notice from the State or EPA (40 CFR 144.25).

SECTION 2 KEY DATES OF THE CLASS V RULE

2.A. Effective Date of the Class V Rule

The Class V Rule was signed by the EPA Administrator on November 23, 1999 and published in the *Federal Register* on December 7, 1999 (64 FR 68546). The Rule is effective on April 5, 2000 (i.e., 120 days after publication) and it adds new requirements to two categories of endangering Class V wells to ensure protection of USDWs: motor vehicle waste disposal wells and large-capacity cesspools.

Class V Rule Publication and Effective Dates:

- Signed by the Administrator on December 23, 1999.
- Published on December 7, 1999.
- Effective on April 5, 2000.

2.B. Revisions to Primacy State Programs

States with primacy programs are required to submit to EPA a proposed revision to their State programs within 270 days of the effective date of the Class V Rule. Therefore, State Primacy Revision Packages must be submitted by States to EPA by December 29, 2000.

2.C. Important Compliance Dates to be Tracked by UIC Programs

2.C.1. New and Existing Large-Capacity Cesspools

On a national basis, new large-capacity cesspools are banned as of April 5, 2000. New wells are those for which construction started on or after April 5, 2000. In addition, all existing large-capacity cesspools are to be closed nationwide by April 5, 2005. Additional discussions on large-capacity cesspools are found in Sections 4 of this implementation guide.

If a large-capacity cesspool is found to pose an imminent danger to public health, EPA expects that the State will use existing authorities to require the well owner or operator to cease injection before the April 5, 2005 deadline.

Key Compliance Dates Associated with Large-Capacity Cesspools:

- **New Large-Capacity Cesspools**
 - Nationwide ban as of April 5, 2000
- **Existing Large-Capacity Cesspools**
 - Closed nationwide by April 5, 2005

2.C.2. New and Existing Motor Vehicle Waste Disposal Wells

New motor vehicle waste disposal wells are banned nationwide as of April 5, 2000. New wells are those for which construction started on or after April 5, 2000. Existing motor vehicle waste disposal wells in regulated areas must either be closed or be granted a waiver from the ban and obtain a permit to continue operation. Regulated areas are areas assessed under Section 1453 of the SDWA for CWSs and NTNCWSs that use ground water as a source and other sensitive ground water areas delineated by States. The rule specifies minimum permit conditions. Detail discussions of the source water assessment and protection programs and other sensitive ground water areas are available in Section 3 of this implementation guide.

Key dates for regulating existing motor vehicle waste disposal wells are: (1) the completion of local source water assessments for CWSs and NTNCWSs that use ground water as a source and (2) the delineation of other sensitive ground water areas, by January 1, 2004. A State may seek and receive up to a one-year extension to complete its assessments or delineation, if the State demonstrates that it has made reasonable progress in completing its assessment or delineation process. States must apply for the extension by June 1, 2003.

Important Dates that are Directly Linked to the Compliance Status of Existing Motor Vehicle Waste Disposal Wells:

- January 1, 2004 -- States must complete all source water assessments for CWSs and NTNCWSs that use ground water as a source.*
- January 1, 2004 -- States must complete delineating other sensitive ground water areas.*

* If a State is making reasonable progress in completing the task, EPA may grant an extension of up to one year from the January 1, 2004 deadline. The State must apply for the extension by June 1, 2003.

Additional discussions on the new requirements on motor vehicle waste disposal wells are available in Section 5 of this implementation guide. Detailed compliance time lines for motor vehicle waste disposal wells are presented in Sections 6 and 7. In general, owners and operators of wells located in ground water protection areas must be in compliance one year after their local assessment is complete (see Section 6). In addition, owners and operators of wells located in other sensitive ground water areas must all be in compliance by January 1, 2007 or January 1, 2008, if a State is granted a one-year extension to complete the delineation (see Section 7).

SECTION 3 GROUND WATER PROTECTION AREAS, OTHER SENSITIVE GROUND WATER AREAS, AND THE CLASS V RULE

The requirements for existing motor vehicle waste disposal wells apply only to those injection wells that are located in ground water protection areas and other sensitive ground water areas. Under Section 1453 of the 1996 SDWA Amendments, States are required to complete source water assessments for all public water systems (PWSs) by May 2003 (including a maximum extension of 18 months).

State Source Water Assessment Programs – for all public water systems (PWSs) include:

- Delineation of source water protection areas.
- Inventory of potential contaminant sources in the delineated areas.
- Determination of susceptibility of the water systems to contamination.
- Making assessment results publicly available.

A local source water assessment is considered completed when the results of the assessment are made available to the public.

The new requirements apply to existing motor vehicle waste disposal wells in: (1) source water assessment areas of community water systems (CWS) and non-transient non-community water systems (NTNCWS) that use ground water (ground water protection areas as specified under the State Source Water Assessment Programs) (see Section 3.A), and (2) other sensitive ground water areas identified by States, which require additional protection from motor vehicle waste disposal wells.

3.A. Assessments for Ground Water Protection Areas

A ground water protection area, as defined by the Class V Rule, is a geographic area delineated and assessed under Section 1453 of the SDWA for CWSs and NTNCWSs that use ground water as a source of drinking water. These areas receive priority for the protection of drinking water supplies and States are required to delineate and assess these areas as part of their State Source Water Assessment and Protection Programs. In cases where the State delineated zones or areas representing various levels of protection, the State will need to determine which areas correspond to ground water protection areas for the purpose of the Class V Rule.

In the Class V Rule, a ground water protection area is a geographic area, designated by the State, near and/or surrounding CWSs and NTNCWSs that use ground water as a source of drinking water. This ground water protection area is delineated and assessed under Section 1453 of the SDWA.

Note: Surface water systems and transient non-community water systems (TNCWSs) are not included in ground water protection areas as specified in the Class V Rule.

3.B. Time Line for States to Complete Their Assessments of Ground Water Protection Areas

Under Section 1453 of the 1996 SDWA Amendments, States are required to ensure that source water assessments are completed for all public water systems (i.e., including all CWSs, NTNCWSs, and transient non-community water systems) by May 2003 (i.e., with a 18-month extension). Many States have already requested the extension in their Source Water Assessment and Protection Program Plans.

Under the Class V Rule, States are given additional time (i.e., until January 1, 2004) to complete their assessment of ground water protection areas (for CWSs and NTNCWSs only) before certain conditions of the Rule will take effective (e.g., statewide applicability of the Rule for existing motor vehicle waste disposal wells). EPA believes that all States will complete their source water assessments for ground water protection areas by the given deadline. If a State has made substantial progress in completing its assessments but requires more time to complete all the local assessment, the State can apply to EPA for an extension. Applications for extensions must be submitted to EPA by June 1, 2003. EPA may grant up to a one-year extension (i.e., up to January 1, 2005) for a State to complete the remaining assessments.

A summary of the time line for States to complete their local assessments of ground water protection areas is presented in Table 3.1.

Table 3.1 - Time Line for States to Complete Assessments of Ground Water Protection Areas

| Action Item | Requirement Date |
|--|----------------------------|
| Completion of all Source Water Assessments by States (without applying and receiving extensions to complete the assessments) | <i>circa</i> November 2001 |
| Completion of all Source Water Assessments by States (with 18 months extension) | <i>circa</i> May 2003 |
| Application for Extending the Deadline to Complete Assessments for Ground Water Protection Areas by States | June 1, 2003 |
| Completion of Assessments of Ground Water Protection Areas by States (without the one-year extension granted by EPA) | January 1, 2004 |
| Completion of Assessments of Ground Water Protection Areas by States (with the one-year extension granted by EPA) | January 1, 2005 |

3.C. Other Sensitive Ground Water Areas

The rule applies to areas beyond ground water protection areas to ensure protection of USDW in other locations. In the final Class V Rule, the requirements for existing motor vehicle waste disposal wells are expanded to other sensitive ground water areas as designated by the States, or in the case of a DI Programs and Tribes, the EPA Regional Offices. Expanding the rule to other sensitive ground water areas gives States the flexibility to identify areas, in addition to ground water protection areas, that require additional protection from endangering Class V injection wells.

Other sensitive ground water areas will be identified by States as areas critical for the protection of USDWs from contamination by motor vehicle waste disposal wells.

Examples of Other Sensitive Ground Water Areas:

- ▶ Areas overlying sole-source aquifers
- ▶ Highly productive aquifer supplying private wells and TNCWSs.
- ▶ Continuous and highly productive aquifers in areas away from public water supply wells.
- ▶ Areas where water supply aquifers are being recharged.
- ▶ Karst aquifers that discharge to surface reservoirs serving as public water supplies.
- ▶ Vulnerable or sensitive hydrogeologic settings such as glacial outwash deposits, eolian sands, and fractured volcanic rock.
- ▶ Areas of special concern because of a combination of factors (such as hydrogeologic sensitivity, depth to ground water, significance as a drinking water source, and prevailing land use practices).

3.D. Requirements and Time Line for States to Delineate Other Sensitive Ground Water Areas

The delineation of other sensitive ground water areas is not tied to the State Source Water Assessment and Protection Programs. UIC Programs at Primacy States and EPA Regions (for DI States and Tribes) will be responsible for completing the delineation of these sensitive ground water areas. First, the States, and the EPA Region for DI States and Tribes, must develop a plan for identifying other sensitive ground water areas. The plan would include:

- Criteria for identifying certain sensitive geologic conditions such as karst, fractured bedrock, and unconsolidated aquifers that may be considered.
- Criteria for identifying legal designations such as sole source aquifers that may be considered.
- Criteria that will be used for excluding areas, such as the depth to ground water, confining layers, and likelihood of ground water use.
- Public participation process.

- Description of how the results and information will be made public.

The plan for delineating other sensitive ground water areas is required as part of a State's primacy revision package and is therefore subject to EPA approval. The primacy revision, including the plan for delineating other sensitive ground water areas, must undergo a public review and comment process before it can be approved by EPA. Upon approval by EPA, the State will have until January 1, 2004 to complete the delineation process. EPA believes that all States will complete their delineation of other sensitive ground water areas by the given deadline. If a State requires more time to complete the delineation, it may apply for an extension of up to one year (i.e., January 1, 2005). Such an extension will only be granted if a State has made reasonable progress in completing its delineation but requires more time to complete the task. In addition, a State must complete and submit the extension request to EPA by June 1, 2003.

If a State fails to delineate other sensitive ground water areas, the requirements for motor vehicle waste disposal wells apply statewide. Owners and operators have until January 1, 2007 (or January 1, 2008 if the State receives an extension) to comply with the rule.

A summary of the time line for States to delineate other sensitive ground water areas is presented in Table 3.2.

Table 3.2 - Time Line for States to Delineate Other Sensitive Ground Water Areas

| Action Item | Requirement Date |
|--|-------------------|
| Submission of Delineation Plan by Primacy States (with the Primacy Revision Package) and Making Plan Publicly Available by EPA Region (for DI States and Tribes) | December 29, 2000 |
| Application for Extending the Deadline to Delineate Other Sensitive Ground Water Areas by States (if needed) | June 1, 2003 |
| Completion of the Delineation of Sensitive Ground Water Areas by States (without the one-year extension granted by EPA) | January 1, 2004 |
| Completion of the Delineation of Sensitive Ground Water Areas by States (with the one-year extension granted by EPA) | January 1, 2005 |

3.E. Requirements and Time Line for EPA Regions (with DI Programs) to Delineate Other Sensitive Ground Water Areas

In the case of DI programs, the EPA Regions should work with their States and complete their plans for delineating other sensitive ground water areas and make them available for public comments by December 29, 2000. This date was selected to correspond with the deadline for State primacy revision submissions. A public notice should be published in the *Federal Register* regarding the plan. The EPA Regions and DI States must then work to complete the delineation by the January 1, 2004 deadline. In order to give States the maximum flexibility, EPA will

encourage appropriate State agencies within the DI State to do the delineation. If the DI State agrees to perform the delineation, the agreement between the State and EPA must be formalized in writing. EPA may provide technical assistance to the States and/or enter into a Memorandum of Understanding with the States in developing the plans and conducting the delineation of other sensitive ground water areas.

If a DI State takes on the responsibility of delineating other sensitive ground water areas and requires more time to delineate these areas, it can apply and receive an extension to complete the delineation by January 1, 2005. Such an application must be completed and submitted to EPA by June 1, 2003. An extension will only be granted if a DI State has made reasonable progress in completing its delineation but require more time to complete the task.

3.F. States Choosing not to Delineate Other Sensitive Ground Water Areas

States have the flexibility not to delineate other sensitive ground water areas and have the rule apply statewide. Such a decision should be reflected in the primacy revision application. A State may decide not to delineate additional sensitive ground water areas for a variety of reasons that include:

- A statewide ban of motor vehicle waste disposal wells already exists in the State.
- There is an absence of motor vehicle waste disposal wells across the state.
- The majority, or all, of the State is considered to be sensitive ground water areas.

3.G. Information Sharing for the Assessments of Ground Water Protection Areas

3.G.1. Interagency and Interdepartmental Information Exchange

For a State with Primacy in both the Class V UIC and Source Water Assessment Programs, the UIC Program should work closely with the State Source Water Assessment and Protection Program to ensure that the results of local assessments are made known to the UIC Program and made available to the public. Information exchange between the UIC and Source Water Assessment and Protection Programs would therefore be essential to facilitate the implementation of the Class V Rule.

For a State with Primacy in the Class V UIC Program but not the Source Water Assessment Program, the State UIC Program should coordinate with EPA to ensure that the results of local source water assessments are made known to the State UIC Program and the public in a timely manner.

For a State with Primacy in the Source Water Assessment Program but not the Class V UIC Program, the EPA Regional Office will need to work closely with the State Source Water

Assessment and Protection Program to ensure that the results of local assessments are made available to EPA and the public in a timely manner.

Apart from making sure that the results of local assessments are made available to the UIC Programs and the public, interagency and interdepartmental communications are crucial for:

- The prioritization of the assessment process (e.g., ensuring the completion of local assessments of ground water protection areas), and
- The application to extend the deadline to complete local assessments of ground water protection areas.

3.G.2. Information for the Public and Well Owners and Operators

EPA strongly encourages UIC Programs to notify owners and operators who have submitted inventories of their motor vehicle waste disposal wells regarding their responsibilities in meeting the Class V Rule requirements. In addition, outreach programs through trade organizations, building and plumbing inspectors, and local watershed associations can be used to make well owners and operators aware of their compliance requirements.

Results of local source water assessments for ground water protection areas should be made available to the public in a timely manner.

UIC Program Directors should notify owners and operators who have submitted inventory as soon as their wells are in a ground water protection area, regarding the new rule requirements and compliance deadlines.

Additional outreach activities coordinated between the Source Water Assessment and Protection and the UIC Programs can be conducted through trade organizations, building and plumbing inspectors, and local watershed associations to assist well owners and operators in complying with the Class V Rule requirements.

3.H. Information Sharing for the Delineation of Other Sensitive Ground Water Areas

3.H.1. Interagency and Interdepartmental Information Exchange

For States with Primacy in the Class V UIC Program, the UIC Program should work with other appropriate State agencies (e.g., State Geological Surveys and State Drinking Water Program) to develop the plans and delineate sensitive ground water areas (i.e., assuming the UIC

program and the drinking water programs are in separate agencies or offices). It is also important to use experiences gained from the process of susceptibility determination (a part of the source water assessment process) to develop the delineation approach for sensitive ground water areas.

For DI States and Tribes, EPA will work with the States and Tribes to develop plans for delineating sensitive ground water areas. In addition, EPA will encourage DI States to conduct the delineation on their own. EPA may provide technical assistance to the States and/or enter into a Memorandum of Understanding with the States in developing the plans and conducting the delineation of other sensitive ground water areas. If a State or Tribe decides not to take on the responsibility of preparing a plan and conducting the delineation, the EPA UIC program will still be responsible for meeting the various deadlines.

Apart from making sure that the results of delineation are made available to the UIC Programs and the public, interagency and interdepartmental communications are crucial for:

- Setting the criteria of the delineation process, and
- Developing the application to extend the deadline to complete delineation of other sensitive ground water areas.

3.H.2. Information for the Public and Well Owners and Operators

Upon the completion of the delineation of other sensitive ground water areas, the UIC programs should make the delineation results available to the public in a timely fashion. Outreach efforts should be targeted to affected well owners and operators regarding their responsibilities in meeting the Class V Rule requirements. EPA recommends that UIC Program Directors notify owners and operators who have submitted inventory regarding as soon as their wells are in sensitive ground water areas, regarding the new rule requirements and compliance deadlines. In addition, outreach programs through trade organizations, building and plumbing inspectors, and local watershed associations can be used to make well owners and operators aware of their compliance requirements.

SECTION 4 REQUIREMENTS AND IMPLEMENTATION TIME LINE FOR LARGE-CAPACITY CESSPOOLS

4.A. Exclusion Criteria for Large-Capacity Cesspools

A cesspool is typically a “dry well” that receives untreated sanitary waste, and which sometimes has an open bottom and/or perforated sides. A cesspool is considered large capacity when used by:

- (1) A multiple dwelling, community or regional system for the injection of waste (e.g., a duplex or apartment building), or
- (2) Any non-residential cesspool that has the capacity to serve 20 or more people per day (e.g., a rest stop or church).

This rule does not affect cesspools used by single family homes or non-residential cesspools that serve fewer than 20 people in a day.

Many States do not use the “20 persons a day” criterion and have instead converted to waste flow rates or cesspool volumetric capacity to classify what is a large-capacity cesspool. EPA recognizes that States may choose an alternate definition for large-capacity cesspools (a capacity standard), as long as it is comparable to the “20 person per day” criterion.

4.B. Nationwide Ban of New Large-Capacity Cesspools

All new large-capacity cesspools, for which constructions have not started before April 5, 2000 are banned as of April 5, 2000 nationwide (40 CFR 144.88(a)(2)).

Under the ban, large-capacity cesspools may no longer be constructed. States should notify the appropriate organizations and individuals to make sure that new large-capacity cesspools are no longer allowed. These agencies include: health departments, plumbing associations, construction contractors, septic system installers, and building inspectors.

4.C. Requirements for Existing Large-Capacity Cesspools

All existing large-capacity cesspools must be closed by April 5, 2005 (40 CFR 144.88(a)(1)(i)). There is no extension of the compliance deadline to owners and operators of large-capacity cesspools.

4.C.1 Inventory Requirements for Large-Capacity Cesspools Under Construction Before April 5, 2000 in DI States

Owners and operators of all Class V wells in DI States must submit inventory information on their new Class V wells prior to constructing their wells (40 CFR 144.83(a)(1)(i)). Because new large-capacity cesspools are banned as of April 5, 2000, any facility submitting inventory after April 5, 2000 should be notified that large-capacity cesspools are banned.

For large-capacity cesspools that are under construction prior to April 5, 2000, the well owners or operators must submit inventory information to EPA before using their wells (40 CFR 144.83(a)(1)(ii)). Note that these wells are still required to close by April 5, 2005.

For existing large-capacity cesspools in DI States, if the owners or operators have not submitted inventory information for their wells, they must cease injection and submit inventory information. A well owner or operator is not allowed to inject into the well if he or she fails to submit inventory information. Upon submission of inventory information, a well owner or operators must wait 90 days before resuming injection, unless he or she receives notice from EPA.

All owner and operators of large-capacity cesspools must comply with the inventory requirement in addition to other Class V requirements such as pre-closure notification and well closure requirements.

4.C.2. Pre-Closure Notification

The pre-closure notification requirement applies to both Primacy States and DI States. Before closing a large-capacity cesspool, the owner or operator must notify the State or EPA UIC Program of his or her intent to close the well at least 30 days prior to well closure (40 CFR 144.88(a)(1)(ii)).

EPA has developed the "Class V Well Pre-Closure Notification Form" (OMB No. 2040-0214) for DI programs. A copy of the form is available in Appendix E. States may use their own pre-closure notification systems, or adopt all or part of the EPA form for their own use.

4.C.3. Well Closure Requirements

A well may be closed 30 days after submission of the pre-closure notification. A well must be closed in a manner that prevents movement of contaminated fluid into USDWs, which may cause a violation of the primary drinking water or other health-based standards, or adversely affect public health (40 CFR 144.89(a)). State and EPA UIC Programs may have additional or more specific closure requirements that address their unique situations. An owner or operator

may need to dispose of or manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the waste disposal well in accordance with all applicable Federal, State, and local regulations and requirements (40 CFR 144.82(b)).

EPA has not promulgated new requirements for well closure. However, the rule states that:

- Wells must be closed in a manner that prevents movement of contaminated fluid that may endanger USDWs.
- Any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well must be disposed or managed in accordance with all applicable Federal, State, and local regulations and requirements.

4.D. Reporting Requirements

(i) Owners and Operators

Owners and operators of large-capacity cesspools are required to submit pre-closure notifications to Class V Primacy States and EPA Regional Offices (with DI Programs) 30 days prior to well closure (40 CFR 144.88(a)(1)(ii)).

(ii) Primacy States and EPA Regions with DI Programs

Primacy States and EPA Regions with DI Programs will need to review pre-closure notifications for large-capacity cesspools and maintain records associated with these pre-closure notices. In addition, Primacy States will need to submit requested summary information of their Class V programs to EPA Regional Offices, based upon the agreements between the States and the EPA Regions (e.g., inventory, inspections, noncompliance evaluation, pre-closure notifications, and closure witnessed).

(iii) EPA Regions

EPA Regions will need to compile summary information (e.g., inventory, inspections, noncompliance evaluation, pre-closure notifications, and closure witnessed at the State level) for submission to EPA Headquarters.

A summary of the information flow among owners and operators of large-capacity cesspools, Primacy States, and EPA is presented in Table 4.1.

Table 4.1 - Information Flow Among Large-Capacity Cesspool Owners and Operators, Primacy States, and EPA

| Submission of Information from | to Primacy States | to EPA Regions | to EPA Headquarters |
|---|--|---|---|
| Well owners and operators in Primacy States | Inventory information and pre-closure notice | | |
| Well owners and operators in DI States | | Inventory information and pre-closure notice | |
| Primacy States | | Summary of inventory, inspections, noncompliance evaluation, pre-closure notifications, and closure witnessed | |
| EPA Regions | | | Summary of inventory, inspections, noncompliance evaluation, pre-closure notifications, and closure witnessed |

EPA is currently revising and updating the 7520 Forms to streamline UIC Program's reporting requirements. The final 7520 Forms will be used to facilitate reporting of Class V activities at the State and EPA Region levels.

4.E. General Requirements for Endangering Large-Capacity Cesspools

All large-capacity cesspools have the potential to endanger USDWs. States can and should use existing authorities to take any appropriate enforcement actions against the owner and operator of an imminently endangering well to ensure protection of USDWs.

The deadline date associated with the Class V Rule for existing large-capacity cesspools (i.e., closure by April 5, 2005) would not be applicable for wells that are found to be an imminent endangerment to USDWs.

4.F. Jurisdictional Issues

Cesspools of varying sizes are currently regulated at different governmental levels in different States. In many States, onsite wastewater disposal systems are regulated either by the State Department of Health or by local departments or boards of health (e.g., town, city, or county board of health). These non-UIC programs are responsible for meeting UIC program requirements when regulating large-capacity cesspools. However, State and UIC Programs, and

Regions for DI States, are ultimately responsible for ensuring that the new requirements for large-capacity cesspools are implemented.

Given the multitude of authorities in regulating and managing large-capacity cesspools, it is essential for the UIC program to coordinate activities with the appropriate agencies to effectively implement the Class V Rule requirements for large-capacity cesspools. Joint jurisdiction (across more than one agency) can be confusing to large-capacity cesspool owners and operators, and such an arrangement would subject them to unexpected liability, especially if these authorities fail to coordinate with the other(s). For example, a local or State agency can do the public a disservice by either passively allowing or legally permitting the construction and operation of large-capacity cesspools that are banned by the Class V Rule.

The State UIC Programs need to work with the appropriate agencies in their State to ensure that all requirements are consistent with the ban. In order to identify areas of joint jurisdiction, and to ensure that these non-UIC programs are meeting the UIC program requirements, each State's Primacy Revision Package must include a description of any agreements with other agencies in the State. The program description should also document how the UIC Program has determined that these non-UIC program requirements are consistent with the UIC regulations, and describes what mechanisms are in place to ensure ongoing coordination within and between agencies. The Primacy Agency is still responsible for the requirements of the rule.

Furthermore, the UIC Programs of Primacy States may transfer part of their authorities to other agencies (e.g., health departments) to:

- Oversee the closure of large-capacity cesspools, and
- Ensure no new large-capacity cesspools are constructed.

This transfer of authorities can be accomplished by providing technical assistance to these agencies and through Memoranda of Understanding between the State UIC programs and these agencies.

For States with EPA administered Class V UIC programs, EPA will work with the State to provide technical assistance to the appropriate agencies (e.g., health departments) to oversee the closure of large-capacity cesspools. In addition, EPA Regions may transfer part of their authorities to the States to oversee the closure of large-capacity cesspools. This transfer of authorities can be accomplished by providing technical assistance to the States and through Memoranda of Understanding between the EPA Regional Offices and the States.

SECTION 5 NEW REQUIREMENTS FOR MOTOR VEHICLE WASTE DISPOSAL WELLS

5.A. Nationwide Ban of New Motor Vehicle Waste Disposal Wells

All new motor vehicle waste disposal wells (construction started after April 5, 2000), regardless of their locations, are banned as of April 5, 2000 nationwide.

Under the ban, floor drains at motor vehicle service bays may no longer be connected to septic systems or dry wells. States should notify the appropriate organizations and individuals to make sure that new motor vehicle waste disposal wells are no longer allowed. These agencies include: health departments, plumbing associations, construction contractors, septic system installers, and building inspectors.

5.B. Requirements for Existing Motor Vehicle Waste Disposal Wells

5.B.1 Inventory Requirements for Wells Under Construction Before April 5, 2000 in DI States

Under the new Class V requirements, owners and operators of all Class V injection wells (including motor vehicle waste disposal wells) in DI States must submit inventory information on their new Class V wells prior to constructing their wells (40 CFR 144.83(a)(1)(i)). Because new motor vehicle waste disposal wells are banned as of April 5, 2000, this new inventory requirement in DI States would no longer be needed for motor vehicle waste disposal wells after April 5, 2000. As for motor vehicle waste disposal wells that are under construction prior to April 5, 2000, the well owners or operators must submit inventory information to EPA before using their wells (40 CFR 144.83(a)(1)(ii)).

Owners or operators of existing motor vehicle waste disposal wells in DI States that have not submitted inventory information of their wells must cease injection and submit inventory information. A well owner or operator is not allowed to inject into the well if they fail to submit inventory information. Upon submission of inventory information, a well owner or operators must wait 90 days before resuming injection, unless they receive notice from EPA that injection may not be resumed or may resume sooner.

5.B.2. Pre-Closure Notification

The pre-closure notification requirement is a new addition to the existing UIC regulations and it applies to owners and operators in both Primacy States and DI States and Tribes Before

closing a motor vehicle waste disposal well, owners or operators must notify the State or EPA UIC program director of their intent to close the well at least 30 days prior to well closure (40 CFR 144.88(b)(1)(vii)).

EPA has developed the "Class V Well Pre-Closure Notification Form" (OMB No. 2040-0214) for DI programs. A copy of the form is available in Appendix E. States may use their own pre-closure notification systems, or adopt all or part of the EPA form for their own use.

5.B.3. Well Closure Requirements

A well may be closed 30 days after submission of the pre-closure notification. All Class V wells must be closed in a manner that prevents movement of contaminated fluid into USDWs, which may cause a violation of the primary drinking water or other health-based standards, or adversely affect public health (40 CFR 144.89(a)). State and EPA UIC Programs may have additional or more specific closure requirements that address their unique situations. An owner or operator may also need to dispose or manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the waste disposal well in accordance with all applicable Federal, State, and local regulations and requirements (40 CFR 144.82(b)).

EPA has not promulgated new requirements for well closure. However, the rule states that:

- All Class V wells must be closed in a manner that prevents movement of contaminated fluid that may endanger USDWs.
- Any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well must be disposed or managed in accordance with all applicable Federal, State, and local regulations and requirements.

5.B.4. Permit Requirements

The Class V rule bans existing motor vehicle waste disposal wells in ground water protection areas and other sensitive ground water areas. However, UIC Directors can grant a waiver from the ban and issue a permit. UIC Directors should use their best judgment when issuing waivers from the ban, and consider factors such as maintenance of treatment systems, potential for impacting water systems, a facility's compliance history, and records showing waste recycling. Owners and operators of motor vehicle waste disposal wells located in ground water protection areas and other sensitive ground water areas may apply a waiver from the ban and obtain a permit to continue operating their wells. They must comply with the permit by the end of the compliance period.

The Class V rule:

- Bans existing motor vehicle waste disposal wells in ground water protection area and other sensitive ground water areas
- Allows UIC Directors to waive the ban and issue permits

Owners and operators of existing motor vehicle waste disposal wells should apply for permits within 90 days of the geographically-based effective date or as early as possible to insure they are authorized to operate under a permit by the compliance date.

In addition to the permit requirements found in 40 CFR 144.25 and 40 CFR 144.27 (as required by DI Programs), State permits for motor vehicle waste disposal wells must include the following permit conditions:

- (1) Fluids released in motor vehicle waste disposal wells must meet the primary drinking water standards and other appropriate health-based standards (as determined by the UIC Program Director) *at the point of injection*.
- (2) Best management practices (BMPs) that must be followed as specified in the permit.
- (3) Monitoring requirements for injectate and sludge, (if present in dry wells or tanks holding injectate) both initially and on a continuing basis, must be specified in order to demonstrate compliance with the drinking water and other health-based standards. The frequency of monitoring shall be determined by the UIC Program Director and specified in the permit.

5.B.5. Monitoring Requirements

The Class V Rule does not specify monitoring requirements. Instead, establishing specific monitoring requirements is at the discretion of the UIC Program when developing the permit.

EPA has not set standards for monitoring requirements for motor vehicle waste disposal wells, leaving the specificity to the discretion of the UIC Program. EPA, however, believes that

all motor vehicle waste disposal well permits should specify the following kinds of monitoring requirements:

- (1) Owners or operators should be required to characterize the quality of their injectate and any sludge.
- (2) If liquid from the sludge has chemical concentrations below the drinking water MCL and other health-based standards, owners or operators might be required to analyze the injectate quarterly for the first three years and then annually if it is consistently below the drinking water standards and other health-based standards. They also might be required to analyze their sludge annually.
- (3) If the injectate is below the drinking water MCL and other health-based standards, but liquid from the sludge is above the appropriate standards, then owners or operators might have to follow the same monitoring requirement as (2), in addition to pump and properly dispose of their sludge.
- (4) If the injectate is above the drinking water MCL or health-based standards, the owners or operators would need to:
 - (a) Install treatment to meet permit requirements to meet drinking water MCL and other health-based standards at the point of injection;
 - (b) Pump and properly dispose of their sludge;
 - (c) Perform quarterly sampling of injectate for the first three years and then annually if consistently below the drinking water MCL and other health-based standards;
 - (d) Perform annual sampling of the sludge;
 - (e) Other requirements established by the State to protect USDWs (e.g., ground water monitoring and non-degradation requirements). or;
 - (f) Close the well.

5.B.6. Extension of Compliance Date

The UIC Director (States and EPA) may grant a one-year extension to well owners and operators if the most efficient compliance option is connection to sanitary sewer or installation of

new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

5.C. Reporting Requirements

(i) Owners and Operators

Permit applicants must keep records of all data used to complete permit applications and any supplemental information submitted with the permits for a period of at least three years from the date when the application is signed. As a condition of the permit, well owners and operators must submit all monitoring reports to the UIC Program. Owners and operators who close their motor vehicle waste disposal wells must submit pre-closure notifications prior to closing their wells.

(ii) Primacy States and EPA with DI Programs

Primacy States and EPA with DI Programs will need to review permit applications and issue permits, review monitoring data submitted by owners and operators of permitted motor vehicle waste disposal wells, and review pre-closure notifications for motor vehicle waste disposal wells. The Primacy States and EPA will also maintain records associated with these activities. Furthermore, Primacy States will continue to submit summary information on the activities of their Class V programs to EPA Regional Offices (on the EPA 7520 series of UIC reporting forms).

(iii) EPA Regions

EPA Regions will continue to compile summary information on State and DI Program activity for submission to EPA Headquarters.

A summary of the information flow between owners and operators of motor vehicle waste disposal wells, Primacy States, and EPA is presented in Table 5.1.

Table 5.1 - Information Flow Among Well Owners and Operators, Primacy States, and EPA

| Submission of Information <i>from</i> | <i>to</i> Primacy States | <i>to</i> EPA Regions | <i>to</i> EPA Headquarters |
|---|--|--|---|
| Class V injection well owners and operators in Primacy States | Inventory information, permit applications, monitoring reports, and pre-closure notice | | |
| Class V injection well owners and operators in DI States | | Inventory information, permit applications, pre-closure notice, monitoring reports | |
| Primacy States | | Summary of inventory, permit review and issuance, inspections, noncompliance evaluation, pre-closure notifications, and closures witnessed | |
| EPA Regions | | | Summary of inventory, permit review and issuance, inspections, noncompliance evaluation, pre-closure notifications, and closure witnessed |

EPA is currently revising and updating the 7520 Forms to streamline UIC Program's reporting requirements. The final 7520 Forms will be used to facilitate reporting of Class V activities at the State and EPA Region levels.

5.D. General Requirements for Endangering Motor Vehicle Waste Disposal Wells

All motor vehicle waste disposal wells have the potential to endanger USDWs regardless of whether they are located in ground water protection areas, sensitive ground water areas, or areas that are not identified as critical ground water areas. States should use existing authorities to take any appropriate enforcement actions against the owner or operators of an imminently endangering well to ensure the protection of USDWs.

The compliance dates associated with the Class V Rule for motor vehicle waste disposal wells (i.e., the various geographically-based compliance dates) are not applicable to wells that are found to be an imminent endangerment to USDWs.

5.E. Other Issues Associated with Motor Vehicle Waste Disposal Wells**5.E.1. Storm Water Drainage Wells**

Storm water drainage wells located at motor vehicle service facilities that are designed for storm water management but also may receive insignificant amounts of fuel due to unintentional small volume leaks, drips, or spills at the fuel pumps are not considered to be motor vehicle waste disposal wells. These drainage wells are not subject to the new Class V rule requirements. However, these wells continue to be subject to the non-endangerment provision. EPA is developing a guidance to assist Regions, States and owners and operators of this type of well to determine if wells are motor vehicle waste disposal wells or storm water drainage wells. A copy of the draft guidance on determining the status of storm water drainage wells located at motor vehicle service facilities will be included in Appendix H.

5.E.2. Conversion of Motor Vehicle Waste Disposal Wells to Other Class V Wells

State or EPA may authorize the conversion or reclassification of a motor vehicle waste disposal well to another type of Class V well. Motor vehicle waste disposal wells may only be converted to receive other fluids (e.g., snow melt and exterior carwash water), if all motor vehicle-related fluids are segregated by a physical barrier and are not allowed to enter the well. EPA also believes that in order to meet the requirements for well conversion, owners and operators of converted Class V injection wells in motor vehicle service facilities will need to implement BMPs and physical segregation of motor vehicle waste fluids from the injection wells. In addition, a well conversion decision will be based on a facility's compliance history and its records of proper waste disposal (i.e., ensure unlikelihood for motor vehicle waste to enter the well). Finally, the use of a semi-permanent plug as the means to segregate waste is not sufficient to convert a motor vehicle waste disposal well to another type of Class V well. EPA is developing a guidance for the conversion of motor vehicle waste disposal wells and it will be included in Appendix I.

SECTION 6 IMPLEMENTATION TIME LINE FOR EXISTING MOTOR VEHICLE WASTE DISPOSAL WELLS IN GROUND WATER PROTECTION AREAS

6.A. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in Ground Water Protection Areas with Assessments Completed by January 1, 2004

Owner or operator of a motor vehicle waste disposal well located within a ground water protection area will have one year from the completion of the assessment to either close the well or operate the well under permit conditions. The State and EPA (for DI States) may grant a one-year extension to well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A number of Primacy States may complete some of their local assessments for ground water protection areas before they have revised their Class V UIC Programs. In these cases, owners and operators of existing motor vehicle waste disposal wells located in ground water protection areas (with completed assessments) will have one year from the date of EPA's approval of their States' Class V UIC program revisions to comply with the new Class V requirements. Again, the States and EPA may grant a one-year extension to motor vehicle waste disposal well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

Compliance Date for Motor Vehicle Waste Disposal Wells in Ground Water Protection Areas with Completed Local Source Water Assessments:

- One year from the completion date of the local assessment; or
- One year from the date of EPA's approval of a State's revised UIC program, whichever is later.

Note: States and EPA may grant a one-year extension to well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in ground water protection areas with completed assessments is presented in Table 6.1 and Exhibit 6-1.

Table 6.1 - Time Line for Motor Vehicle Waste Disposal Wells Located in Ground Water Protection Areas with Completed Assessments

| State Action | Owner and Operator Action | Requirement Date |
|---|-------------------------------------|---|
| Completion of Source Water Assessments (before EPA approves the primacy revision) | Apply for a permit | Within 90 days after EPA approves the primacy revision (recommended) |
| | Operate under permit conditions, or | Within 1 year after EPA approves the primacy revision, unless granted an extension to comply (up to 1 year) |
| | Close the well | |
| Completion of Source Water Assessments by January 1, 2004 | Apply for a permit | Within 90 days after the assessment completion date (recommended) |
| | Operate under permit conditions, or | Within 1 year after the assessment completion date, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

Because States must complete all local assessments for ground water protection areas by January 1, 2004, the latest compliance date for affected motor vehicle waste disposal well owners and operators is January 1, 2005, unless they are granted an extension of up to one year.

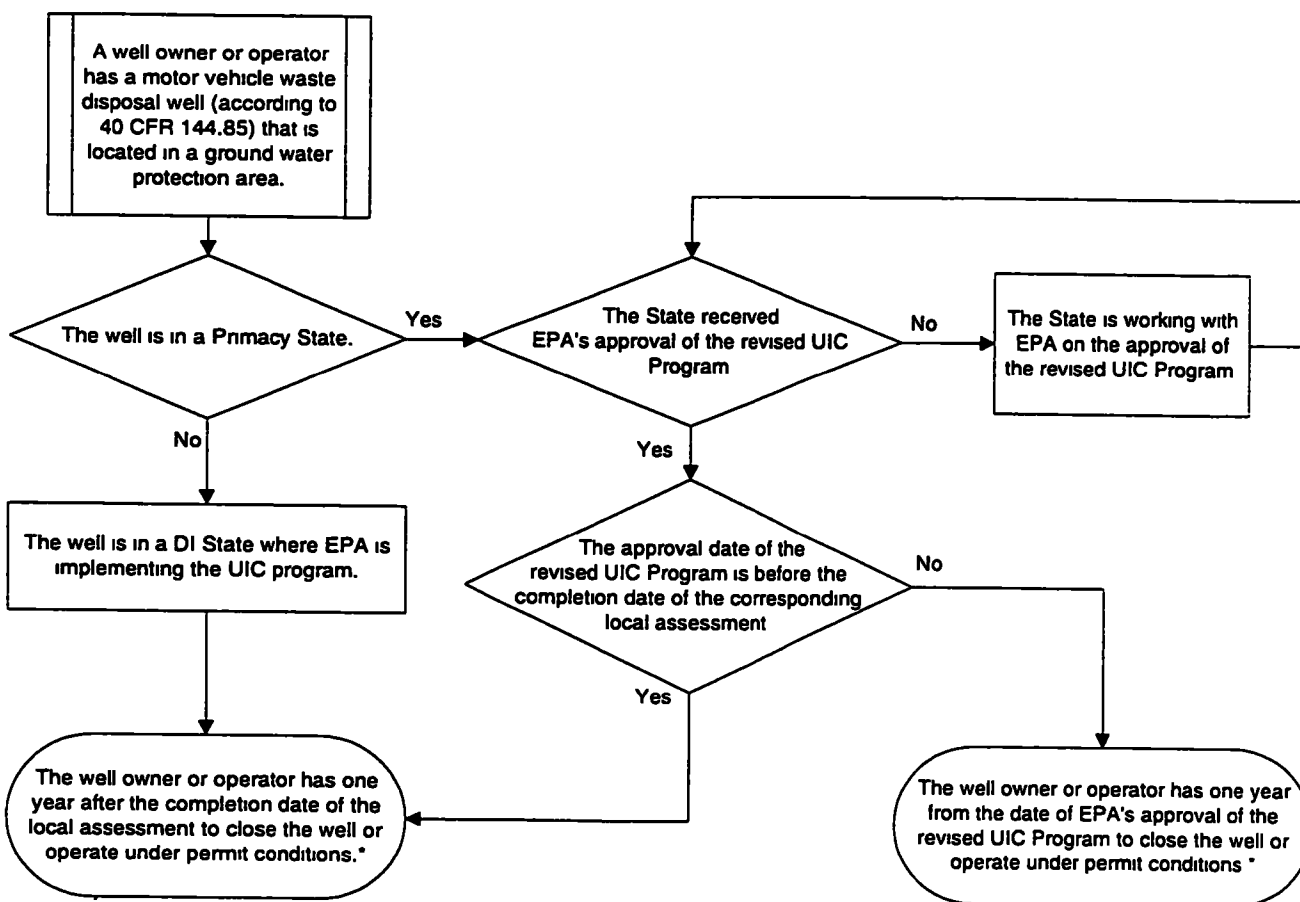
6.B. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in New Ground Water Protection Areas with Assessments Completed After January 1, 2004

After January 1, 2004, new ground water protection areas may be designated by States for new CWSs and NTNCWSs that use ground water as a source. In addition, States may officially re-delineate the boundaries of previously delineated ground water protection areas to include additional areas. Motor vehicle waste disposal wells located in these newly assessed ground water areas will have one year to comply with the Class V Rule requirements. Again, the States and EPA may grant a one-year extension to well owners and operators, on a case by case basis.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in ground water protection areas is presented in Exhibit 6-1.

Exhibit 6-1 **Compliance Dates for Existing Motor Vehicle Waste Disposal Wells** **in Ground Water Protection Areas with Completed Assessments**

A State must complete all assessments of ground water protection areas by January 1, 2004 unless it is granted a one-year extension to complete its assessments by January 1, 2005.



* The well owner or operator can apply for a one-year extension if his or her compliance option is connection to a sanitary sewer or installation of new treatment technologies. On a case by case basis, the State or EPA UIC Program will review the application for approval. This one-year extension, however, does not apply to the permit application deadline.

After the completion of the assessments of ground water protection areas, a motor vehicle waste disposal well located outside these ground water protection areas may be affected by the Class V Rule if:

- The State completes the assessment for a new ground water protection area for a new CWS or NTNCWS that uses ground water as a source.
- The State re-delineates the boundaries of a previously delineated ground water protection area.

6.C. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in Ground Water Protection Areas in States that Receive up to a One-Year Extension to Complete Their Assessments

If a State has made reasonable progress in completing its local assessments for ground water protection areas but require more time to complete all the local assessments beyond the January 1, 2004 deadline, the State can apply to EPA for an extension. Applications for extensions must be submitted by June 1, 2003, and the State has to show that it has made reasonable progress in completing the assessment. EPA may grant up to a one-year extension for a State to complete the remaining assessments (i.e., up to January 1, 2005).

Owners and operators of motor vehicles wells will have one year from the completion of a local assessment to comply with the requirements of the Class V rule, with the latest date being January 1, 2006. Again, the State may grant a one-year extension to well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in ground water protection areas in States that received an extension to complete their assessments is presented in Table 6.2 and Exhibit 6-1.

Table 6.2 - Time Line for Motor Vehicle Waste Disposal Wells Located in Ground Water Protection Areas in States that Receive an Extension

| State Action | Owner and Operator Action | Requirement Date |
|---|-------------------------------------|--|
| Completion of All Local Assessment of Ground Water Protection Areas by the Extended Deadline of January 1, 2005 | Apply for a permit | Within 90 days after the assessment completion date (recommended) |
| | Operate under permit conditions, or | Within 1 year after the assessment completion date, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

Because a State must complete all local assessments for ground water protection areas by the extended deadline of January 1, 2005 to avoid statewide application of the requirements for motor vehicle waste disposal wells, the latest compliance deadline for affected well owners and operators is January 1, 2006.

6.D. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in States that Fail to Complete Their Assessments by January 1, 2004

As discussed in Section 3.B, EPA believes that all States will complete their source water assessments for ground water protection areas by the given deadline. The following compliance dates are included to present all possible compliance dates.

If a State fails to complete its local assessments for ground water protection areas and is not eligible for an extension, the Class V Rule requirements will apply statewide on January 1, 2004. Owners and operators of all motor vehicle waste disposal wells, regardless of their locations, would then have one year (i.e., by January 1, 2005) to close their wells or operate their wells under permit conditions. The State may grant a one-year extension to well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells in States that fail to complete their assessments by January 1, 2004 is presented in Table 6.3.

Table 6.3 - Time Line for All Motor Vehicle Waste Disposal Wells Located in States that Fail to Complete Their Local Assessments of Ground Water Protection Areas

| State Action | Owner and Operator Action | Requirement Date |
|--|-------------------------------------|--|
| Fail to Complete Local Assessments of Ground Water Protection Areas by the original January 1, 2004 deadline and do not receive an extension | Apply for a permit | By early 2004 (recommended) |
| | Operate under permit conditions, or | By January 1, 2005, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

6.E. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in States that Receive an Extension but Fail to Complete Their Assessments by January 1, 2005

As discussed in Section 3.B, EPA believes that all States will complete their source water assessments for ground water protection areas by the given deadline. The following compliance dates are included to present all possible compliance dates.

If a State receives a one-year extension but fails to complete its local assessments for ground water protection areas by the extended deadline, the Class V Rule requirements will apply statewide on January 1, 2005. Owners and operators of all motor vehicle waste disposal wells, regardless of their locations, would then have one year to close their wells or operate their wells under permit conditions (i.e., by January 1, 2006). The State may grant a one-year extension to motor vehicle waste disposal well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells in States that fail to complete their assessments by January 1, 2005 is presented in Table 6.4.

Table 6.4 - Time Line for All Motor Vehicle Waste Disposal Wells Located in States that Receive an Extension but Fail to Complete Their Local Assessments of Ground Water Protection Areas

| State Action | Owner and Operator Action | Requirement Date |
|---|-------------------------------------|--|
| Fail to Complete Local Assessments of Ground Water Protection Areas by the extended deadline of January 1, 2005 | Apply for a permit | By early 2005 (recommended) |
| | Operate under permit conditions, or | By January 1, 2006, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

SECTION 7 IMPLEMENTATION TIME LINE FOR EXISTING MOTOR VEHICLE WASTE DISPOSAL WELLS IN OTHER SENSITIVE GROUND WATER AREAS

7.A. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in Other Sensitive Ground Water Areas with Delineation Completed by January 1, 2004

Apart from ground water protection areas, the Class V Rule also applies to existing motor vehicle waste disposal wells in other sensitive ground water areas to be delineated by individual States and EPA Regions (for DI States). To avoid statewide application of the Class V rule requirements, States and EPA Regions must delineate other sensitive ground water areas by January 1, 2004.

If a State, or an EPA Region for a DI State, has completed its sensitive ground water area delineation by January 1, 2004, owners and operators of wells in these sensitive ground water areas will have until January 1, 2007 to close their wells or operate their wells under permit conditions. The States or EPA may grant a one-year extension to motor vehicle waste disposal well owners and operators, on a case by case basis, if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in other sensitive ground water areas with delineation completed by January 1, 2004 is presented in Table 7.1 and Exhibit 7-1.

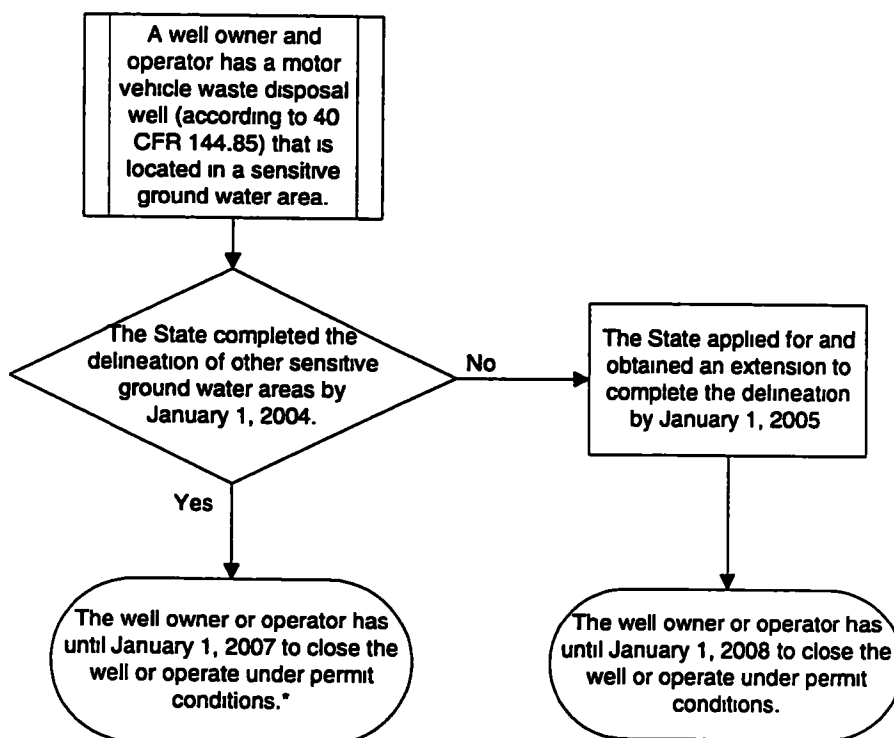
Table 7.1 - Time Line for Motor Vehicle Waste Disposal Wells Located in Other Sensitive Ground Water Areas with Delineation Completed by January 1, 2004

| State Action | Owner and Operator Action | Requirement Date |
|--|-------------------------------------|--|
| Completion of Delineation of Other Sensitive Ground Water Areas by January 1, 2004 | Apply for a permit | As soon as practical (recommended) |
| | Operate under permit conditions, or | By January 1, 2007, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

Exhibit 7-1

Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in Other Sensitive Ground Water Areas

A State must complete the delineation of other sensitive ground water areas by January 1, 2004 unless it is granted a one-year extension to complete the delineation by January 1, 2005.



* The well owner or operator can apply for a one-year extension if his or her compliance option is connection to a sanitary sewer or installation of new treatment technologies. On a case by case basis, the State and EPA UIC Program will consider review the application for approval. This one-year extension, however, does not apply to the permit application deadline. In addition, this one-year extension is not available when a State is granted a one-year extension to complete its delineation of other sensitive ground water areas.

7.B. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in Other Sensitive Ground Water Areas of States that Receive up to a One-Year Extension to Complete Their Delineation

If a State has made reasonable progress in completing its delineation of other sensitive ground water areas but require more time to complete its delineation beyond the January 1, 2004 deadline, the State can apply to EPA for an extension for up to one year. An application for extension must be submitted by June 1, 2003. If a State receives a one-year extension to delineate other sensitive ground water areas (i.e., with a new deadline of January 1, 2005), affected well owners and operators will have until January 1, 2008 to comply with the Class V Rule requirements. In this case, the State may not grant a one-year compliance extension to well owners and operators. Therefore, the last possible compliance date for affected motor vehicle waste disposal wells in other sensitive ground water areas is January 1, 2008.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in other sensitive ground water areas with delineation completed by the extended deadline of January 1, 2005 is presented in Table 7.2 and Exhibit 7-1.

Table 7.2 - Time Line for Motor Vehicle Waste Disposal Wells Located in Other Sensitive Ground Water Areas of States that Receive an Extension to Complete Their Delineation

| State Action | Owner and Operator Action | Requirement Date |
|---|-------------------------------------|---|
| Completion of Delineation of Other Sensitive Ground Water Areas by the extended deadline of January 1, 2005 | Apply for a permit | As soon as practical but no later than early 2007 (recommended) |
| | Operate under permit conditions, or | By January 1, 2008 |
| | Close the well | |

Note The one-year extension to well owners and operators is not applicable when a State is granted a one-year extension to complete its delineation, that is, the last possible compliance date for affected wells is January 1, 2008

7.C. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in States that Fail to Delineate Other Sensitive Ground Water Areas by January 1, 2004

As discussed in Section 3.D, EPA believes that all States will complete their other sensitive ground water delineations by the given deadline. The following compliance dates are included to present all possible compliance dates.

If a State does not complete its delineation of other sensitive ground water areas by the January 1, 2004 deadline and is not eligible for an extension, the Class V Rule requirements will apply statewide. Owners and operators of all motor vehicle waste disposal wells, regardless of their locations, would then have to close their wells or operate their wells under permit conditions by January 1, 2007, unless they are under a different compliance schedule as described in Section 6 (i.e., their wells are located in ground water protection areas). The State may grant a one-year extension to well owners and operators, on a case by case basis, if the most efficient compliance

option is connection to a sanitary sewer or installation of new treatment technologies. This one-year extension, however, does not apply to the permit application deadline.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in States that fail to delineate other sensitive ground water areas by January 1, 2004 is presented in Table 7.3.

Table 7.3 - Time Line for All Motor Vehicle Waste Disposal Wells Located in States that Fail to Delineate Other Sensitive Ground Water Areas by January 1, 2004

| State Action | Owner and Operator Action | Requirement Date |
|--|-------------------------------------|--|
| Fail to Complete Delineation of Other Sensitive Ground Water Areas by the January 1, 2004 deadline | Apply for a permit | As soon as practical (recommended) |
| | Operate under permit conditions, or | By January 1, 2007, unless granted an extension to comply (up to 1 year) |
| | Close the well | |

7.D. Compliance Dates for Existing Motor Vehicle Waste Disposal Wells in States that Receive an Extension but Fail to Complete Their Delineation by January 1, 2005

As discussed in Section 3.D, EPA believes that all States will delineate other sensitive ground water areas within the given timeframe and that the statewide application will not be applied due to failure to complete delineations. However, compliance deadlines are outlined below for consistency.

If a State seeks and is granted an extension for up to one year from the January 1, 2004 deadline to delineate other sensitive ground water areas but then fails to complete its delineation by the extended deadline of January 1, 2005, the Class V Rule requirements will apply statewide. Owners and operators of all motor vehicle waste disposal wells, regardless of their locations, would then have to close their wells or operate their wells under permit conditions by January 1, 2008, unless they are under a different compliance schedule as described in Section 6 (i.e., their wells are located in ground water protection areas).

If a State is granted an extension to complete its delineation of other sensitive ground water areas, it may not grant the one-year compliance extension to well owners and operators. Therefore, the last possible compliance date for affected wells is January 1, 2008.

A summary of the compliance dates for owners and operators of motor vehicle waste disposal wells located in States that fail to delineate other sensitive ground water areas with delineation completed by the extended deadline of January 1, 2005 is presented in Table 7.5.

Table 7.5 - Time Line for All Motor Vehicle Waste Disposal Wells Located in States that Receive an Extension but Fail to Complete Their Delineation of Other Sensitive Ground Water Areas

| State Action | Owner and Operator Action | Requirement Date |
|--|-------------------------------------|---|
| Fail to Complete Delineation of Other Sensitive Ground Water Areas by the extended deadline of January 1, 2005 | Apply for a permit | As soon as practical but no later than early 2007 (recommended) |
| | Operate under permit conditions, or | By January 1, 2008 |
| | Close the well | |

Note. The one-year extension to well owners and operators is not applicable when a State is granted a one-year extension to complete its delineation, that is, the last possible compliance date for affected wells is January 1, 2008

SECTION 8 OTHER CHANGES TO THE UIC REGULATION

The Class V rule makes changes in three other areas that are related to the other aspects of the UIC Program:

- (1) Reclassification of radioactive waste disposal wells.
- (2) Rule authorization of hazardous Class IV wells used for site cleanups authorized under both Federal and State Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) actions.
- (3) Addition of plugging and abandonment requirements for Class IV and Class V wells.

In addition, the Class V Rule provides an expanded definition of the point of injection.

8.A. Reclassification of Radioactive Waste Disposal Wells

The Class V Rule revises 40 CFR 144.6(a) and 146.5(a) by adding a paragraph (3) to move Class V radioactive waste disposal wells injecting below all USDWs into the Class I category. These radioactive waste disposal wells are similar to other Class I wells in terms of their design, the nature of the injected fluids, and their potential to endanger USDWs. In addition, similar to other Class I wells, they inject below all USDWs and therefore warrant the same level of control. EPA believes that all of the radioactive waste disposal wells are located in Texas and are regulated as Class I wells.

In order to protect USDWs from radioactive waste disposal wells, EPA believes that the Class I requirements related to permitting, construction, operation, monitoring, reporting, mechanical integrity testing, area of review, and plugging and abandonment are applicable to these wells. Therefore, EPA has determined to reclassify Class V wells that inject radioactive waste below the lowermost USDW as Class I wells and subject them to the full set of existing Class I requirements. Such a reclassification is administratively simpler and more streamlined than keeping radioactive waste disposal wells in the Class V category and developing additional requirements (i.e., identical to the Class I requirements) under the Class V program.

The reclassification of radioactive waste disposal wells from the Class V category to the Class I category does not affect the disposal of naturally occurring radioactive material (NORM) in Class II wells as part of oil and gas field operations. The injection of fluid associated with oil and gas production, including fluids containing NORM, will continue to be regulated under existing Class II UIC regulations or under applicable regulations prescribed by the Primacy State agency.

Note: Section 144.26 is amended by revising paragraph (b)(1)(iii)(B) and Section 146.5 is amended by revising paragraph (e)(11) by stating "Radioactive waste disposal wells that are not Class I wells."

8.B. Rule Authorization of Class IV Wells Used in Site Cleanup and Remediation

The Class V Rule added a new paragraph (c) to 40 CFR 144.23 to clarify the status of injection wells of hazardous waste used in site cleanup and remediation (as a type of Class IV wells). If the injection wells are used to inject treated contaminated ground water (but still considered to be a hazardous waste) into the same formation from which it was withdrawn, they are authorized by rule for the life of the wells, provided that such injection activity is approved by EPA or a State pursuant to provisions for the cleanup of contaminant releases under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 or the Resource Conservation and Recovery Act (RCRA) of 1976. On the other hand, voluntary cleanup efforts (i.e., not covered under the CERCLA and RCRA provisions) are not allowed to operate Class IV wells for site cleanup and remediation. The rule change does expand the authorization of these wells to State programs as well as Federally run CERCLA and RCRA programs.

8.C. Addition of Plugging and Abandonment Requirements for Class IV and Class V Wells

The Class V Rule revises 40 CFR 146.10 by adding plugging and abandonment requirements for Class IV and Class V wells. Prior to abandoning any Class IV well, the owner or operator must notify State and EPA UIC programs of his or her intent to abandon the well at least 30 days prior to abandonment. Then, the well owner or operator shall plug or close the well in a manner acceptable to EPA. [Note: Because 40 CFR 144.23(b) is only applicable to EPA administered programs, by reference, the Class IV requirement at 40 CFR 146.10 (Plugging and abandoning) is then only applicable to EPA administered programs.]

For Class V wells, prior to abandoning a well, the owner or operator must notify the UIC program at least 30 days prior to well closure. The well owner or operator must then close the well in a manner that prevents the movement of fluid containing any contaminant into a USDW, if the presence of that contaminant may cause a violation of any primary drinking water regulation or may adversely affect public health. In addition, the owner or operator must dispose or manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the closed well in accordance with all applicable Federal, State, and local regulations and requirements.

8.D. Definition of Point of Injection

The point of injection for a Class V well is the last accessible sample point before the release of waste fluids into the subsurface environment. For example, the point of injection of a Class V septic system might be the distribution box – the last accessible sampling point before the waste fluids drain into the leach field and the underlying soils. For a dry well, it is likely to be the well bore itself. EPA is developing a guidance for determining the point of injection and it can be found in Appendix J.

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SECTION 9 PRIMACY REVISION APPLICATION PROCESS

To be in compliance with the Safe Drinking Water Act, you must demonstrate to the EPA that your State's statutes, regulations, forms, procedures and other primacy elements, include requirements equivalent to, or more stringent than the new minimum Federal requirements for Class V wells published in the Federal Register on December 7, 1999 (64 FR 68546). The purpose of this implementation guide is to help you prepare a primacy revision application that will satisfy the new minimum Federal requirements for Class V wells, hereafter referred to as the Class V rule. Throughout the guide are references to the location of the minimum Federal requirements in the Code of Federal Regulations (CFR), (for example, "Procedures for Revision of State Programs" at 40 CFR 145.32). We have also provided three "short forms" at the end of this guide to reduce your application workload. These are the forms: (1) the Program Description Guide; (2) the Primacy Revision Crosswalk; and (3) the State Primacy Revision Checklist. These forms describe exactly what information that the EPA requires in your primacy revision application.

- A. Does My State have to submit a primacy revision application to the EPA?

Contact your EPA Regional Office to find out if your current §1422 program requires "substantial" or "non substantial" revisions to comply with the Class V rule.

The Regional Office will tell you if your program revisions are substantial or non substantial. Substantial revisions are rule making and must be approved by the EPA Administrator. This means that you must submit a primacy revision application. Non substantial revisions do not require rule making, and can be approved by a letter from the Regional Administrator to the Governor. This means that *you may not* have to submit a primacy revision application.

Your EPA Regional Office will also explain the revision process, help you prepare the application, provide you the short forms in electronic format, and establish a timetable for the draft and final applications.

- B. When am I Required to Submit a Primacy Revision Application to the EPA?

You must submit a complete and final primacy revision application to your Regional office no later than December 29, 2000.

The new Class V rule, is effective on April 5, 2000, which is 120 days after the publication date, December 7, 1999. As a State with primary enforcement authority (primacy) for Class V wells, you have 270 days from the effective date of the rule to

submit a revised primacy application to maintain primacy for the UIC Program under §1422 of SDWA. (See: §145.32(e))¹.

Within that time frame you should:

- (1) Review your existing program in light of the new Class V Rule
- (2) Determine what programmatic changes you need to make
- (3) Adopt new statutes and/or regulations as necessary
- (4) Submit a final primacy revision package to the EPA.

We encourage you to incorporate the Class V rule into your State statutes and regulations, forms, procedures and other primacy elements, and submit a complete and final primacy revision application to your EPA Regional Office at the earliest possible date.

Early submission will expedite the EPA's review and approval of your application. Please contact the Office of the *Federal Register* for its format and content requirements for publication.

C. What is the EPA's Process for a State Program Revision?

We recommend you apply for program approval in a two-step process.

STEP ONE: Submit a draft of your application to the Regional Office before you submit a final.

The EPA's step one is optional, but should greatly reduce your workload and will definitely expedite our review and approval of your application. We recommend that you discuss the advantages of submitting a draft with your Regional Office. Review of draft materials allows the EPA to identify any significant issues and resolve them with you prior to the formal review of the final revision application. The Regional Office will determine what you need to include in the draft application and when you need to send it.

We will make every effort to provide comments on each draft submission within 45 days of receiving the document(s), and are committed to completing all draft reviews within 60 days.

¹40 CFR 145.32(e) requires that you submit this information within 270 days of any amendment to 40 CFR Parts 144, 145, 146, or 124 that "revises or adds any requirement respecting an approved UIC program." Since the Class V rule amends portions of Parts 144, 145, and 146, this 270-day time frame applies to all §1422 programs.

Our comments will list any changes that must be made before the package would be considered complete.

STEP TWO: Prepare and submit one original and two complete copies of the final application to your Regional Office.

Three sets of the applications are the minimum: one for the Regional review, one for the Headquarters review, and the original for a permanent record. Remember that your Regional Office should receive a complete and final primacy revision application no later than December 29, 2000, to satisfy the 270-day deadline. Your final adoption of the rule must have been accomplished and the state version of the rule must be effective before the EPA can approve your primacy revision application. This time frame further emphasizes that early adoption of your rules and active dialogue with the Region play key roles in the preparation of an approvable application. *We urge you to ask the Region about the benefits of using the short forms.*

After receipt of your final revision application, we will notify you in writing if the primacy revision application is complete.²

The EPA will review the complete application package both at the Regional and Headquarters level. The review team will include UIC programmatic, enforcement and compliance, and legal staff. For this formal, final application, we will develop and send you written comments on the package, and you will need to respond to those comments.

We are required to publish a public notice that we have received a request for EPA approval of substantial revisions to your § 1422 program in the *Federal Register*, mail the notice to interested persons, and publish it in enough large newspapers in your State to provide Statewide coverage.

This notice summarizes your proposed revisions and provides opportunity to the public to request a public hearing, as well as provide at least 30 days for the public to comment upon the proposed changes to your program. If there is significant public interest expressed in response to the public notice, we are required to hold a public hearing.

D. What Do I Need to Include in the Primacy Revision Application?

If you have revised any of the following mandatory program elements, you must include the revised elements in the application. Generally, you will have to modify all of the mandatory Program Elements described below (40 CFR 145.32).

² Please note that a determination that your application is complete does not equate to it being approvable.

This table contains the minimum mandatory elements to be addressed by the primacy revision application. Ask the EPA Regional Office if EPA will require you to include additional elements.

Table ____ - Mandatory Elements of a Primacy Program

| Program Element - Revise as Required | Include in application: |
|--|--|
| State UIC Program Description | A copy of Modified Text (see Table below which describes components of Program Description) |
| Authorizing Legislation and/or Regulation(s) | A copy(s) of Modified Text showing effective date |
| Attorney General's Statement of Enforceability | A signed and dated copy of Modified AG Statement |
| Memorandum of Agreement between State and Regional Administrator | A signed and dated copy of letter from Regional Administrator to Governor or Designee |
| Other Sensitive Ground Water Area Plan ³ | A detailed copy of the plan or a statement that your State will not identify Other Sensitive Ground Water Areas. |

³ Alternately, if your State chooses not to identify other sensitive ground water areas, the requirements for motor vehicle waste disposal wells will apply statewide by January 1, 2007. Either way, you must indicate your choice in the application.

MANDATORY ELEMENTS

1. **Program Description:** The primacy revision application must include a copy of the text of the modified program description that reflects incorporation of the new rule and how you plan to implement it (40 CFR 145.32(b)(1)). We have provided you a "short form" which you will find at Appendix XXXX that describes what to include in your revisions.

| If You Transfer Authority to another Agency ... | Include These Revisions in the Program Description: |
|---|---|
| MOUs between the lead State Agency and another State Agency | <ul style="list-style-type: none"> -A signed and dated copy of all MOUs that describe transfer of part or all authority to another agency - A copy of new organization chart(s) and structures(s) of lead agency and other agency(s) -If more than one agency is responsible for administration of a program, each agency must have statewide jurisdiction (§145.23(b) over a class of activities. The new agency is not authorized to administer the program until EPA's Administrator approves the primacy revision application (§145.32(c)).⁴ - The new agency must not permit any new large-capacity cesspools and/or new motor vehicle waste disposal wells (whichever wells are under the authority of the new agency) effective April 5, 2000 - Include revisions to: (1) Federal grant distribution arrangements; (2) the organization chart and/or structure of each agency that has responsibility to administer all or part of the §1422 program that relates to Class V (40 CFR 145.25 and 145.32); and, (3) information exchanges such as inventory records, closures, peer review, and enforcement. |
| If You Coordinate with a Local Agency(s) ... | |
| MOU between State Agency(s) and a Local Agency(s) | <ul style="list-style-type: none"> - At a minimum, clearly explain how responsibilities will be carried out. FOR EXAMPLE: how the other agency will: (1) relay information about implementation activities to your State UIC Program Director to include in reports to the EPA; (2) provide documentation that owners/operators have submitted pre-closure notifications; and (3) provide documentation of closures of the two well types.⁵ |

⁴ FOR EXAMPLE: the State Department of Health (DOH) (with statewide jurisdiction for a class of Class V activities) The ultimate program responsibility (primacy) still lies within the lead State agency.

⁵ FOR EXAMPLE: the DOH may develop an agreement with local health departments to assist the State in implementation of existing an/or new Class V rule requirements.

2. Authorizing Legislation and Regulations: The primacy revision application must include the text of modified authorizing legislation and regulations (40 CFR 145.32(b)(1)).

IMPORTANT: These cannot be copies of the text of “proposed” rule(s), but must be copies of the text of the authorizing legislation and regulations that have been fully adopted and currently effective in your State at the time you submit your primacy revision application.⁶

3. Attorney General’s Statement⁷: The primacy revision application must contain an Attorney General’s (AG) Statement certifying that the State government will have the authority, by statute and/or regulation, to enforce the new Class V rule, and that the revised program will be fully effective on the date the EPA approves the application. You may want to include your completed “Primacy Revision Crosswalk” in the AG statement, as a supporting document.

4. Memorandum of Agreement (MOA) between State and Regional Administrator: The primacy revision application must contain an MOA that reflects agreement between the State and EPA on how the State will administer and enforce the new Class V rule. You will find the minimum Federal requirements for the MOA with the Regional Administrator at 40 CFR 145.25.

5. Other Sensitive Ground Water Plan: Your modified program description included in your primacy revision application must include a plan that describes, and gives a schedule for, identifying and delineating other sensitive ground water areas in your State, or a statement that your State does not intend to identify these areas. Otherwise, the application is incomplete and will not be approved. 40 CFR 145.23(f)(12) provides items that States are expected to consider in the plan and its implementation. The Technical Assistance Document for Delineating Other Sensitive Ground Water Areas outlines what a State should consider when submitting their plan. This guidance is found in Appendix ____ .

Here is a table which describes the benefits to use the three “short forms.” They include the EPA’s minimum requirements and will reduce your workload and speed up EPA’s approval process. Ask your EPA Regional Office for the forms in electronic format.

⁶ If your State publishes a document similar to the *Federal Register*, a copy of that will suffice. If you don’t have that type of publication, the copies of authorizing legislation and regulations must have the signatures and/or stamps used in your state to show the rule has been passed by appropriate authorities and an effective date for implementation.

⁷You will find the minimum Federal requirements for the AG statement at 40 CFR 145.24.

Table ____ - List of Three "Short Forms" for Primacy Revision Application

| Tables | Explanation |
|---|--|
| Program Description Revision Guide | This guide makes it easy to find what you may have to revise, what the minimum Federal requirements are, and what the EPA expects to review. Following this guide should greatly reduce the revision process. |
| Primacy Revision Crosswalk (A rule by rule comparison of your changes compared to the EPA minimum standards) ⁸ | Use this to demonstrate that your State has the regulatory authority to enforce all the new minimum Federal requirements that exist in your State Program. <i>Where your State regulation or statute is different from the Federal requirement, please, use the last column of the Crosswalk to explain how your requirement is as stringent as the Federal requirement.</i> |
| State Primacy Revision Checklist ⁹ | This checklist will help you and EPA ensure that the final application is complete. Identify all program elements you have revised in response to the new or revised Federal requirements. Mark a "yes" or "no" response in the column adjacent to the list of program elements. If you indicate "yes," please include specific information or documentation relative to the change in the application. We will insert our findings and comments in the last column of the checklist. We can provide the checklist in electronic format, if you would like. Please ask your Regional contact for a copy, and we will gladly provide them for your use. |

⁸ On pages XX through XX. Since this checklist will support the Attorney General's Statement of Enforceability so well, we strongly encourage you to include it as part of your primacy revision application.

⁹ On pages XX through XX.

APPENDIX XXX

Program Description Revision Guide

To be complete, your primacy revision application must include all substantial modifications to the existing §1422 program description that affect how you implement and enforce the new minimum Federal requirements.¹

To make the program description revision process less burdensome for you, we are providing you this guide to ensure that your program description will be complete. The table below presents:

- the minimum Federal requirements that you need to address in the Program Description,
- where you can find them in the Code of Federal Regulations, and
- what the EPA reviewers will be looking for.

| Minimum Federal Requirements for a UIC Program Description 40 CFR 145.23 | | |
|---|---|--|
| Federal Rule Citation | Portions of Minimum Federal Requirement That You Must Address | EPA's Expectation |
| §145.23(a): Narrative Program description. | Description in narrative form of the scope, structure, coverage and processes of the State Program. | - Text of revisions to your existing program that are necessary to comply with new Class V rule |
| §145.23(b): Organization and Structure | Description of the organization and structure of the State agency or agencies which will have responsibility for administering the program. - Description must include organization charts. - If more than one agency responsible for program | - Text of revisions to the existing organization and structure of your State agency(s) that will administer new Class rule - Revised organization charts for each agency that will administer new Class V rule -(If applicable) Notification that you will transfer authority to |

¹ If you want to include every modification made to your existing EPA-approved program description in your application, we encourage you to do so.

| Minimum Federal Requirements for a UIC Program Description 40 CFR 145.23 | | |
|---|--|--|
| Federal Rule Citation | Portions of Minimum Federal Requirement That You Must Address | EPA's Expectation |
| | <p>administration, each agency must have statewide jurisdiction over a class of activities.</p> <ul style="list-style-type: none"> - Responsibilities of each agency must be delineated, their procedures for coordination set forth, and an agency may be designated as a "lead agency" to facilitate communications between EPA and the State agencies. - When State proposes to administer a program of greater scope of coverage than required by Federal law, information provided under §145.23 shall indicate the resources dedicated to administering the Federally required program portion(s). | <p>administer part or all of the new Class V rule to another State agency(s)</p> <ul style="list-style-type: none"> - Text of change in designated "lead agency" that will administer part or all of the new Class V rule. Also, text of changes to Federal and/or grant distribution and grant pass-through agreements (if applicable) - Text of changes to the amount of the Federal UIC grant that you dedicate to administering the new Class V rule |
| §145.23(b)(1): Staffing | A description of the State agency staff who will carry out the State program, including: number, occupations, and general duties. | - Text of changes to the staff in each State agency that will administer the new Class V rule, including number, occupations, and general duties. |
| §145.23(b)(2): Program Costs | Itemization of estimated costs of establishing and administering the program for including cost of the personnel listed in §145.23(b)(1), cost of administrative support, and cost of technical support. | - Text of total annual cost (estimate) to administer the new Class V rule |
| §145.23(b)(3): Funding | Itemization of sources and amounts of Program funding, including an estimate of Federal grant money, to meet the costs of §145.23(b)(2), identifying any restrictions or limitations upon this funding. | - Text of changes to existing funding (sources and amounts), identifying any restrictions or limitations upon this funding. |

| Minimum Federal Requirements for a UIC Program Description 40 CFR 145.23 | | |
|---|--|--|
| Federal Rule Citation | Portions of Minimum Federal Requirement That You Must Address | EPA's Expectation |
| §145.23(c): Procedures | Description of applicable State procedures, including permitting procedures and any State administrative or judicial review procedures. | - Text of changes to existing State procedures to meet the new Class V rule |
| §145.23(d): Forms | Copies of permit form(s), application form(s) and reporting form(s) the State intends to employ in its program. Forms need not be identical to EPA forms, but should require the same basic information. If using EPA forms, the State need not provide copies of the uniform national forms, but should note its intention to use them. | Copies of State forms that you will use to administer the new Class V rule |
| §145.23(e): Compliance Tracking and Enforcement | A complete description of the State's compliance tracking and enforcement program. | Text of changes to existing compliance tracking and enforcement programs |
| §145.23(f)(5): Rules | Description of any rule under which the Director proposes to authorize injections, including the text of the rule. | Text of changes to existing rules to reflect the new Class V rule ² |
| §145.23(f)(7): Permitted Well Inventory | Description and schedule for State program to establish and maintain a current inventory of injection wells which must be permitted under State law. | Text of changes to reflect that certain radioactive waste disposal wells are reclassified as Class I wells to comply with new Class V rule |
| §145.23(f)(12): Plan for Delineation of Other Sensitive Ground Water Areas | Description and schedule for State plan to identify and delineate other sensitive ground water areas. Should consider: - geologic and hydrogeologic settings - ground water flow and occurrence | Text of Plan. Alternately, a statement that you will apply the new requirements for motor vehicle waste disposal wells statewide by January 1, 2007. |

² See: 40 CFR §§ 144.1, 144.3, 144.6, 144.23, 144.24, 144.26, 145.11, 145.23, 146.3, and 146.5 and 146.10 for new minimum Federal requirements for §1422 programs. See: Subpart G (new requirements for Class V well owners and operators).

| Minimum Federal Requirements for a UIC Program Description 40 CFR 145.23 | | |
|---|---|-------------------|
| Federal Rule Citation | Portions of Minimum Federal Requirement That You Must Address | EPA's Expectation |
| | <ul style="list-style-type: none">- topographic and geographic features- depth to ground water- significance as drinking water source- prevailing land use practices- any other existing information relating to susceptibility of ground water to contamination from Class V injection wells <p>Within plan schedule must commit to:</p> <ul style="list-style-type: none">- completing all delineations of other sensitive ground water areas by no later than January 1, 2004- making the delineations available to the public- implementing the Class V regulations, effective April 5, 2000, in these delineated areas by no later than January 1, 2007. <p>If a State chooses not to identify other sensitive ground water areas, the requirements for motor vehicle disposal wells would apply statewide by January 1, 2007.</p> | |

Primacy Revision Crosswalk - Example Format

The Primacy Revision Crosswalk will be used by the Agency to evaluate the stringency of the State regulations compared to the Federal regulations.

| Primacy Revision Crosswalk for the Class V Rule | | | |
|--|--|--|--|
| FEDERAL REQUIREMENT | FEDERAL CITATION | STATE CITATION Document title; page #; and § or ¶ | If different than federal requirement, note here and explain on a separate sheet |
| GENERAL REQUIREMENTS - §144.1 - 144.26 | | | |
| PURPOSE AND SCOPE Specific inclusions to UIC regulations Specific exclusions to UIC regulations DEFINITIONS Unless all Class V injection is banned by existing state statute and/or rule, including septic systems, the definitions must be updated to allow appropriate use of terms for compliance determinations. New or revised definitions to be included in revision are. <ul style="list-style-type: none"> • cesspool, • drywell; • improved sinkhole; • point of injection, • sanitary waste; • septic system • subsurface fluid distribution system; • well, and, • well injection CLASSIFICATION OF WELLS Class I Radioactive Disposal Well CLASS IV WELLS Expansion of allowable wells to include remediation approved by State CERCLA and RCRA programs The allowance of Class IV remediation wells | §144.1(g)(1)(iii) §144.1(g)(2)(v) §144 3 §144 6(a)(3) §144 23(c) | | |

| Primacy Revision Crosswalk for the Class V Rule | | | |
|---|---|--|---|
| FEDERAL REQUIREMENT | FEDERAL CITATION | STATE CITATION Document title; page #; and § or ¶ | If different than federal requirement, note here and explain on a separate sheet |
| may not be expanded beyond CERCLA and RCRA cleanups | | | |
| INVENTORY REQUIREMENTS Removal of radioactive waste disposal wells from Class V inventory well type list | §144.26(b)(1)(iii)(B) | | |
| SUBPART G - REQUIREMENTS FOR OWNERS AND OPERATORS OF CLASS V INJECTION WELLS §144.79 - 144.89 | | | |
| DEFINITION OF CLASS V INJECTION WELLS Class I Wells - radioactive waste disposal wells; Class V language updated. Class IV language here does not include CERCLA and RCRA remediation well authorization. APPLICABILITY Definition of motor vehicle waste disposal well. REQUIRING A PERMIT General Authorization by Rule. Rule must include exceptions of §144.84(b). Ban of New Large Capacity Cesspools and Motor Vehicle Disposal Wells; Closure Requirements for Large Capacity Cesspools and Closure and Permitting Requirements for Motor Vehicle Waste Disposal Wells. ADDITIONAL REQUIREMENTS FOR LARGE CAPACITY CESSPOOLS AND MOTOR VEHICLE WASTE DISPOSAL WELLS Applicability to Large Capacity Cesspools Applicability to Existing Motor Vehicle Waste Disposal Wells | §144.80(a)(3) §144.80(e) §144.81(16) §144.84(a) §144.84(b)(2) §144.85(a) §144.85(b) | | |

| Primacy Revision Crosswalk for the Class V Rule | | | |
|---|---|--|--|
| FEDERAL REQUIREMENT | FEDERAL CITATION | STATE CITATION Document title; page #; and § or ¶ | If different than federal requirement, note here and explain on a separate sheet |
| <ul style="list-style-type: none"> Existing motor vehicle waste disposal wells permitted or closed by January 1, 2007 (or 2008, with state extension). Statewide implementation effective January 1, 2007 if delineations not completed on time. Ground water protection areas subject to different compliance schedule (per §144.87(b)) <p>How owners and operators can determine location of ground water protection and other sensitive ground water areas.</p> <p>Impact of Changes in Status of State Drinking Water Source Assessment and Protection Program on motor vehicle waste disposal wells owners and operators. Compliance with closure or permitting required within a year of delineation. One year extension possible for connection to sewer in treatment installation.</p> <p>ADDITIONAL REQUIREMENTS</p> <p>Large Capacity Cesspools</p> <ul style="list-style-type: none"> Existing wells closed by April 5, 2005 30-day pre-closure notification New construction prohibited as of April 5, 2000 <p>Motor Vehicle Waste Disposal Wells</p> <ul style="list-style-type: none"> In ground water protection area, close or obtain permit within 1 year of local source water assessment completion; subject to 1-year extension for connection to sewer or installation of treatment In sensitive ground water area, close or obtain permit by January 1, 2007; no time extensions for permitting 1-year extension available for connection to sewer or installation of treatment Permitted wells and wells for | <p>§144.87(d)</p> <p>§144.87(e)</p> <p>§144.88</p> <p>§144.88</p> | | |

| Primacy Revision Crosswalk for the Class V Rule | | | |
|--|------------------|--|--|
| FEDERAL REQUIREMENT | FEDERAL CITATION | STATE CITATION Document title; page #; and § or ¶ | If different than federal requirement, note here and explain on a separate sheet |
| <ul style="list-style-type: none"> which permit being sought must meet MCLs at point of injection. • Comply with all permit conditions, including meet MCLs and other health based standards at point of injection , follow specified best management practices in permit, and monitor injectate and sludge quality in accordance with permit conditions. • If State does not complete ground water protection area delineations by January 1, 2004 (or January 1, 2005 with extension), obtain permit or close well by January 1, 2005, (or January 1, 2006 if state receives extension). 1-year extension available for connection to sewer or installation of treatment. • If State does not delineate other sensitive ground water areas by January 1, 2004, and well is not in a ground water protection area, obtain permit or close well by January 1, 2007 (or January 1, 2008 if State receives extension). • Notify State UIC Program at least 30 days prior to closing well. • New or converted wells prohibited effective April 5, 2000. | | | |
| <p>Conversions of motor vehicle waste disposal wells to other well type requires segregation of all motor vehicle fluids by physical barriers and prohibits such fluids entering well Injection of motor vehicle waste unlikely based on facility compliance history, and records demonstrating proper waste disposal Semi-permanent plug not acceptable to qualify as conversion</p> | §144 89(b) | | |

MODEL ATTORNEY GENERAL'S STATEMENT

I hereby certify, pursuant to my authority as (1) and in accordance with Part C of the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*, as amended), and (2), that in my opinion the laws of [State / Commonwealth of] (3), provide adequate authority to apply/ and carry out the program (42 U.S.C. 300h-1) set forth in the "Program Description" submitted by the (4). (In order for EPA to properly evaluate the State's request for approval, the State Attorney General or independent legal counsel should certify at this point that the State's environmental audit immunity and/or privilege and immunity law does not affect its ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act)

Please read the information below on audit privileges certification:

Audit Privileges Certification

This certification should be reasonably consistent with the wording of the State audit laws and should demonstrate how State program approval criteria are satisfied. EPA will apply the criteria outlined in its "Statement of Principles" memo issued on 2/14/97 (See Appendix H) in determining whether States with audit laws have retained adequate enforcement authority for any authorized federal programs. The principles articulated in the guidance are based on the requirements of federal law, specifically the enforcement and compliance and State program approval provisions of environmental statutes and their corresponding regulations. The Principles provide that if provisions of State law are ambiguous, it will be important to obtain opinions from the State Attorney General or independent legal counsel interpreting the law as meeting specific federal requirements. If the law cannot be so interpreted, changes to State laws may be necessary to obtain federal program approval. Before submitting a Primacy Revision Application for approval, States with audit privilege and/or immunity laws should initiate communications with appropriate EPA Regional Offices to identify and discuss the issues raised by the State's audit privilege and/or immunity law.

Insert one of these options into the AG statement:

A. For States with No Audit Privilege and/or Immunity Laws:

Furthermore, I certify that [State / Commonwealth of (3)] has not enacted any environmental audit privilege and/or immunity laws.

B. For States with Audit Laws that do Not Apply to the State Agency Administering the Safe Drinking Water Act :

Furthermore, I certify that the environmental [audit privilege and/or immunity law] of the [State / Commonwealth of (3)] does not affect (3) ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act because the [audit privilege and/or immunity law] does not apply to the program set forth in the "Program Description." The Safe Drinking Water Act program set forth in the "Program Description" is administered by (4), the [audit privilege and/or immunity law] does not affect programs implemented by (4), thus the program set forth in the "Program Description" is unaffected by the provisions of [State / Commonwealth of

1/14/99 draft - includes OGC and OECA comments - Do Not Cite or Quote

(3)] [audit privilege and/or immunity law]

C. For States with Audit Privilege and/or Immunity Laws that Worked with EPA to Satisfy Requirements for Federally Authorized, Delegated or Approved Environmental Programs:

Furthermore, I certify that the environmental [audit privilege and/or immunity law] of the [State / Commonwealth of (3)] does not affect (3) ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act because [State / Commonwealth of (3)] has enacted statutory revisions and/or issued a clarifying Attorney General's statement to satisfy requirements for federally authorized, delegated or approved environmental programs.

After you have inserted A, B, or C, continue with AG statement:

The specific authorities cited below are contained in lawfully enacted statutes or promulgated regulations which will be in full force and effect on the date of approval of the program or program revision. These authorities include revisions to [3] existing *approved underground injection control* program to meet the new minimum Federal requirements for state UIC programs, published in the *Federal Register*, December 7, 1999:

Cite each revised statute and regulation or include the revised text of the relevant statutes and regulations, (or cite to the authorities described in the Primacy Revision Crosswalk if it contains this information and attach the Crosswalk to the Statement) and, where appropriate, cite or include each judicial decision which demonstrates that the program has authority to implement the revisions

Seal of Office

Signature

Name and Title

Date

- (1) State Attorney General or attorney for the primacy agency if it has independent legal counsel**
- (2) 40 CFR 145 22(a)(3) and 145 24 for initial primacy applications or §145 32(b)(1) for primacy program revision applications**
- (3) Name of State or Commonwealth**
- (4) Name of Primacy Agency**

| State Primacy Revision Checklist | | |
|--|---------------------------------------|-----------------------|
| Required Program Elements | Revision to State Program (Yes or No) | EPA Findings/Comments |
| §144.1(f)(1)(vii) Class V Requirements | | |
| §144.1(g)(1)(iii) Hazardous Waste Wells | | |
| §144.1(g)(2)(v) Wells Not Used for Injection | | |
| §144.3 New and Revised Definitions | | |
| §144.6(a)(3) Class I Radioactive Waste Disposal Wells | | |
| §144.6(e) Added Subpart G Reference | | |
| §144.23(c) Allowable Class IV Wells | | |
| §144.24(a) Class V Authorization Limitations | | |
| §144.26(b)(1)(iii)(B) Reclassification of Radioactive Disposal Wells | | |
| §144.26(e) Deletion of Former Class V Deadlines | | |
| §144.79 General Class V Requirements | | |
| §144.80 Definition of Class V Wells | | |
| §144.81 Applicability | | |
| §144.82 Requirements for All Class V Wells | | |
| §144.83 Notification/Inventory | | |
| §144.84 Permits and Authorization | | |

| State Primacy Revision Checklist | | |
|--|---------------------------------------|-----------------------|
| Required Program Elements | Revision to State Program (Yes or No) | EPA Findings/Comments |
| §144.85 Cesspool and Motor Vehicle Well Requirements | | |
| §144.86 Definitions | | |
| §144.87 Time Schedule for Ground Water Protection Areas and Sensitive Ground Water Areas | | |
| §144.88 Specific Additional Cesspool and Motor Vehicle Waste Requirements | | |
| §144.89 Well Closure | | |
| §145.11(a)(32) Class V Permitting | | |
| §145.11(b)(1) Regulations No Less Stringent | | |
| §145.23(f)(12) Class V Sensitive Ground Water Area Delineation Plan Requirement | | |
| §146.3 New and Revised Definitions | | |
| §146.5(a)(3) Class I Radioactive Waste Disposal Wells | | |
| §146.5(e) Subpart G Reference | | |
| §146.10 Plugging and Abandonment | | |
| | | |

Appendix A

Final Class V Rule with the Preamble (64 FR 68546)

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Federal Register

**Tuesday
December 7, 1999**

Part IV

**Environmental
Protection Agency**

**40 CFR Parts 9, 144, 145, and 146
Underground Injection Control
Regulations for Class V Injection Wells,
Revision; Final Rule**

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Parts 9, 144, 145 and 146****[FRL-6482-2]****RIN 2040-AB83****Revisions to the Underground Injection Control Regulations for Class V Injection Wells****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: Today the Environmental Protection Agency (EPA) is promulgating revisions to the Class V Underground Injection Control (UIC) regulations. This rule adds new requirements for two categories of endangering Class V wells to ensure protection of underground sources of drinking water. In particular, it: bans existing motor vehicle waste disposal wells in ground water protection areas

and other sensitive ground water areas with a provision that allows well owners and operators to seek a waiver from the ban and obtain a permit; and bans new motor vehicle waste disposal wells and new and existing large-capacity cesspools nationwide. The preamble also discusses EPA's decision to postpone finalization of new requirements for the industrial well category as defined in the proposed rule. EPA believes it would be worthwhile to further study this well category and will finalize the rule for industrial wells at a later date.

DATES: This rule will be effective April 5, 2000.

ADDRESSES: The rule and supporting documents, including public comments and EPA responses, are available for review in the UIC Class V W-98-05 Water Docket at the U.S. Environmental Protection Agency; 401 M Street, SW., EB57, Washington, D.C. 20460. For information on how to access Docket materials, please call (202) 260-3027

between 9 a.m. and 3:30 p.m. Eastern Time, Monday through Friday.

FOR FURTHER INFORMATION CONTACT: For general information, contact the Safe Drinking Water Hotline, phone 800-426-4791. The Safe Drinking Water Hotline is open Monday through Friday, excluding federal holidays, from 9 a.m. to 5:30 p.m. Eastern Time. For technical inquiries, contact Robyn Delehanty, Underground Injection Control Program, Office of Ground Water and Drinking Water (mailcode 4606), EPA, 401 M Street, SW., Washington, DC, 20460. Phone: 202-260-1993. E-mail: delehanty.robyn@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: *Regulated Entities:* Although certain clarifications to the UIC regulations apply to owners or operators of any type of Class V well, the entities regulated by additional requirements are owners or operators of Class V motor vehicle waste disposal wells and large-capacity cesspools. Potentially regulated categories and entities include:

| Category | Examples of regulated entities (if they have a Class V well) |
|----------------------------------|--|
| Industry and Commerce | <i>Motor Vehicle Facilities:</i> gasoline service stations, new and used car dealers, any facility that does any vehicle repair work (e.g., body shops, transmission repair shops, and muffler repair shops). <i>Large-Capacity Cesspools:</i> residential or commercial facilities such as campgrounds, multi-unit residences, churches, schools |
| State and Local Government | <i>Motor Vehicle Facilities:</i> road facilities, fire stations. <i>Large-Capacity Cesspools:</i> campgrounds, rest stops. |
| Federal Government | Any Federal Agency that owns or operates one of the above entities. |

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities, of which EPA is currently aware, that are potentially regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your injection well is regulated by this action, you should carefully examine the applicability criteria in §§ 144.81 and 144.85 of the rule. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

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I. Format and Scope of Rule

Today's notice consolidates Class V UIC regulations in a new Subpart G to 40 CFR Part 144. This subpart is written in a simple-to-understand, plain-English format. Before reading the rest of this preamble, Class V well owners/operators should review the final regulation that presents the enforceable legal requirements they need to know about. This preamble does not repeat many of the requirements contained in the final rule, but rather provides background and additional rationale not included in the regulation.

II. Background

A. Statutory and Regulatory Framework

Class V wells are regulated under the authority of Part C of the Safe Drinking Water Act (SDWA or the Act) (42 U.S.C. 300h *et seq.*). The SDWA is designed to protect the quality of drinking water in the United States, and Part C specifically mandates the regulation of underground injection of fluids through wells. The Agency has promulgated a series of underground injection control (UIC) regulations under this authority.

Section 1421 of the Act requires EPA to propose and promulgate regulations specifying minimum requirements for State programs to prevent underground injection that endangers drinking water sources. EPA promulgated administrative and permitting regulations, now codified in 40 CFR parts 144 and 146, on May 19, 1980 (45 FR 33290), and technical requirements in 40 CFR part 146 on June 24, 1980 (45 FR 42472). The regulations were subsequently amended on August 27, 1981 (46 FR 43156), February 3, 1982 (47 FR 4992), January 21, 1983 (48 FR 2938), April 1, 1983 (48 FR 14146), July 26, 1988 (53 FR 28118), December 3, 1993 (58 FR 63890), June 10, 1994 (59 FR 29958), December 14, 1994 (59 FR 64339), and June 29, 1995 (60 FR 33926).

Section 1422 of the Act provides that States may apply to EPA for primary enforcement responsibility to administer the UIC program; those States receiving such authority are referred to as "Primacy States." Where States do not seek this responsibility or

fail to demonstrate that they meet EPA's minimum requirements, EPA is required by regulation to prescribe a UIC program for such States. These direct implementation (DI) programs regulations were issued in two phases, on May 11, 1984 (49 FR 20138) and November 15, 1984 (49 FR 45308). For the remainder of this preamble, references to the UIC Program "Director" mean either the Director of the EPA program (where the program is implemented directly by EPA) or the Director of the Primacy State program (where the State is responsible for implementing the program). Also, currently all Class V UIC Programs in Indian Country are directly implemented by EPA. Therefore, for the remainder of this preamble, references to DI Programs include Class V programs in Indian Country.

B. History of This Rulemaking

1. 1994 Consent Decree With the Sierra Club

On August 31, 1994, EPA entered into a consent decree with the Sierra Club that required that no later than August 15, 1995, the EPA Administrator sign a notice to be published in the Federal Register proposing regulatory action that fully discharges the Administrator's rulemaking obligation under section 1421 of the SDWA, 42 U.S.C. 300h, with respect to Class V injection wells.

2. 1995 Proposed Rule

On August 15, 1995, the Administrator signed a notice of proposed rulemaking that proposed a regulatory determination and minor revisions to the UIC regulations for Class V injection wells (60 FR 44652, August 28, 1995). In this notice, EPA proposed not to adopt additional federal regulations for any types of Class V wells. Instead, the Agency proposed to address the risks posed by certain wells using existing authorities and a Class V management strategy designed to (1) speed up the closure of potentially endangering wells and (2) promote the use of best management practices to ensure that other Class V wells of concern do not endanger underground sources of drinking water (USDWs). Several factors led EPA to propose this approach, including: (1) The wide diversity in the types of fluids being injected, ranging from high risk to not likely to endanger; (2) the large number of facilities to be regulated; and (3) the nature of the regulated community, which consists of a large proportion of small businesses.

EPA received many comments that supported the Agency's proposal to not

impose more regulations for Class V wells. However, EPA also received a number of comments that raised concerns about the proposal. In particular, several commentors questioned whether a UIC program without additional requirements for relatively high-risk well types would prevent endangerment to drinking water sources as required by the SDWA. Others questioned whether the proposal was really the best EPA could do given the known threat to USDWs that some wells present.

3. 1997 Modified Consent Decree

Based on comments received on the 1995 proposal, EPA decided to reconsider that proposed approach. Because this reconsideration would extend the time necessary to complete the rulemaking for Class V wells, EPA and the Sierra Club entered into a modified consent decree on January 28, 1997 (D.D.C. No. 93-2644) that extended the dates for rulemaking that had been in the 1994 decree. The modified decree requires three actions

First, by no later than June 18, 1998, the EPA Administrator was required to sign a notice to be published in the Federal Register proposing regulatory action that fully discharges the Administrator's rulemaking obligation under section 1421 of the SDWA with respect to those types of Class V injection wells presently determined to be high risk for which EPA does not need additional information. A thirty-day extension was granted; the Administrator signed the notice on July 17, 1998. The Administrator is required to sign a final determination for these endangering Class V wells by no later than October 29, 1999, although the decree provides the Administrator with discretion to exercise another 30-day extension.

Second, by no later than September 30, 1999, EPA must complete a study of all Class V wells not included in the first rulemaking on endangering Class V injection wells. EPA has completed this study. Based on this study, EPA may find that some of these other types of Class V wells also pose an endangerment to drinking water.

Third, by no later than April 30, 2001, the EPA Administrator must sign a notice to be published in the Federal Register proposing to discharge the Administrator's rulemaking obligations under section 1421 of the SDWA with respect to all Class V injection wells not included in the first rulemaking for Class V injection wells. The Administrator must sign a final determination for these remaining Class V wells by no later than May 31, 2002

4. 1998 Proposed Rule

On July 29, 1998 (63 FR 40586), in response to the first action required under the modified consent decree, EPA proposed revisions to the Class V UIC regulations that would add new requirements for three categories of Class V wells that were believed to endanger drinking water. According to this proposal, Class V motor vehicle waste disposal wells in ground water protection areas (as defined in Section IV.A.1 of the preamble) would either be banned or would have to get a permit that requires fluids released in those wells to meet the drinking water maximum contaminant levels (MCLs) and other health-based standards at the point of injection. Class V industrial waste disposal wells in ground water protection areas also would be required to meet the MCLs and other health-based standards at the point of injection, and large-capacity cesspools in such areas would be banned.

EPA discussed the 1998 proposal with several stakeholders and small entity representatives. During January and February of 1998, EPA convened three stakeholder meetings to inform potentially affected entities of the requirements under consideration and to solicit feedback. In addition, as required by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), EPA conducted outreach to representatives of small entities affected by the rule. In consultation with the Small Business Administration, EPA identified 17 representatives of small entities that were most likely to be affected by the proposal.

A Small Business Advocacy Review Panel met for 60 days in 1998 to identify small entity concerns with the proposed rulemaking. The 1998 proposal incorporated all recommendations on which the Panel reached consensus (see 63 FR 40590, July 29, 1998).

III. Actions Taken After Close of the Public Comment Period

A. Public Comment

The 1998 proposed rule was initially open for public comment for 60 days. In response to a request to extend the comment period, EPA published a notice in the *Federal Register* (63 FR 51882) which reopened the comment period for an additional 60 days.

Ninety-seven commentors addressed the proposal. EPA has developed a response to comment document addressing all public comments received on motor vehicle waste disposal wells and large-capacity cesspools, which are the well types

addressed in this rulemaking. This document is available at the Water Docket. In addition, some comments are discussed in today's preamble. Public comment received regarding regulation of industrial wells will be considered and addressed when the final determination for those wells is published.

B. National Drinking Water Advisory Council

The National Drinking Water Advisory Council (NDWAC) was established by the SDWA Section 1446 to provide practical and independent advice, consultation, and recommendations to the Agency on the activities, functions and policies related to the SDWA. At its April 1997 meeting, NDWAC decided to form a Federal Advisory Committee Act (FACA) working group to address the Class V Underground Injection Control and Source Water Protection Program integration issues.

The EPA UIC and Source Water working group represents a broad range of public interests including: State, federal and local government representatives; public interest groups, including environmental organizations; universities; industry; and utility operators. The group met twice in 1999 to discuss the proposed Class V regulation, as well as issues addressed in public comment.

The full NDWAC council considered the working group's conclusions during their May 1999 meeting. The full council then made formal recommendations to the Administrator.

C. Notice of Data Availability

EPA published a notice of data availability (NODA) and further request for comment related to the 1998 proposed rule on May 21, 1999 (64 FR 27741). A total of 14 public comment letters were received in response to this request.

The NODA was published in response to additional information received during and after the close of the comment period. It outlined additional data and issues EPA was considering in developing the final rule, including the following information that is discussed in separate sections below: contamination incident information and injectate quality data from the Class V study; a draft report on contaminant occurrence in public water systems; and injectate quality and contamination incident data from EPA Regions II and VIII. Two other categories of information presented in the NODA, Class V well closure cost data from Penske Truck Leasing Company and

Source Water Assessment Plans submitted to EPA, are discussed in section V.A of today's preamble relating to the economic impact analysis.

The following sections only address the NODA as it pertains to motor vehicle waste disposal wells and large-capacity cesspools targeted in today's rule. As discussed in more detail in section IV.B of this preamble, several public commentors on the 1998 proposal questioned the basis for regulating all industrial wells in the same manner, given the diversity of wells that exist within that category as it was proposed and the Agency has decided not to go final with the 1998 proposal for industrial wells at this time.

1. Class V Study

EPA has completed a study of Class V injection wells to meet the requirements of a modified consent decree in *Sierra Club v. Browner* (D.D.C. Mo. 93-2644). This consent decree required the Agency to study Class V wells not included in today's rulemaking. The information was collected from both State and EPA Regional offices using survey questionnaires and selected site visits, and from other sources, such as trade associations, research institutions and universities. Information from the study will be used to determine if additional Class V regulations are needed to protect USDWs from Class V injection wells not regulated by today's rulemaking. The focus of the study consisted of an information collection effort for 23 subclasses of Class V wells.

Through the study, States and EPA Regional offices were also asked to supply information on the three well types addressed in the proposed rule: motor vehicle waste disposal wells, industrial waste disposal wells, and large-capacity cesspools. Before the study was completed and the final methods and results were fully documented, information received on the three well types targeted by the proposed Class V rule were compiled in a single notebook and made available through the NODA. The data was presented in three sections. The first section provided the latest State inventory information for each of the three well types as reported in survey responses. The second provided information on contamination incidents identified by the States. The third contained injectate quality data collected from motor vehicle and industrial waste disposal wells.

In the NODA, EPA stated its plan to use this new information to help assess the threat posed by the different well

types and to better project the number of affected entities. Below, EPA describes how the recently obtained injectate quality and contamination case information presented in the NODA supports the Agency's regulatory determination in today's final rule-making. The new inventory data presented in the NODA is discussed in Section V of this preamble.

As part of the Class V Study EPA received limited injectate sampling data for motor vehicle waste disposal wells. In "Analyses from Sampling at Class V Industrial and Motor Vehicle Waste Disposal Wells," A. Melcer and N. Wiser, USEPA Region 5, examined the analytical results of liquid and sludge injectate taken from 26 motor vehicle waste disposal wells in Indiana, Michigan, and Minnesota.

Approximately 50 percent of the liquid samples collected exceeded MCLs and approximately 19 percent of the samples exceeded toxicity characteristic (TC) hazardous waste limits. Approximately 80 percent of the sludge leachate samples analyzed exceeded MCLs and 30 percent qualified as hazardous waste. Laboratory results submitted by another motor vehicle facility indicated that some organic constituents in the injectate were above MCLs. As a result, the permit for the Class V UIC well was denied. A database containing thirty cases of soil and/or ground water contamination caused by the operation of such wells was also submitted as part of the Study. Most of the contamination cases are for service stations in New York but the database does not provide specific details.

Six public commentors said this information did not support the Agency's proposed high-risk conclusion and a ban for motor vehicle waste disposal wells. These commentors believed the information shows that motor vehicle wells can be safely operated under certain circumstances, that the contamination cases are few in number and possibly not representative of today's operating practices, and that the information is too vague and anecdotal to support informed decision making.

2 Region II and VIII Data

The Region II and VIII data provide additional evidence that fluids released in motor vehicle waste disposal wells commonly exceed MCLs and that these wells have been linked with environmental contamination. For example, one report shows that out of 38 motor vehicle facilities in the State of New York, 20 had injectate above MCLs entering drywells and 19 had injectate above MCLs entering septic

systems. Out of 27 case study files reviewed in Region II, nine had documented incidents of ground water and/or soil contamination. Region VIII submitted both laboratory reports from motor vehicle waste disposal facilities in Montana and two reports from South Dakota which included injectate sampling data. All facilities exceeded primary drinking water standards in one or more sampling events for volatile organic compounds (VOCs) and/or heavy metals. For example, benzene was detected in some samples at 1.1 to 22 times the MCL. Tetrachloroethylene levels were seen ranging from 1.1 to 38 to 280 times MCL and methylene chloride at 96 times the MCL. Some metals were found to exceed the hazardous waste toxicity characteristic levels.

Only one commentor addressed these data specifically. This commentor believed the data support their contention that motor vehicle wells cannot be categorically classified as high risk. The commentor noted that less than one percent of all Class V well contamination cases in Region II involved ground water contamination.

EPA believes the injectate data and contamination cases cited in the NODA from the study and Regions II and VIII support the 1998 proposal that motor vehicle waste disposal wells warrant additional federal regulation. The additional information confirm that samples of injectate exceed the MCLs for volatile organic compounds and metals. In some cases, contaminants exceeded RCRA toxic characteristic levels. This data is consistent with information collected to support the proposed rule making and supports EPA concerns about potential endangerment of drinking water by these wells.

However, the Agency recognizes that there may be situations in which an owner or operator of a Class V motor vehicle waste disposal well could implement best management practices (BMPs) and/or install treatment measures such that the waste injected would not exceed the MCL or other health based standards and could therefore remain open without endangering USDWs. For that reason, today's rule allows owners and operators of existing Class V motor vehicle waste disposal wells to seek a waiver from the ban and apply for a permit.

3. Contaminant Occurrence Report

This report summarizes occurrence data from finished water collected from 14 different State databases for public drinking water systems. In total, the data include over 10 million analytical

results from over 25,000 public water systems. Only contaminants that were tested in a significant number of systems (e.g., several hundred or more) in at least one of the State databases were evaluated in the report. Twenty-three contaminants known or believed to be associated with motor vehicle waste disposal wells were selected for analysis. Each of the 23 contaminants were detected in ground water based systems at concentrations greater than the MCL.

The results of the analysis show that contaminants associated with Class V wells occur in public drinking water systems across the nation. Contaminant occurrence varied widely from State to State. For example, 12.8% and 19.4% of the ground water systems in certain States detected trichloroethene and 1,1,1-trichloroethane, respectively. Furthermore, all contaminants were detected at levels that exceeded the MCL. In certain States, 2.0% of ground water systems exceeded the MCL for mercury and 5.7% of ground water systems exceeded the MCL for tetrachloroethylene (PCE). Determining the source of the contamination was beyond the scope of this report, but the occurrence data clearly demonstrates that contaminants known to be associated with Class V wells occur nationally in public water systems.

IV. Description of Today's Action

Today EPA is finalizing additional requirements for motor vehicle waste disposal wells and large capacity cesspools, to embrace priorities and help achieve goals defined under the 1996 Amendments to the SDWA, and to fulfill the first phase of the Agency's requirements under the 1997 consent decree with the Sierra Club.

Class V wells are currently authorized by rule as long as (1) they do not endanger USDWs, and (2) the well owners or operators submit basic inventory and assessment information. If a Class V well may endanger USDWs, UIC Program Directors can require the owner/operator to apply for a permit, order preventive actions (including closure of the well) to prevent the violation, require remediation to assure USDWs are protected, or take enforcement action. These, and other existing federal requirements and authorities will continue as basic elements of EPA's Class V strategy, applicable to all Class V wells in all areas.

Consistent with the 1997 decree, EPA is taking a step-wise approach to supplement the existing program and ensure Class V injection wells do not endanger USDWs. This approach

consists of (1) an initial rule creating additional requirements for some of the Class V well types determined by EPA, as an initial matter, to be higher risk, and (2) further study of other types of Class V wells not covered in the initial rule to provide the factual basis for further regulatory action, as necessary.

As the first step of its Class V strategy, EPA is today finalizing additional requirements for two categories of Class V injection wells determined by EPA to be a source of endangerment to drinking water. Specifically, the rule covers: (1) Existing motor vehicle waste disposal wells located in ground water protection areas delineated for community water systems and non-transient non-community water systems that use ground water as a source and other sensitive ground water areas as delineated by States; and, (2) new and existing large-capacity cesspools and new motor vehicle waste disposal wells nationwide. The conclusion that these Class V wells pose an endangerment is based on substantial information and the combined professional judgment of EPA and State geologists and engineers that are responsible for implementing the Class V UIC program.

In the case of motor vehicle waste disposal wells, today's rule has been developed to use and promote linkages between the Class V UIC program and EPA's State Drinking Water Source Assessment and Protection Program. Both programs are authorized by the SDWA. The UIC Program is designed to protect all current and potential USDWs from contamination by injection wells. The State Drinking Water Source Assessment and Protection Program is structured to identify all potential sources of contamination within areas that provide short-term recharge to public water supply wells and surface water intakes.

The focus on ground water protection areas and other State delineated sensitive ground water areas is a key element for the protection of current and future drinking water sources. Areas delineated under the State Drinking Water Source Assessment and Protection Program represent, at a minimum, areas designated to receive top priority for the protection of existing public drinking water supplies. Sensitive ground water areas are ground water areas identified by the State as needing additional protection from Class V wells with injectate likely to endanger drinking water. Consistent with this prioritization, this rule uses a phased-in approach that targets motor vehicle waste disposal wells in ground water protection areas first, and State designated sensitive ground water areas

at a later date. This allows States to prioritize critical ground water areas initially and phase-in other priority protection areas at a later time.

The decision to regulate motor vehicle waste disposal wells is based on the high potential for these wells to endanger USDWs. Motor vehicle waste disposal wells are located throughout the country—mainly in populated areas—at a variety of facilities, such as automobile service stations, car dealerships, automotive repair shops, and specialty repair shops (e.g., transmission shops, muffler shops, body shops). They tend to be shallow, with injection occurring into or above USDWs. They also tend to be uncased, which could allow contaminated fluids to move more easily into USDWs. Given all of these factors, the quality of fluids they inject becomes very important in determining whether these wells are a threat to USDWs.

Although the development and use of BMPs by the automotive industry have improved recycling and waste disposal practices over the past decade, EPA is concerned about motor vehicle-related facilities which inject fluids with little or no treatment. These fluids, which may be injected intentionally for waste disposal or accidentally as a result of spills or leaks, include spilled gasoline and oil, waste oil, grease, engine cleaning solvents, brake and transmission fluids, and antifreeze. Such fluids contain potentially harmful contaminants, often in high concentrations. For example, fluids containing waste oils or gasoline generally include benzene, toluene, xylenes, and other volatile contaminants. Waste oils and antifreeze also contain some priority pollutant heavy metals, such as barium, cadmium, chromium, and lead. Other contaminants that may be injected include methylene chloride, a compound found in many degreasers, and ethylene glycol, a component of antifreeze. All of these contaminants can be toxic above certain levels. Some, such as benzene and toluene, have the potential to cause cancer.

Data collected for the 1987 Report to Congress and from later EPA Regional investigations indicate that fluids being injected may exceed health-based limits for contaminant levels in water by 10 to 100 times (see p 5–19 of the August 1989 Class V Task Force Report available in the docket). These data were confirmed for a number of motor vehicle service stations during the implementation of a 1991 National Administrative Order addressing failures to submit inventory information required under 40 CFR 144.26 and

146.52(a). Analyses of fluids disposed at a group of facilities subject to this order found a total of 13 contaminants present in concentrations above the drinking water MCL, although not all contaminants exceeded the MCL in every sample at every facility (see Data from the National Administrative Order on Motor Vehicle Waste Disposal Wells, March 16, 1998, available in the docket). For example, benzene concentrations exceeded the drinking water MCL at 19 of the 20 facilities tested and in 32 of 35 samples analyzed. The highest measured benzene concentration was 40 times the MCL. Similarly, arsenic exceeded the MCL at 11 of 17 facilities and in 18 of 30 samples, with the highest arsenic concentration being 31 times the MCL.

The injection of used petroleum products may leave behind an oily residue within the wells. A 1995 report on natural bioattenuation of hazardous organic compounds in the subsurface states: "Most organic contaminants, however, enter the subsurface as an oily liquid, such as a fuel spill or release of chlorinated solvent. Groundwater moving through the material dissolves a small portion of the contaminant, which becomes a plume of groundwater contamination. Because the contaminant mass in the oily material is much greater than that dissolved in the groundwater, the spill can continue to maintain the plume more or less indefinitely. As the plume moves away from its source natural biological processes may attenuate the contamination in the groundwater."¹

Examples of instances where motor vehicle waste disposal wells have endangered USDWs include a case in Missoula, Montana, a sole-source aquifer area, where investigations starting in June of 1988 discovered that PCE from operating drainage wells at auto service stations had contaminated community wells serving approximately 45,000 people.^{2,3} Three community wells were closed and another 15 have elevated levels of PCE. In Gilford, New Hampshire, a March 1988 assessment of a site with a garage, a tire center, auto body shop, and a U.S. Army Reserves maintenance shop discovered that operating floor drains had contaminated

¹ Anderson William, Innovative Site Technology Bioremediation, Chapter 3.4, page 1 1995

² Background Paper prepared by Alan English, Missoula City-County Health Department for U.S. EPA Underground Injection Control Program February 1992

³ An Investigation of the Volatile Organic Content of Sludges, Soils and Liquids Entering the Missoula Aquifer from Selected Sources, prepared by the Missoula City-County Health Department Environmental Health Division, Contributors Tom Barger and Alan English, July 27, 1990

the ground water, the soil, and an on-site water supply with PCE.⁴ In Exton, Pennsylvania, trichloroethylene (TCE), PCE, and 1,1,1-trichloroethane from a stone bed drain field connected to floor drains of an auto repair/body shop operating until 1984, contaminated ground water that supplies drinking water to about 76,700 people.⁵ In Liberal, Kansas, solvents disposed in a septic system by an engine repair shop resulted in volatile organic compound (VOC) contamination of several water supply wells in 1982; concentrations of VOCs in the septic system were as high as 32,000 ug/l.⁶ As presented in Section III.C, additional data from Region II, Region VIII and the Class V study show exceedences of the MCLs for volatile organic compounds and metals in Class V motor vehicle waste disposal well injectate.

EPA believes many of the industries that operate motor vehicle waste disposal wells are making efforts to implement best management practices, waste minimization techniques, and recycling to reduce their impact on the environment and lower operating costs. However, more recent information presented in the NODA and EPA's experience implementing Class V programs across the country indicate that contamination of drinking water supplies from endangering motor vehicle waste disposal wells is a problem that still needs to be addressed.

Some commentors opposed the proposed approach for motor vehicle waste disposal wells. They felt motor vehicle waste disposal wells did not pose a risk to USDWs when located in ground water protection areas and should not be banned. They contended that the industry has instituted BMPs and recycling, and therefore, are no longer disposing of motor vehicle wastes in these wells. While EPA agrees that the use of BMPs and recycling have improved, motor vehicle waste disposal wells in ground water protection areas and sensitive ground water areas still pose a potential endangerment to USDWs. However, there are indications that with treatment, BMPs and recycling, facilities can meet MCLs and continue to use their wells. Therefore, existing motor vehicle waste disposal

wells are banned in ground water protection areas and other sensitive ground water areas, but owners and operators can seek a waiver from the ban and obtain a permit. Additionally, EPA is banning new motor vehicle waste disposal wells statewide. The Agency will also issue guidance on conversion of motor vehicle wells to another type of Class V well if owners and operators take certain steps to prevent motor vehicle waste from entering the well. EPA has also extended the compliance time from 90 days to one year to enable owners and operators to explore all options available for compliance.

Large-capacity cesspools have a high potential to contaminate USDWs because: they are not designed to treat sanitary waste; they frequently exceed drinking water MCLs for nitrates, total suspended solids and coliform bacteria; and, they may contain other constituents of concern such as phosphates, chlorides, grease, viruses, and chemicals used to clean cesspools such as trichloroethane and methylene chloride. Pathogens in untreated sanitary waste released into large-capacity cesspools could contaminate the water supply sources such as transient systems and pose an "acute" risk if consumed (meaning there could be a serious health risk with a single exposure given the nature of contamination). This is a particular concern for Class V cesspools located in hydrogeologic settings that would permit pathogens to migrate to a ground water supply well that serves a transient system with inadequate disinfection of the water or individual wells. To further limit the acute risk associated with large-capacity cesspools, EPA expanded today's large-capacity cesspool requirements nationwide.

EPA proposed additional requirements for industrial waste disposal wells to meet the MCLs and other health based standards at the point of injection. Many commentors questioned why the Agency chose to regulate a wide range of industries with different disposal practices with one approach. Some commentors suggested requirements similar to those proposed for motor vehicle waste disposal wells, to either ban industrial wells or require site specific permits. Still others felt the industrial category was too diverse and types of industrial waste streams should be regulated based on their specific characteristics and risks. After consideration of these comments, EPA agrees that the industrial category is diverse and represents a variety of waste streams. For this reason, EPA is not including requirements for industrial

waste disposal wells in today's final rule. Industrial waste disposal wells will be studied further and addressed in a future rule making.

EPA underscores that this initial rule targets certain ground water protection areas for the purpose of prioritizing national policy. The rule does not establish differential levels of protection for different areas, but rather proposes specific measures EPA believes are necessary to ensure that potentially problematic Class V wells do not endanger USDWs in the highest priority areas. The prohibition against endangerment of USDWs, found in § 144.12 of the existing UIC regulations, continues to apply to all Class V wells and all areas, whether or not a State has a completed its State Drinking Water Source Assessment and Protection Program. Section 144.12(a) in particular provides that no injection-related activity may be conducted "in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons." Similarly, § 144.12(c) and (d) authorize a variety of actions if a Class V well may cause a violation of primary drinking water regulations or otherwise adversely affect the health of persons.

In addition to § 144.12, other existing UIC authorities continue to be available to control Class V wells on a case-by-case basis, as needed to protect USDWs in any area. These can include requiring a permit under §§ 144.25 and/or requiring submission of additional inventory information under § 144.26. In States with EPA-administered programs, the inventory requirements under § 144.26 can be supplemented by additional information requirements, including ground water monitoring, analysis of injected fluids, or submission of geologic information under § 144.27.

EPA expects and strongly encourages States to use these existing authorities to take whatever measures are needed to ensure Class V wells are not endangering USDWs in any other areas beyond ground water protection areas and sensitive ground water areas. If believed to be necessary, States should apply the same requirements in this rule to these and other areas and/or to other Class V wells. Nothing in this rule precludes a State or local government from promulgating more stringent requirements above and beyond the existing UIC authorities.

⁴ Background information titled "5X28 Service Station, Gilford, NH" available in the docket. This background information was obtained from U.S. EPA Region 1 staff in May 1990.

⁵ Superfund Site Fact Sheet, A.I.W. Frank/Mid-County Mustang Site, Pennsylvania, EPA ID# PAD004351003, Last Update: March 1998 <http://www.epa.gov/reg3hwmd/super/aiwfrank/pad.htm>

⁶ Site Description Printout for the Panhandle Eastern Pipeline Site, from Teresa Hattan, Kansas Department of Health and Environment, July 15, 1998

A Definitions/Terminology

1 Ground Water Protection Areas

At § 144.85, the proposal specified that only those owners or operators of motor vehicle waste disposal wells and large-capacity cesspools that are located in delineated source water protection areas for community or non-transient non-community water systems that use ground water as a source must meet the requirements of the rule. However, EPA's Final Guidance for Source Water Assessments and Protection Programs (8/97), does not require States to call their delineated areas "Source Water Protection Areas" and the State Drinking Water Source Assessment and Protection Programs submitted to EPA to date indicate that States may identify these areas by other names (e.g., source water assessment areas, ground water areas). Therefore, to avoid the confusion these terms may cause, the term "ground water protection areas" will be used in this rule to identify areas delineated and assessed under section 1453 of the Safe Drinking Water Act for community and non-transient non-community water systems that use ground water as a source, and are therefore subject to this rule. In cases where the State delineates zones or areas representing various levels of protection, the State would determine which areas correspond to ground water protection areas for the purposes of this rule.

2. Sensitive Ground Water Areas

The phrase "sensitive ground water area" was not used in the proposed Class V rule. However, the proposal recognized that areas beyond ground water protection areas might warrant additional protection and requested public comment on whether the new Class V regulations should apply beyond these areas, possibly statewide, to ensure protection of USDWs.

EPA ensured many comments recommending that the rule requirements extend beyond ground water protection areas in order to protect future sources of drinking water and to protect the public health of persons using individual wells. EPA agrees with those commentors and expanded the requirements to owners or operators of motor vehicle waste disposal wells located in additional sensitive ground water areas, as designated by the program director. The phrase "sensitive ground water areas" in this rule refers to ground water areas that are critical for public health protection because of hydrogeologic and other features that would cause USDWs to be vulnerable to contamination from

the well-types regulated by this action. A general definition of other "sensitive ground water areas" has been included in the final rule at § 144.86. This definition should act as a guide to regulators when delineating sensitive ground water areas. At § 145.23 EPA requires States, as part of their Class V program revision, to submit a plan for delineating other sensitive ground water areas (unless the State chooses to implement the program statewide). Program revisions are subject to public review and, therefore, the public will have the opportunity to comment on the States approach to delineating other sensitive ground water areas. EPA is not requiring States to submit a plan for ground water protection areas as part of their program revision because, as required under 1453 of the Safe Drinking Water Act, each State's Drinking Water Source Assessment and Protection Program outlines the States plan for conducting ground water protection area assessments and has already undergone public review and is undergoing EPA review. EPA also intends to provide States with further guidance on delineating sensitive ground water areas. Guidance documents will be made available from EPA Regional Offices or through the Safe Drinking Water Hotline.

3. Point of Injection

In the proposed Class V rule, the phrase "point of injection" was used at § 144.88 to establish where fluids injected into a well would be required to meet MCLs and other health-based standards. The proposal, however, did not define the term "point of injection."

Several commentors requested that this term be defined to avoid confusion. Other commentors expressed concern about where the "point of compliance" would be and suggested various points to measure compliance, ranging from "point of use" to the property boundary. Others recommended not defining the point of injection, because a highly prescriptive definition of the "point of injection" would be difficult to implement due to the many different engineering configurations of Class V wells.

To resolve this issue, EPA sought public comment in the May 21, 1999, NODA on the need for the final Class V regulation to clearly define the "point of injection." The majority of the commentors on the NODA supported defining the point of injection for Class V wells as the distribution box (for the case of septic systems) or the end of the pipe for injection wells. One commentor stressed the need to give UIC Directors

the authority to determine the point of injection on a case by case basis.

In response to public comment, EPA has decided to define "point of injection." Taking into account the difficulties of applying a specific definition to a variety of wells, "point of injection" is defined as, "the last accessible sampling point prior to waste fluids being released into the subsurface environment," at § 144.3. For septic systems, the last accessible sampling point might be the distribution box, for injection wells the last accessible point prior to injection would be the end of the pipe. This definition, in addition to a guidance document, should act as a guide to regulators and Class-V well owners and operators, regardless of well configuration, when determining the most appropriate sampling point to determine compliance.

4. Motor Vehicle Waste Disposal Wells

In its proposal, EPA determined that injection wells located in ground water protection areas that receive waste fluids from the servicing of motor vehicles pose an endangerment to underground sources of drinking water. Motor vehicle waste disposal wells are defined at § 144.81 (16) as follows "Motor vehicle waste disposal wells receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work."

B Industrial Waste Disposal Wells

In the July 29, 1998 notice, EPA proposed additional requirements for the group of Class V wells categorized as "industrial" when located in ground water protection areas because these well types may pose an endangerment to underground sources of drinking water. The proposed industrial well category included a wide range of industries disposing of wastes from such various industries as animal hospitals, environmental laboratories, dry cleaners, and oil refineries. In addition to representing a wide range of industrial discharges, these wells vary in construction, depth, and operation. The Agency solicited comment on the appropriateness of designating industrial wells as high risk and regulating them under this rule.

Based on public comment, EPA now believes that, although these wells may pose high risks to underground sources of drinking water, the well category as defined in the proposal may be too diverse to follow the same regulatory

approach EPA believes that more information is needed to formulate an effective program for these wells and wastestreams. As a result, EPA has decided to defer finalization of the 1998 proposal for this category of wells.

C Coverage of the Rule

1 Large-Capacity Cesspools

The proposed rule banned large-capacity cesspools in ground water protection areas. However, in the preamble to the proposed rule, the Agency recognized that there may be instances where pathogens in untreated sanitary waste released from Class V large-capacity cesspools could pose an acute health risk (*i.e.*, a person could become ill by taking one drink from an affected drinking water supply) and sought comment on the merits of broadening the coverage of the rule to include ground water protection areas for transient public water systems and possibly statewide. Many commentors supported the idea of extending the ban on large-capacity cesspools, due to concerns over one-time exposure to pathogens in drinking water. Some commentors supported extending the ban to ground water protection areas delineated for transient non-community systems that use ground water as a source, but the majority of commentors supported statewide coverage, primarily because of the acute risk these wells pose, the nature of the contaminants and the on-site disposal alternatives available to owners or operators.

Based on these public comments, EPA has decided to ban new and existing large-capacity cesspools nationwide. EPA believes that extending the rule's coverage is the most appropriate course of action given that many States already ban new large-capacity cesspools, the acute nature of the risks posed by these wells, and the relative ease of developing alternative means to dispose of sanitary waste on-site.

2. Motor Vehicle Waste Disposal Wells

The proposal would have regulated motor vehicle waste disposal wells in ground water-based community and non-transient, non-community ground water protection areas, but encouraged States to use existing UIC authorities to ensure Class V wells are not endangering USDWs beyond those areas. However, the proposal recognized that additional areas might warrant additional protection and requested public comment on whether the new Class V regulations should apply to motor vehicle waste disposal wells beyond ground water protection areas.

One-third of the commentors on this issue opposed expanding the rule. These commentors believed existing authority adequately protected USDWs outside of ground water protection areas, EPA would be exceeding its authority, limited resources and the need for State flexibility would inhibit implementation of the rule in additional areas, and additional regulatory burden would be placed on well owners or operators outside ground water protection areas.

About one-half of the commentors on this subject favored expanding the requirements for motor vehicle waste disposal wells beyond ground water protection areas. A number of these commentors specified additional areas where the regulation should apply, including impaired ground water areas, critical aquifer protection areas, sole-source aquifers, aquifer storage and recovery areas, sand/gravel/karst aquifers, national parks, possible future USDWs, rural areas with private wells, and the entire State. Some commentors suggested phasing in additional sensitive ground water areas over time.

Commentors supporting expansion sought to ensure protection of all USDWs and uniform application of the regulations. Others believed that expansion of the rule is needed to protect future sources of drinking water, private drinking wells, and other sensitive ground water areas not included in ground water protection areas.

The NODA requested comment on an approach to expand the rule beyond ground water protection areas to other sensitive ground water areas that the State identified and phasing in the implementation of the rule in these additional areas. Eleven commentors addressed the addition of sensitive ground water areas and nine commentors addressed the phased approach to implementation. For expansion of the rule beyond ground water protection areas, seven commentors supported the need to protect additional areas with two of the commentors recommending statewide coverage of the rule. Three commentors opposed expansion, stating that limiting the rule to ground water protection areas adequately protected USDWs. Seven commentors supported phasing in the regulations beyond ground water protection areas. They agreed that the given time frame allowed adequate time for owners/operators and States to implement the rule, and the phase in would assist States in prioritizing areas for implementation of the rule. Two commentors opposed the phasing in of

any additional sensitive ground water areas.

EPA agrees with those commentors suggesting additional areas need to be covered by this rulemaking. The State Source Water Protection Program provides protection for areas directly around public drinking water supplies and does not consider or protect drinking water sources that are not currently being used. In addition, limiting the rule to ground water protection areas does not take into consideration factors such as contaminants that could readily migrate to existing water supplies, sole source aquifers, and individual well fields. Therefore, the Agency feels it is important to extend the rule beyond ground water protection areas to fulfill its mandate to protect current and future drinking water sources. Thus, EPA, at § 144.85, regulates existing motor vehicle wells in both ground water protection areas and other sensitive ground water areas, as delineated by the Director and bans new motor vehicle waste disposal wells nationwide. In delineating sensitive ground water areas, both Primacy States and EPA Regions (for DI States) should evaluate the hydrogeologic setting and consider such factors as: the presence or absence of karst topography, fractured bedrock, sandstone, and/or confining layers; the depth to ground water; significance as a drinking water source, and future uses of the land. Primacy States and EPA Regions (for DI States) must implement the rule for existing motor vehicle waste disposal wells in ground water protection areas within one year of the completion of the local assessments, and must delineate sensitive ground water areas by January 1, 2004 and implement the rule in these areas by January 1, 2007.

D Ban of Large-Capacity Cesspools

As discussed in section IV of this preamble, concerns over "acute" health risks have led EPA to extend the ban of large-capacity cesspools to all large-capacity cesspools nationwide. Separate from this issue of the rule coverage, however, is whether large-capacity cesspools should be banned.

The majority of commentors supported the ban. The prevailing opinion among these commentors was that strong steps need to be taken to keep pathogens from these wells from entering drinking water sources. The use of new large-capacity cesspools is recognized as an inferior method of disposing of waste that can be remedied by the installation of a septic system and has already been banned by many States. Thus, in response to the many

concerns expressed regarding acute contaminants in cesspools, EPA has banned new and existing large-capacity cesspools nationwide.

E Requirements for Motor Vehicle Waste Disposal Wells

1. Ban New Wells and Require Existing Wells To Either Close or Get a Permit

EPA co-proposed a ban and a ban with a waiver for existing motor vehicle waste disposal wells. The alternative allowing a waiver for existing wells would include a permit requiring waste fluids to meet MCLs and other health-based standards at the point of injection, owners or operators to adopt practices such as BMPs, and provide injectate and sludge monitoring.

Half of the commentors opposed the idea of waivers, believing a ban was necessary to prevent endangerment of current and future drinking water sources. Commentors' concerns with a permit program included: inadequacy of monitoring and sampling; limited technical knowledge on the part of many owners/operators to ensure that USDWs are not being threatened; and the burden on regulating agencies to satisfactorily implement and enforce a permit program. Pointing to the vulnerability of motor vehicle waste disposal wells to accidental spills of motor vehicle fluids, some commentors thought that any well left open would violate the existing non-endangerment provision in 40 CFR 144.12(a) of the UIC regulations. Some of these commentors recommended that if the waiver option was chosen, the permit must: (1) include sampling to determine the baseline quality of ground water; (2) specify that injection of waste must not degrade the current quality of the ground water, or must meet MCLs, whichever is more stringent; (3) include continued ground water sampling; (4) specify, based on the baseline quality of ground water, that no new substances can be introduced; and (5) specify that MCLs, other health-based standards, or Best Available Technologies (BATs) are utilized, whichever is most stringent.

Some of the commentors favored the waiver option, viewing a ban to be unnecessary and supporting the additional flexibility a waiver would allow States and industry. Commentors suggested a range of permit requirements including monitoring, sampling, training, and technology requirements. Some States expressed concern with sampling costs, site-specific criteria, and compliance assurance.

EPA believes there is a high potential for endangerment of drinking water

sources from motor vehicle waste disposal wells located in ground water protection areas and other sensitive ground water areas. However, EPA recognizes that treatment technologies and BMPs, if properly implemented, could allow wastewater to meet MCLs and other health-based standards at the point of injection. Therefore, today's final rule promulgates a ban with a waiver option for existing motor vehicle waste disposal wells. UIC Directors should use their best judgment when issuing waivers from the ban, and consider factors such as cost effectiveness, maintenance of treatment systems, potential for impacting water systems, a facility's compliance history, and records showing waste recycling.

The specific permit requirements could vary from one well to the next, but would have to include the following three conditions at a minimum. First, owners or operators would have to make sure fluids released in their wells meet the primary drinking water MCLs and other appropriate health-based standards at the point of injection. Second, owners or operators would have to follow specified BMPs for motor vehicle-related facilities. Third, owners or operators would have to monitor the quality of their injectate and sludge (if present in dry wells or tanks holding injectate) both initially and on a continuing basis in order to demonstrate compliance with the MCLs. The rule, however, does not specify monitoring requirements that must be followed, leaving those instead to the discretion of the Director to specify in the permit.

When all of these requirements are put together, EPA believes the permit would specify the following kinds of monitoring requirements, but recognizes that States will design monitoring requirements appropriate to the situation. As a first step, owners or operators might be required to characterize the quality of their injectate and any sludge. If liquid from the sludge has chemical concentrations below the MCLs, owners or operators might be required to analyze the injectate quarterly for the first three years and then annually if it is consistently below the MCLs. They also might be required to analyze their sludge annually. If the injectate is below the MCLs but liquid from the sludge is above the MCLs, then owners or operators might have to follow the same monitoring requirements as above plus pump and properly dispose of their sludge. Finally, if the injectate is above the MCL and the liquid from the sludge is above the MCL, then the owner or operator would need to (1) Install treatment to meet permit requirements to meet MCLs

and other health based standards at the point of injection; (2) pump and properly dispose of their sludge; (3) perform quarterly sampling of injectate for the first three years and then annually if consistently below the MCLs; (4) perform annual sampling of the sludge, and (5) other requirements established by the Director to protect USDWs.

Although the rule envisions that States will issue individual permits, States are not precluded from issuing a general permit to a group of facilities that have similar characteristics. For instance, there may be a number of service stations in an area that have similar waste streams, BMP's, good compliance histories and for which the permit conditions would be identical. Another example could be a group of facilities owned by a municipality that are used for a similar purpose, have similar waste streams and follow that same procedure, including BMPs. General permits would have to specify the initial and ongoing monitoring requirements, BMPs, and that MCLs and other health based standards must be met at the point of injection. State regulations would have to include provisions for these general permits, including their conditions and where they could apply.

2. MCLs at the Point of Injection

Under the ban with a waiver option proposed for existing motor vehicle waste disposal wells, such wells would be allowed to stay open subject to a permit that, among other things, requires waste fluids to meet MCLs and other health-based standards at the point of injection. As discussed in the preamble to the proposed rule, some members of the Small Business Advocacy Review Panel thought that EPA should allow MCLs to be exceeded (e.g., by 10 or 100 times) for certain contaminants under certain conditions. These Panel members pointed out that metals and some other contaminants are attenuated as they migrate through soil prior to reaching the water table and are diluted within an aquifer prior to reaching a drinking water withdrawal well.

The majority of commentors supported the proposal to meet MCLs and other health-based standards at the point of injection. In general, these commentors believed that allowing injection at levels above the MCL would be the same as providing "a permit to pollute," and that it would be illogical for EPA to use the MCLs as cleanup benchmarks at Superfund sites, yet allow new ground water contamination by permitting injection above the MCLs.

Several of these commentors also believed it was not realistic to expect small businesses that own or operate motor vehicle waste disposal wells to be able to determine whether their site-specific conditions were suitable to safely allow injection at levels higher than the MCLs.

A few commentors were concerned that MCLs at the point of injection was not protective enough, believing instead that background concentrations in ground water should be used as the standard or that the rule should prohibit the introduction of any potentially hazardous chemical into USDWs, even when present in concentrations below MCLs. About a third of the commentors opposed the proposed requirement, believing that it was unnecessary to protect USDWs where contaminant dilution and/or attenuation was expected to be significant and that it would impose an undue burden on well owners or operators.

Based on these public comments, today's final rule requires fluids released into motor vehicle waste disposal wells to meet MCLs and other appropriate health-based standards at the point of injection, as one of the permit conditions that have to be met when such wells remain open under the waiver option. EPA also believes that developing a set of conditions within which a motor vehicle waste disposal well could release fluids that exceed drinking water standards without endangering USDWs is not a viable option for most small businesses and regulatory authorities because of the difficulty and expense involved in collecting the site-specific hydrologic, geologic, and soil information needed to determine that injection above the MCLs does not endanger USDWs. EPA believes that requiring MCLs and other health based standards to be met at the point of injection is necessary to ensure that motor vehicle waste disposal wells meet the non-endangerment provision in § 144.12(a). In future rulemaking, the regulatory controls needed to prevent endangerment from other types of Class V wells will be evaluated on a case by case basis. House Report 13002 (July 10, 1974) stated that the UIC endangerment standard should be "liberally construed so as to effectuate the preventive and public health protective purposes" of the SDWA (A Legislative History of the Safe Drinking Water Act, Committee Print, February, 1982, at 564). More specifically, in defining endangerment, the House Report states that "actual contamination of drinking water is not a prerequisite either for the establishment of regulations or permit

requirements or for the enforcement thereof." *Id.*

3. Reclassification of Certain Motor Vehicle Wells

The proposed rule did not address specific conditions or requirements for converting a Class V motor vehicle waste disposal well to another kind of Class V well. The preamble to the proposed rule, however, did discuss how a motor vehicle service facility might continue to operate its Class V well if all motor vehicle waste fluids generated at the facility were segregated and only other liquids, such as stormwater, ice melt, and wastewater from carwashes, were allowed to enter the injection well. The preamble to the proposed rule suggested actions that could result in a well being converted, including performing motor vehicle maintenance in areas that do not drain into the Class V well, or installing a semi-permanent plug (also known as a plumber's plug) in the sump outlet leading to the injection well.

The proposal advised that for the use of a semi-permanent plug to be acceptable, the plug would truly have to be semi-permanent. It could not be easily removed, as this would create the potential for the well to remain open and subject to abuse. Because of these concerns, the proposal specifically requested comment on the use of semi-permanent plugs, particularly on their limitations and on circumstances where their use is or is not appropriate.

Most of the public comment received on motor vehicle waste disposal well conversions addressed the use of semi-permanent plugs, with the majority opposing their use. Concerns included potential for improper disposal of wastes, economic incentives to dispose of automotive wastes in the well, and the regulatory program's inability to maintain an adequate field presence to ensure such plugs are being properly used. The majority of these commentors preferred permanent closure of the well.

Supporters of semi-permanent plugs maintained that inappropriate wastes would not enter the drain, adding that the flexibility to inject appropriate fluids while avoiding the costs of well closure is an important option for small businesses. Commentors suggested provisions be added to ensure abuse does not occur.

EPA agrees with commentors concerned with the potential misuse and/or abuse of floor drains in motor vehicle-related facilities. However, because of the need expressed by small businesses, EPA will allow motor vehicle waste disposal well conversions at the UIC Directors' discretion as long

as no motor vehicle waste can enter the well. The Director must ensure that all motor vehicle fluids are physically segregated from the fluid being injected and the unintentional or illicit discharge of motor vehicle waste is unlikely based on a facility's compliance history and records showing proper waste disposal. Based on the concerns expressed through public comment, the use of semi-permanent plugs will not be considered as a viable means to segregate waste. EPA believes that in order to meet the requirements for well conversion, owners or operators of converted Class V wells in motor vehicle related facilities will need to implement BMPs. In addition, in order to meet the requirements for well conversion, owners and operators must take measures to ensure that motor vehicle waste fluids are physically segregated from the injection well. EPA plans to develop a guidance document for the conversion of motor vehicle waste disposal wells.

4. Storm Water Wells at Motor Vehicle Waste Disposal Sites

During stakeholder meetings and through public comment, commentors expressed concern over the classification of storm water drainage wells located at motor vehicle facilities. In the proposed rule, EPA solicited comment on ways of defining storm water wells and distinguishing them from motor vehicle waste disposal and industrial wells. While this final rule does not address industrial or storm water injection wells, it is important to clarify EPA's position regarding storm water wells located at motor vehicle facilities.

Storm water drainage wells located at motor vehicle facilities that are intended for storm water management but that also may receive insignificant amounts of fuel due to unintentional small volume leaks, drips, or spills at the pump are not considered motor vehicle waste disposal wells and are not subject to this rule. The Agency will develop guidance to assist owners/operators in determining if their well is a motor vehicle waste disposal or drainage well.

F Compliance Period

At § 144.87, the proposed regulation provided 90 days after the local assessment for ground water protection areas is completed for owners/operators of existing motor vehicle waste disposal wells in those areas to either close their wells or submit an application for a waiver, if allowed. The UIC Program Director would have the flexibility of extending the 90-day deadline for up to one year.

While one commentor supported the proposed compliance period, the majority of the commentors opposed the 90-day deadline. Reasons for opposition included the burden on small businesses and States, as well as potential difficulties in disseminating information and finding alternative means for wastewater disposal within that time frame. These commentors recommended that the deadline be extended anywhere from 180 days to two years, with the majority suggesting a one-year compliance period.

EPA agrees with the majority of the commentors that a 90-day compliance period may not be sufficient to comply with the new requirements. Therefore, EPA has extended the compliance period to one year after completion of the local assessment for ground water protection areas. However, EPA strongly encourages owners and operators who wish to apply for a waiver to do so within 90 days of the completion of their local assessment for ground water protection areas to insure they are operating under permit conditions within the one year compliance period. The additional time will allow State UIC staff to conduct outreach and will provide owners and operators additional time to achieve compliance. In addition, as proposed, the UIC Director may grant a one-year extension if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technologies.

G Deadlines for Delineations of Covered Areas

1 Drinking Water Source Assessment Program Not Completed On Time

The proposed rule, at § 144.87(b), states that if a State does not complete its EPA approved Drinking Water Source Assessment Program for its community water systems and non-transient non-community water systems by May 2003, the regulations will apply statewide permanently. This deadline was chosen because it assumed all States would meet the deadlines in Section 1453 of the SDWA and that EPA would approve an eighteen month extension for States to complete assessments, which would be in May of 2003. The proposal requested comments on alternative approaches.

About one quarter of the commentors on this issue agreed that the requirements should apply statewide if a State's Drinking Water Source Assessment Program is not complete by May 2003, noting that this option would maintain consistency throughout each State

The remaining commentors on this issue opposed either permanent statewide application of the rule or the May 2003 deadline. Many of those opposed were concerned with the burden on owners and operators. A few commentors asserted that statewide implementation would exceed EPA's authority under the SDWA, that States do not need an added incentive to complete Drinking Water Source Assessment Programs, or that permanent statewide application of the rule would discourage partnerships between States and owners or operators.

Several commentors suggested variations on the statewide proposal, such as: phased implementation linked to Drinking Water Source Assessment completion; exempting wells on a case-by-case basis from a statewide ban, and, exempting areas of the State where delineations were completed but Drinking Water Source Assessments were not.

Commentors who opposed the proposal also expressed concern that the pressure to complete a State's Drinking Water Source Assessment Program by the May 2003 deadline may hinder a State's effort to develop an effective program. Other commentors supported an extension in May 2003 if a State could show significant progress on its Drinking Water Source Assessments or utilizing financial incentives to encourage States to complete their Drinking Water Source Assessment Program on time.

In response to many of these comments, for purposes of this rule EPA has extended the deadline. The final rule specifies at § 144.87 (b) that the rule applies statewide on January 1, 2004 if the local ground water assessments for community water systems and non-transient non-community water systems under an EPA approved Drinking Water Source Assessment Program are not completed. The extra time accounts for possible modifications to State programs submitted during EPA's review process. Further, the later date provides additional time for affected owners and operators to be informed of the application of this rule to their facilities and come into compliance. In addition, States can apply to the EPA for an extension to up to one year if they have made reasonable progress in completing their assessments for ground water protection areas. States must apply to EPA for an extension by June 1, 2003.

EPA retained statewide implementation, if a State Drinking Water Source Assessment Program is not completed because this is the only preventive approach practical given that it would be difficult to ascertain which

areas are most vulnerable if assessments are not completed. At the same time, EPA believes that all States will complete assessments for community water systems and non-transient non-community water systems before the January 1, 2004 deadline. There are approximately 170,000 public water systems for which States must develop source water assessments. Of those systems 40,820 are community water systems, 18,660 are non-transient non-community water systems and 87,870 are transient water systems. Thus, for the purposes of this rule, States must complete less than half of their assessments by this deadline and EPA believes that if a State does encounter difficulties it will prioritize its efforts and complete the community and non-transient non-community systems first. In addition, many States have received early approval of their programs and have begun their assessments ahead of schedule. In addition, a review of the State's Source Water Assessment Plans, which have been submitted to EPA for approval, indicate that many States intend to use their EPA approved Well Head Protection Program as the basis for developing their ground water protection areas. Approved Well Head Protection Programs include two of the three steps required to complete the ground water portion of a State Source Water Protection Plan. States that adopt their existing Well Head Protection Plan will have met the majority of the requirements for the ground water portion of the State Drinking Water Source Assessment and Protection Program. Therefore, if a State fails to complete all local assessments for ground water protection areas by January 1, 2004 (or January 1, 2005 with an extension) the rule will apply statewide for existing motor vehicle waste disposal wells.

2. Sensitive Ground Water Areas Not Delineated on Time

Both Primacy States and EPA Regions (for DI States) must delineate sensitive ground water areas by January 1, 2004. If States have not delineated their other "sensitive ground water areas" by that time, the regulations affecting motor vehicle waste disposal wells will apply statewide permanently by January 1, 2007. Existing motor vehicle waste disposal wells (in delineated sensitive ground water areas but outside of ground water protection areas) in Primacy States and EPA Regions (for DI States) must achieve compliance by January 1, 2007.

The January 1, 2004 date was chosen as a deadline for delineation of sensitive ground water areas to allow States time

to delineate these areas. EPA is confident that States will delineate sensitive ground water areas well before the January 2004 deadline. States can delineate sensitive ground water areas based on existing information such as State specific geologic and hydro-geologic maps. An assessment and inventory of contaminant sources within these areas will not have to be completed. In addition, States already have knowledge of these areas, and some States and EPA Regions (for direct implementation States) have already mapped sensitive ground water areas. Phased implementation will allow resources to be spent on sensitive ground water areas once the rule has already been implemented in ground water protection areas. However, States may apply to the EPA for an extension for up to one year to complete delineations for sensitive ground water areas if they are making reasonable progress in identifying these areas. States must apply for this extension by June 1, 2003. EPA will consider and decide the merits of the extension requests separately for completing assessments for ground water protection areas and for identifying other sensitive areas.

3. Assessments for Ground Water Protection Areas Completed Before UIC Primacy Revisions Are Approved

EPA believes that, based on the current status of States in developing State Drinking Water Source Assessment and Protection Programs and EPA in approving them, most programs will likely be approved by the end of 1999. Once approved, States will begin to complete their local assessments for ground water protection areas. It is likely, therefore, that some local assessments will be completed before certain Primacy States have had an opportunity to revise and receive EPA approval for their updated Class V UIC programs. In this case, owners and operators of existing motor vehicle waste disposal wells (located in a ground water protection area with a completed assessment) have one year from the date of EPA's approval of their State's Class V UIC program revision to comply with the new Class V requirements.

H Pre-Closure Notification

The proposal, at § 144.88 (table), required owners or operators of large-capacity cesspools and motor vehicle waste disposal wells in States where the UIC Program is directly implemented by EPA to notify the Program Director of their intent to close their well at least 30 days prior to closure.

These requirements were proposed for DI programs based on the need to track high-priority well closures in EPA-administered programs. In the interest of flexibility, the proposal did not require State-administered UIC programs to adopt the same pre-closure notification. EPA solicited comments on the merits and potential impacts on Primacy States of requiring pre-closure notification.

The majority of commentors were in favor of requiring pre-closure notification in Primacy States, as this would allow for a more accurate inventory, and would provide a mechanism for State oversight of well closures.

For these reasons, EPA has decided to extend pre-closure notification for large-capacity cesspools and motor vehicle waste disposal wells to Primacy States in all areas covered by the rule at § 144.88 (table).

I Exclusion Criteria for Cesspools and Septic Systems

EPA proposed to revise the exclusion criteria for septic systems and cesspools receiving solely sanitary wastes to exclude from the UIC regulations both septic systems and cesspools with the capacity to serve fewer than 20 persons per day and those serving individual or single family residences. The proposal eliminated the distinction between residential and non-residential systems and set the exclusion criteria at systems with the capacity to serve fewer than 20 people per day. While most commentors supported the 1995 proposal, the vast majority of people addressing this issue added that the 20 persons-per-day threshold should be changed. These commentors, many of which were States, generally favored a criterion that was based on waste flow rate or septic tank size. However, it was not clear to EPA if any of the alternative criteria that were suggested could be adopted on a national level without significantly disrupting many State programs nor that such a change was needed to improve USDW protection.

To shed further light on this issue, the 1998 proposal asked for further comments on whether the criterion needed to be changed to fix a significant problem. In general, the comments received were similar to those received for the 1995 proposal. The majority of the commentors suggested EPA use a flow rate (ranging from less than 400 to 20,000 gallons per day). Some commentors thought the 20 persons criterion was too low and should be set at 25. Still others suggested that there is less waste per person from industrial/commercial sites than residential sites.

EPA recognizes that the current criterion as written in § 144.1(g) has weaknesses. However, because no commentor recommended an alternative criterion that would not disrupt existing State programs or that was necessary to ensure better protection of USDWs, today's rule retains the criterion at § 144.1(g). Under this criterion, non-residential cesspools, septic systems or similar waste disposal systems are covered under the UIC program if they are used solely for the disposal of sanitary waste, and have the capacity to serve 20 or more persons a day. Residential large-capacity cesspools and septic systems are covered by the UIC program if they are used by a multiple dwelling, community or regional system for the injection of waste.

EPA will re-evaluate this issue in the context of a future Class V rulemaking, using information collected during the Class V Study of all wells not covered by today's rule, including septic systems.

J Other Amendments

EPA is finalizing other minor revisions originally proposed in the August 28, 1995 notice, in order to provide a complete and coherent picture of all Class V UIC changes being contemplated. These revisions address (1) a few definitions in §§ 144.3 and 146.3, and (2) the classification of radioactive waste disposal wells in §§ 144.6 and 146.5. In addition, certain existing Class V requirements are being reiterated in or moved to the plain-English version of the consolidated Class V regulations in 40 CFR 144 Subpart G.

1. Categories of Class V Wells

In the 1995 and 1998 Class V proposals, EPA solicited comment on a proposed reclassification scheme for all Class V well subtypes. Some commentors objected to the new classification scheme. Additionally, preliminary information gathered as a part of the Class V study indicates the proposed categorization scheme may not appropriately group the Class V subtypes and could be a source of confusion to Class V owners and operators in future rules.

In response to the public comment, EPA will retain the current Class V well type definitions found in § 146.5 (e) with one exception. The current list of Class V wells at § 146.5 does not include a definition of Motor Vehicle Waste Disposal wells. Therefore, EPA is finalizing the definition for Motor Vehicle Waste Disposal wells at §§ 146.5 (e)(16) and 144.81 as it was proposed.

2. Sections 144.3 and 146.3—Definitions

The regulation adds new definitions for "cesspool," "drywell," "improved sinkhole," "point of injection," "sanitary waste," "septic system," and "subsurface fluid distribution system." The rule also revises the existing definitions for "well" and "well injection."

An "improved sinkhole" is defined as a type of injection well regulated under the UIC program. Today's definition codifies EPA's interpretation that the intentional disposal of waste waters in natural depressions, open fractures, and crevices (such as those commonly associated with the cooling of lava flows or weathering of limestone) fits within the statutory definition of underground injection. A "subsurface fluid distribution system," which is a term used in the new definition of "septic system," is defined with a standard engineering description. The definition of "well" has been revised to clarify that a "well" includes improved sinkholes and subsurface fluid distribution systems.

The definition of "well injection" has been revised to eliminate a redundancy and simply state that well injection means the subsurface emplacement of fluids through a well.

3. Sections 144.6 and 146.5—Classification of Wells

The regulation revises § 144.6(a) and § 146.5(a) by adding a paragraph (3) to move Class V radioactive waste disposal wells injecting below all USDWs into the Class I category. Such Class V wells, in fact, are similar to Class I wells in terms of their design, the nature of fluids that they inject, and their potential to endanger USDWs. In particular, like Class I wells, such radioactive waste injection wells inject below all USDWs and warrant the same level of control.

The Agency believes that all of these wells are located in Texas, which already regulates them as Class I wells. Existing Class V radioactive waste disposal wells, therefore, should not be subject to any additional regulatory requirements. However, the Agency believes that Class I requirements related to permitting, construction, operating, monitoring, reporting, mechanical integrity testing, area of review, and plugging and abandonment are needed to prevent any new radioactive waste disposal wells from endangering USDWs. The Agency, thus, has reclassified Class V wells that inject radioactive waste below the lowermost USDW as Class I wells and subject them to the full set of existing Class I

requirements. This approach is administratively simpler and more straightforward than keeping the wells in the Class V universe and developing identical requirements under the Class V program.

EPA wishes to clarify that this reclassification of Class V radioactive waste disposal wells does not affect the disposal of naturally occurring radioactive material (NORM) in Class II wells as part of oil and gas field operations. The injection of fluids associated with oil and natural gas production, including such fluids containing NORM, would continue to be regulated under existing Class II UIC requirements or under applicable regulations prescribed by the Primacy State agency.

4. Existing Regulations Being Reiterated or Replaced in 40 CFR Part 144, Subpart G

The existing description of the five classes of injection wells in § 144.6 has been reiterated in § 144.80 in the new Subpart G. Similarly, the existing prohibition of fluid movement in § 144.12 has been reiterated in § 144.82.

The description of when Class V injection is authorized by rule in § 144.24 has been deleted and moved to §§ 144.84 in the new Subpart G.

5. Part 145—State UIC Program Requirements

The Agency has amended § 145.11 to be consistent with the changes in 40 CFR Part 144. These amendments insert a set of new requirements in § 144.88 that State programs must have the legal authority to implement.

These amendments to Part 145 are technical corrections to incorporate the changes to 40 CFR Part 144. The corrections include a reference to the new section and a redesignation of paragraphs to accommodate the new references.

6. Sections 144.23 and 146.10—Class IV Wells

The August 28, 1995 notice proposed to add a new § 144.23(c) to clearly rule authorize Class IV wells used to inject treated water into the formation from which it came if such injection is approved by EPA or a State as part of a RCRA or CERCLA remediation program. The 1995 notice also proposed to add a new paragraph in § 146.10(b) to reiterate that owners or operators of Class IV wells in EPA-administered programs have to close their well in accordance with the existing requirements in § 144.23(b) prior to abandonment. Both of these proposals, which are described in more detail in

the preamble of the 1995 proposal (see 60 FR 44665), are not related to Class V wells and thus were discussed but not revisited in the 1998 proposed revision to the Class V regulations (63 FR 40587).

In general, public commenters supported the August 28, 1995 proposal as it related to section 144.23. Therefore EPA is finalizing new language at § 144.23 as proposed in 1995 as part of this rulemaking action.

No commenters addressed the proposed addition in § 146.10(b) presumably because it simply reiterates the existing Class IV well closure requirement in § 144.23(b) for the sake of clarity. Accordingly, EPA is finalizing the new § 146.10(b) as proposed in 1995.

V. Cost of the Rule

The Agency has prepared an Economic Analysis (EA) of today's final rule to assess its costs. This section summarizes the burden of the final rule on Class V large-capacity cesspool and motor vehicle waste disposal well owner/operators and the methods employed to calculate this impact. The complete EA has been placed in the rule-making docket.

A. Methodology Overview

EPA's methodology for estimating the national cost of the rule is largely identical to the methodology used to analyze the July 1998 proposed rule. The analysis was modified in certain respects, however, to reflect changes in the rule in response to public comment on the proposal and to make use of data that was not available at the time of proposal. On May 21, 1999, EPA published a Notice of Data Availability or "NODA" (64 FR 27741) to describe and request public comment on the additional data obtained by the Agency since its publication of the proposed rule in July 1998.

The following discussion summarizes the revisions to the Economic Analysis based data obtained after the proposal. The complete analytic methodology, along with the detailed results of the analysis, are presented in the Economic Analysis document available in the public docket.

1 Revised Estimates of the Numbers of Affected Wells

The Economic Analysis reflects new estimates of the number of wells that will be affected by today's rule. These estimates are based on information collected as a part of the "Class V Study" described in Section III C of this preamble and the notice of data availability published on May 21, 1999. The Class V Study provides the latest

State inventory information (i.e., on the documented and estimated number of wells of motor vehicle wells and large-capacity cesspools) reported to EPA in questionnaires completed by staff in the States and EPA Regions. The Economic Analysis uses the Class V Study to determine the national universe of potentially affected Class V UIC wells. (In contrast, the prior analysis developed national estimates of the number of waste disposal wells by employing a number of assumptions, because survey data on the number of wells were not available.)

EPA received comments on the use of this data from five commentors. These commentors expressed concern that there are uncertainties associated with these data. EPA understands the concerns of the commentors and recognizes that a certain amount of uncertainty exists with this (and any other) facility inventory data. However, EPA believes that the new data presented in the NODA represents the best available information to use in the economic analysis supporting today's rule. EPA further believes that using this new information to estimate the economic impact of the Class V requirements is a vast improvement over the economic analysis for the proposed rule. In that analysis, EPA had to make numerous assumptions, relating to Class V well inventories, to estimate the economic burden of the new requirements.

The Class V study also collected State Class V regulations. EPA reviewed State regulations to determine which States had requirements that were at least as stringent as today's final rule. The analysis then excluded wells in States with UIC programs that are at least as stringent as today's final rule. For example, the analysis excludes large-capacity cesspools in States that already have banned them in their regulations.

To calculate the number of motor vehicle waste disposal wells that fall within ground water protection areas, EPA assumed that States will delineate ground water protection areas by using areas of one-half mile radius around water supply wells for ground water community water systems (G-CWS) and of one-quarter mile radius around water supply wells for ground water non-transient non-community water systems (G-NTNCWS). This methodology is consistent with the 1998 economic analysis. However in the Economic Analysis for the final rule, EPA used data from State Drinking Water Source Assessment and Protection Programs, when available, to refine actual G-CWS and G-NTNCWS radii on a State by State basis. These State Drinking Water

Source Assessment and Protection Programs were described in the NODA of May 21, 1999.

The Economic Analysis estimates the number of wells assumed to fall within sensitive ground water areas based on State-specific data regarding the presence of certain conditions that might be considered sensitive for purposes of ground water protection (e.g., sole source aquifers, shallow unconsolidated aquifers, karst, fractured bedrock). The NODA requested public comment on applying the rule to wells in sensitive ground water areas.

As a result of the new data and estimation methodology and the modified scope of the rule as applied to motor vehicle waste disposal wells in sensitive ground water areas, the number of wells estimated to be affected by the rule has changed relative to EPA's estimates for the proposed rule. The number of affected large-capacity cesspools is now estimated at 2,723 (compared to 55 estimated for the proposed rule). The number of affected motor vehicle wells is now estimated at to range from 3,035 to 9,903 (compared to 7,045 estimated for the proposed rule). This range is based on the amount of land area that States may delineate as sensitive.

2. Phase-in Assumptions

The Economic Analysis has been revised to more realistically model when the rule will take effect. This is important primarily due to one aspect of how the final rule differs relative to the proposed rule. Specifically, with regard to motor vehicle wells, the final rule applies not only to wells in ground water protection areas (as did the proposed rule), but also to wells in sensitive ground water areas. However, the rule requires wells in ground water protection areas to come into compliance with the rule no later than 2004, whereas motor vehicle wells in sensitive ground water areas must come into compliance over a slightly longer period (by 2007). Moreover, even for large-capacity cesspools and for motor vehicle wells in ground water protection areas, it is unrealistic to assume that all wells will come into compliance in the same year.

To accurately evaluate the costs of the rule, the Economic Analysis has been revised to recognize the different time periods over which wells are expected to come into compliance. For motor vehicle wells in ground water protection areas, this period is 2001–2004. For motor vehicle wells in sensitive ground water areas, this period is 2004–2007. For large-capacity cesspools, this period is 2001–2005.

3. Higher Closure Costs

EPA has increased the estimated well closure costs associated with the final rule based on data obtained from several sources following the publication of the proposed Class V rule (63 FR 40586, July 29, 1998). Specifically, EPA obtained additional well closure cost data from EPA Region II, as well as cost data submitted by the Penske Truck Leasing Company (Penske). Each of these sources was discussed in the NODA of May 21, 1999. EPA also considered the cost data submitted by the American Trucking Association (ATA) during the public comment period for the proposed rule.

- *EPA Region II Data.* EPA obtained well closure cost data from EPA Region II during a staff visit in March 1999 to review case files on Class V wells. This visit provided additional information on Class V motor vehicle wells found within the State of New York. Among the information obtained were a limited number of detailed cost breakdowns used as cost data references for the revised economic analysis.

- *Penske Truck Leasing Company (Penske)* The Penske data included closure cost information for seven Class V well closures, as well as a summary of closure costs for fifteen wells closed by Penske. EPA used two of the seven well closure reports that provided an itemized list of well closure costs. In addition, the EPA used the general summary sheet to obtain information on the costs associated with various alternative motor vehicle wastewater management strategies. The Penske information reflected, in particular, the costs of well closure activities at larger truck maintenance and washing facilities, rather than smaller automobile service facilities.

- *American Trucking Association (ATA)* During the public comment period on the proposed rule, the ATA submitted a set of comments presenting a variety of actual well closure costs and approximate cost ranges (e.g., minimum and maximum costs). The appendices included summaries with non-itemized closure costs for 24 different motor vehicle facilities (including some of the same facilities described in the Penske data) as well as other summaries presenting partially-itemized closure costs and costs associated with alternative wastewater disposal strategies (e.g., connection to a sanitary sewer). Most of the well closure cost data provided by the ATA were aggregated in a manner that made it difficult to determine costs for specific well closure activities. Consequently, EPA relied primarily on certain

summary sheets included in the appendices.

EPA compared these data to the costs used in the economic analysis for the proposed rule. Specific cost elements (e.g., soil waste disposal fees) used in the 1998 economic analysis were compared to the corresponding cost elements found in cost data from the three sources. Average costs were used when various cost estimates were available. Some cost elements could not be compared to cost elements reported in other sources (ATA, Penske, EPA Region II) because the other sources presented only aggregated costs or they categorized costs in a different manner.

As part of the comparison, EPA also considered the scope and context of the new data. For example, larger facilities that perform truck maintenance and truck washing may generate a larger amount of wastewater, with different wastewater constituents, than most smaller automobile service facilities; therefore, the facilities might have a larger or different type of Class V well. In addition, more extensive contamination might occur at such sites, requiring more extensive well closure activities which in turn led to higher well closure costs. Well closures and clean ups performed voluntarily by the facility owner (e.g., to obtain an optional no-liability verification letter from the State environmental authority) or as a result of a notice of violation or EPA Administrative Order could be more extensive than would be required by the new Class V rule.

EPA's cost comparison and analysis of the new data indicated that EPA's closure cost estimates in the proposal were generally reasonable or even overestimated the cost of some activities. However, the comparison also revealed that EPA had underestimated the fees that contractors, consultants, and/or engineers would charge for their well closure services. Specifically, EPA's prior estimates did not take into account the fact that motor vehicle facilities sometimes hire consultants and/or engineers to lead the well closure efforts. EPA therefore increased the estimate for the average cost of closing a motor vehicle waste disposal well to account for hiring consultants and engineers. However, because the rule does not require a facility to hire a consultant or engineer to close a well, EPA estimates that only 10 percent of the motor vehicle facilities will do so. The new estimates therefore reflect a prorated average cost of hiring consultants and/or engineers. EPA has concluded that no other adjustments to the unit costs used in the economic analysis are necessary.

B. National Cost of the Rule

The Agency estimates the total annual cost of the rule ranges from \$18.1 million to \$40.3 million. This estimate assumes that all large-capacity cesspools will be affected by the rule, but that only those motor vehicle wells located in ground water protection areas or sensitive ground water areas will be affected. This assumption is consistent with EPA's belief that all States will complete their assessments of ground water protection areas by January 2004 and will delineate sensitive ground water areas by January 2004. In the event that a State fails to delineate ground water protection areas, or elects not to delineate sensitive ground water areas, then the provisions of the rule would apply to all motor vehicle wells in the State permanently. However, the Agency believes it unlikely that the rule will be applied to motor vehicles State-wide in any State because most State Drinking Water Assessment Programs will be approved by EPA by the end of the year and all States appear to be on track to meet the milestones established in the new Class V requirements for ground water protection areas. Further, States can receive a one year extension if they are making reasonable progress in completing assessments for ground water protection areas.

C. Facility Impacts

The final rule results in an estimated average annual cost per facility to owners/operators of motor vehicle waste disposal wells of between \$4,450 and \$11,000 depending on the waste streams generated by the facility. The estimated average annual cost per facility to owner/operators of large-capacity cesspools is \$3,626. These per facility costs are amortized over 20 years at a discount rate of 7 percent.

EPA estimates that companies in at least 18 SIC codes will be affected by the final rule. EPA estimates the total number of facilities affected by the rule to be 5,300 for motor vehicle wells and 2700 for large-capacity cesspools. Approximately 98 percent of the affected facilities are classified as small businesses under the Small Business Administration regulations. See Section VI.D for a discussion of impacts to small businesses. For the final rule, EPA estimates that 2,600 of the entities (or 50 percent the total businesses affected) will have to incur a cost of greater than one percent of sales to comply with the proposed rule. An estimated 945 businesses will incur costs greater than three percent of sales under the final rule. The cost per facility includes the full cost owners and operators would

incur to implement BMPs such as recycling and waste reduction. A recent survey of motor vehicle related facilities indicated that a majority of facilities are already implementing some BMPs. Therefore, EPA believes that the number of facilities affected at greater than three percent of sales might be overestimated.

The rule also affects about 380 small government entities. EPA did not estimate the total number of governments that are affected by the final rule. Governments are expected to incur a cost of less than one percent of their net revenue.

VI. Effect on States With Primacy

According to regulations at 40 CFR 145.32, Primacy States would have 270 days from the effective date of the final rule to submit to EPA documents demonstrating that proper legal authority and regulations exist to administer and enforce the new requirements for Class V cesspools and motor vehicle waste disposal wells. Depending on the existing State program and authorities, these documents could include a modified program description that outlines the structure, coverage, and processes of the State's Class V UIC program. Revisions to State UIC Programs needed to incorporate the new requirements will be subject to public notice and comment requirements.

Reasonable efforts by States to implement and enforce the new requirements as part of their ongoing programs should not be overly burdensome, because the new requirements are primarily directed toward well owners/operators, not UIC program authorities. For example, the ban on new motor vehicle waste disposal wells is self-implementing by owners or operators, with no new reporting, inspection, or other administrative requirements for Primacy States. However, there may be an increased burden on States that choose to use the waiver option for existing motor vehicle wells to review the permit application and appropriate conditions for each facility or facilities wishing to keep its motor vehicle waste disposal well open. Based on this review, States have to either deny the application or develop and enforce permit requirements to make sure the well does not endanger USDWs. Secondly, Primacy States may delineate other sensitive ground water areas or choose to implement the rule statewide. States will submit a plan to the EPA with their primacy program revision. The plan will outline how they intend to conduct the delineations.

VII. Administrative Requirements

A Executive Order 12866

Under Executive Order 12866, [58 FR 51,735 (October 4, 1993)] the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may: (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action." As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record.

B Children's Health Protection and Executive Order 13045

Executive Order 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to the Executive Order because it is not economically significant according to the criteria for economic significance in E.O. 12866. Further, the Agency does not have reason to believe the rule concerns environmental health or safety risks that may have a disproportionate effect on children. The environmental

health and safety issues addressed by this rule are the protection of public drinking water sources used by all sectors of the population.

C. Paperwork Reduction Act

The Office of Management and Budget (OMB) has approved the information collection requirements contained in this rule under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and has assigned OMB control number 2040-0214.

Several types of information will be collected under the rule. Owners and operators of large-capacity cesspools (which are banned under today's rule) will be required to submit a pre-closure notification to the State or EPA indicating their intention to close their large-capacity cesspool. Similarly, some owners and operators of Class V motor vehicle waste disposal wells located within a ground water protection areas or State-delineated sensitive ground water areas will close and must also submit a pre-closure notification. The pre-closure notifications will enable EPA and States to ensure that wells are closed properly.

Other motor vehicle well owners and operators that receive waivers will be required to obtain a permit and to meet the monitoring requirements as specified in the permit. While EPA has not specified the frequency of monitoring, for the purposes of the ICR, annual sludge monitoring and quarterly injectate monitoring for the first three years after the permit is received and annual monitoring thereafter was assumed in order to calculate information collection costs. The permit application and monitoring reports will enable the States and EPA to evaluate whether continued operation of the well will pose an unacceptable threat to ground water.

At the State level, primacy States will need to prepare revised primacy applications to demonstrate their readiness to implement the rule. Also, States and EPA (for direct implementation States), are likely to delineate sensitive ground water areas within their State including karst, fractured bedrock, shallow unconsolidated aquifers, and sole source aquifers. This process will entail preparing a plan outlining the proposed methods for delineation that will be submitted with the States primacy program revision. The delineations will enable States and EPA to determine which motor vehicle waste disposal wells are affected by today's final rule.

EPA believes the information discussed above is essential to protecting each State's ground water

drinking supplies. EPA uses information on all classes of injection wells, including Class V wells, to track the performance of the UIC Program toward meeting its goal of protecting USDWs from potential threats due to injected wastes. Responses to the request for information will be mandatory in accordance with provisions in 40 CFR 144.83 (Underground Injection Control). Pre-closure notifications allow UIC Programs to track the success of the Program in closing those wells that pose the greatest threat to USDWs. The Agency uses the information supplied in permit applications to track the location and numbers of Class V wells. Monitoring data provide information on the types of wastes injected and will be used to determine whether or not injection should be allowed to continue and under what conditions. State Drinking Water Source Assessment and Protection Programs may use information on permitted or closed Class V injection wells if they choose to update their contaminant source inventories.

Any Class V injection well operator may request that information submitted be kept confidential, as provided in 40 CFR 144.5 (Confidentiality of Information). All confidential information is treated in accordance with the provisions of 40 CFR part 2 (Public Information). Respondents to the information collection requirements may claim confidentiality by stamping the words "confidential business information" on each page containing such information. However, the Agency will not consider the following information confidential:

- The name and address of any facility with a Class V waste disposal well.
- Information regarding the existence, absence, or level of contaminants in drinking water.

If no claim of confidentiality is made at the time of submission, EPA may make the information available to the public without further notice.

EPA has estimated the burden associated with the specific record keeping and reporting requirements (summarized above) of the rule in an accompanying Information Collection Request (ICR). Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions, develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and

disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

The ICR estimates the hourly burden and cost to owners and operators of affected Class V wells for complying with the requirements. EPA estimates that, over the three years covered by the information collection request, the number of owners and operators of Class V injection wells responding to the information collection request will be 1,463. The average annual hours per response for notification of well closure is 4.5 hours at a cost of \$115 for large-capacity cesspools and 7 hours at a cost of \$621 for motor vehicle waste disposal wells. The notification is a one time only requirement. There are no operation and maintenance costs associated with well closure. For owners and operators of motor vehicle waste disposal wells who seek a waiver and obtain a permit, the average annual hours per permit application is 58 hours at a cost of \$1,358. The costs for quarterly injectate monitoring and annual sludge monitoring, and annual reporting is \$2,057 per facility per year.

Over the three years covered by the ICR, a total of 1,192 Class V wells (including motor vehicle waste disposal wells and large-capacity cesspools) may be closed. In addition, 271 operators of motor vehicle waste disposal wells are expected to seek a waiver from the ban and apply for permits requiring them to monitor their injectate and sludge.

The total respondent burden associated for the 3-year period is estimated to be 63,024 hours (an average of 21,008 hours per year), and the present value cost will be \$2,680,674 (an average of \$954,075 per year). The average annual burden per owner/operator is 75.5 hours; the cost per response is \$5,203. The average annual burden per State is 984 hours; their cost per response is \$26,143.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. EPA is amending the table in Part 9 of currently approved ICR control numbers issued by OMB for various regulations to list the information requirements contained in this final rule.

D Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, a small entity is defined as: (1) A small business based on the definition of small business found in the Small Business Act (SBA); (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

In accordance with section 603 of the RFA, EPA prepared an initial regulatory flexibility analysis (IRFA) for the proposed rule and convened a Small Business Advocacy Review Panel to obtain advice and recommendations of representatives of the regulated small entities in accordance with section 609(b) of the RFA (see 63 FR 40586). A detailed discussion of the Panel's advice and recommendations is found in the Panel Report (W-98-05 A). A summary of the Panel's recommendations is presented at 63 FR 40590.

As required by section 604 of the RFA, EPA also prepared a final regulatory flexibility analysis (FRFA) for today's final rule. The FRFA addresses the issues raised by public comments on the IRFA, which was part of the proposal of this rule. The FRFA is available for review in the docket and is summarized below.

The final rule adds new requirements for two categories of endangering Class V wells to ensure protection of underground sources of drinking water. In particular, it affects the owners and operators of existing motor vehicle waste disposal wells in ground water protection areas and other sensitive ground water areas and owners and operators of new motor vehicle waste disposal wells and large-capacity cesspools nationwide (both types of Class V wells are discussed in the FRFA). As discussed in Section V B, EPA estimates that approximately 5,300

motor vehicle wells and approximately 2,700 cesspools would be subject to the final rule.

EPA's analysis to determine the impacts on small businesses uses the same methodology as the economic analysis for all businesses, as discussed in Section V, except the SBA size thresholds for small businesses were used to determine the number of small businesses affected. The SBA size thresholds were used in conjunction with 1992 census data to determine the percentage of small businesses in each of the 18 SIC categories believed to have affected wells. Approximately 4,800 small businesses and 380 small governments are affected by the motor vehicle well provisions of the final rule. EPA has limited data on the type of entities that use large-capacity cesspools and therefore has not estimated the number of small entities affected. EPA did not receive any public comment on the initial regulatory flexibility analysis.

The rule bans existing motor vehicle waste disposal wells in ground water protection areas and other sensitive ground water areas, but allows them to continue to operate if they seek a waiver from the ban and obtain a permit. The final rule also bans new motor vehicle waste disposal wells and new and existing large-capacity cesspools nationwide. EPA estimates that about 50 percent of the affected small entities may incur costs for closure or obtaining a permit that represent more than 1 percent of their sales (or revenue for small governments). EPA estimates that about 18 percent of the affected small entities may incur costs that represent more than 3 percent of their sales (or revenue for small governments). Based on these estimates, EPA has determined that the final rule might have a significant economic impact on a substantial number of small entities.

To reduce the impact of the final rule on small entities, EPA has attempted to keep permitting, reporting, and other administrative requirements to a minimum to provide regulatory relief to small entities while protecting drinking water supplies. In fact, the final rule incorporates many of the consensus recommendations offered by the Small Business Advocacy Review Panel that was convened by EPA to obtain advice and recommendations from representatives of affected small entities in accordance with Section 609(b) of the Act. In particular, the Panel recommended that the rule offer alternatives to the ban of Class V motor vehicle waste disposal wells. Therefore, the final rule allows owners/operators of existing motor vehicle waste disposal wells to seek a waiver from the ban and

obtain a permit EPA also adopted the Panel recommendations that UIC Program Directors be allowed to extend the time to comply with the new requirements from 90 days to up to a year in certain situations. The final rule allows owners and operators one year to comply with the new requirements, and allows the UIC Program Director to extend the deadline for up to an additional year if necessary to install treatment or hook up to a sewer system.

In the proposed rule, one option and one alternative were proposed for existing motor vehicle waste disposal wells: a ban; and rule authorization with additional requirements. The ban was not selected because, while it would offer the greatest protection to USDWs, the Agency recognized that there are some facilities that might be able to meet MCLs at the point of injection and could therefore seek a waiver from the ban and obtain a permit that allows them to continue using their well without endangering USDWs. The Agency did not choose the rule authorization option because it would not insure adequate protection of USDWs.

Other changes made in response to Panel recommendations include the following: The preamble clarifies that Class V wells at motor vehicle service facilities may not be subject to the rule if motor vehicle waste fluids are prevented from entering the well; the supporting economic analysis has been revised to acknowledge and account for the cleanup requirements that may be triggered by the rule to close certain Class V wells and to account for the likely overlap between areas where Class V wells are located and source water protection areas; owners and operators of existing motor vehicle waste disposal well can take steps to convert their well to another Class V well type; and the regulatory language has been expanded to identify ways in which well owners or operators can learn whether they are in a source water protection area.

EPA is requiring owner/operators of large-capacity cesspools and facilities with motor vehicle waste disposal wells that will close their well as a result of the rule to submit a single notification of their intent to close their wells. The collection of the pre-closure notification is necessary to track high-priority closures. Some motor vehicle waste disposal wells may choose to remain in operation based on a one-time waiver application from the ban to obtain a permit. The ICR assumes that States may require as a permit condition the collection of quarterly injectate monitoring and annual sludge

monitoring data during the first three years, in order to provide information for owners and operators and the State on the injection of potentially threatening wastes. Individual States will determine whether less frequent collection may be appropriate for wells in their States. The majority of the information collection, reporting and recordkeeping required by this rule can be done by technical and clerical staff.

As required by section 212 of SBREFA, EPA also is preparing a small entity compliance guide to help small entities comply with this rule. Small entities can obtain a copy of the compliance guide by contacting the Safe Drinking Water Hotline at (800) 426-4791, their State or EPA Regional UIC Director or the EPA website (<http://www.epa.gov/ogwdw/>). The small entity compliance guide will be available in April 2000.

E. Executive Order 13132. Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires EPA to provide to the Office of Management and Budget (OMB), in a separately identified section of the preamble to the rule, a federalism summary impact statement (FSIS). The FSIS must include a description of the extent of EPA's prior consultation with State and local officials, a summary of the nature of

their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. Also, effective November 2, 1999, when EPA transmits a draft final rule with federalism implications to OMB for review pursuant to Executive Order 12866, EPA must include a certification from the agency's Federalism Official stating that EPA has met the requirements of Executive Order 13132 in a meaningful and timely manner.

This final rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Thus, the requirements of section 6 of the Executive Order do not apply to this rule. This rule establishes requirements for owners and operators of certain Class V UIC wells. There will also be some costs to the implementing agency to administer this rule, however, EPA does not believe the incremental cost to administer the new requirements in the rule will be substantial. States and local governments may own or operate a well subject to this rule. However, the number of wells owned by States and local governments are limited and therefore there will not be substantial direct effects.

Although section 6 of Executive Order 13132 does not apply to this rule, EPA did consult with State and local officials throughout the development of this rule. EPA consulted with States during numerous Ground Water Protection Council meetings, stakeholder meetings held prior to rule proposal (63 FR 40590), and the National Drinking Water Advisory Council UIC/ Source Water working group meetings. States primarily were concerned with a provision in the proposed rule stated the requirements would be applied statewide if States failed to complete their Drinking Water Source Assessment and Protection Programs. The final rule allows States to apply to EPA for up to a one year extension for to complete their assessments (and sensitive ground water area delineations) if they have made reasonable progress. State comments on the proposed rule are addressed in the response to comment document.

F. Executive Order 13084 Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not

required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments because there are ten documented wells on tribal lands, and the majority of those are owned by private businesses not by Tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule. However, EPA did conduct outreach to Indian tribal governments during the comment period for the proposed rule. EPA Regions distributed information to tribal representatives through; presentations at water association meetings; distributing the proposed rule to Indian health services; direct mailings and notifying national tribal organizations.

G. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable

number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements. EPA consulted with State and local governments, as described in section VI.E. and tribes as discussed in section VI.F.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Specifically, the annualized costs of this rule to the regulated community are estimated to range from \$18.1 million to \$40.3 million. The annualized cost estimates for State governments are \$254,000. Thus, today's rule is not subject to the requirements of section 202 and 205 of the UMRA.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small local governments. Because EPA estimates that any small local government entities affected by this final rule will incur a cost of less than one percent of their net revenue, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small local governments.

H. National Technology Transfer and Advancement Act

As noted in the proposed rule, section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-113 section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities

unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

As explained in the proposal, this rule does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards, and no commentor suggested otherwise or suggested any application.

I. Environmental Justice

Pursuant to Executive Order 12898 (59 FR 7629, February 16, 1994), the Agency has considered environmental justice related issues with regard to the potential impacts of this action on the environmental and health conditions in low-income and minority communities. The Agency believes that today's rule provides equal public health protection to communities irrespective of their socio-economic condition and demographic make-up.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective April 5, 2000.

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements

40 CFR Part 144

Administrative practice and procedure, Hazardous waste, Indian-lands, Water supply.

40 CFR Part 145

Confidential business information, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water supply

40 CFR Part 146

Hazardous waste, Indians-lands, Reporting and recordkeeping requirements, Water supply.

Dated November 23, 1999

Carol M. Browner,
Administrator

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 9—AMENDED

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 136–136y, 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671, 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701, 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345 (d) and (e), 1361, E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973, 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 et seq., 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048

2. In § 9.1 the table is amended under the indicated heading by adding new entries in numerical order to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

| 40 CFR citation | OMB control No |
|---------------------------------------|----------------|
| Underground Injection Control Program | |
| 144 79–144 89 | 2040–0214 |
| 145 23 | 2040–0214 |

PART 144—UNDERGROUND INJECTION CONTROL PROGRAM

3. The authority citation for part 144 continues to read as follows:

Authority: Safe Drinking Water Act, 42 U.S.C. 300f et seq., Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.

4. Section 144.1 is amended by adding a new paragraph (f)(1)(vii),

revising paragraphs (g)(1) introductory text, (g)(1)(iii), and (g)(2)(v) to read as follows:

§ 144.1 Purpose and scope of part 144.

* * * * *

(f) * * *

(1) * * *

(vii) Subpart G of this part sets forth requirements for owners and operators of Class V injection wells.

* * * * *

(g) * * *

(1) *Specific inclusions.* The following wells are included among those types of injection activities which are covered by the UIC regulations. (This list is not intended to be exclusive but is for clarification only.)

* * * * *

(iii) Any well used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste. This includes the disposal of hazardous waste into what would otherwise be septic systems and cesspools, regardless of their capacity.

(2) * * *

(v) Any dug hole, drilled hole, or bored shaft which is not used for the subsurface emplacement of fluids.

* * * * *

5. Section 144.3 is amended by adding new definitions in alphabetical order for “Cesspool,” “Drywell,” “Improved sinkhole,” “Point of injection,” “Sanitary waste,” “Septic system,” and “Subsurface fluid distribution system,” and by revising the definitions of “Well” and “Well injection” to read as follows:

§ 144.3 Definitions.

* * * * *

Cesspool means a “drywell” that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

* * * * *

Drywell means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

* * * * *

Improved sinkhole means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface.

* * * * *

Point of injection means the last accessible sampling point prior to waste

fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box—the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself.

* * * * *

Sanitary waste means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

* * * * *

Septic system means a “well” that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

* * * * *

Subsurface fluid distribution system means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

* * * * *

Well means A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension, or, a dug hole whose depth is greater than the largest surface dimension, or, an improved sinkhole; or, a subsurface fluid distribution system.

Well injection means the subsurface emplacement of fluids through a well.

6. Section 144.6 is amended by adding a new paragraph (a)(3) and revising paragraph (e) to read as follows:

§ 144.6 Classification of wells.

(a) * * *

(3) Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within one quarter mile of the well bore.

* * * * *

(e) Class V Injection wells not included in Class I, II, III, or IV. Specific types of Class V injection wells are described in § 144.81

7 Section 144.23 is amended by adding a new paragraph (c) to read as follows:

§ 144.23 Class IV Wells

* * * * *

(c) Notwithstanding the requirements of paragraphs (a) and (b) of this section, injection wells used to inject contaminated ground water that has been treated and is being injected into the same formation from which it was drawn are authorized by rule for the life of the well if such subsurface emplacement of fluids is approved by EPA, or a State, pursuant to provisions for cleanup of releases under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601–9675, or pursuant to requirements and provisions under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901–6992k.

8. Section 144.24 is amended by revising paragraph (a) to read as follows:

§ 144.24 Class V wells.

(a) A Class V injection well is authorized by rule, subject to the conditions in § 144.84

* * * * *

9. Section 144.26 is amended by revising paragraph (b)(1)(iii)(B) and removing paragraph (e).

§ 144.26 Inventory Requirements.

* * * * *

- (b) * * *
- (1) * * *
- (iii) * * *

(B) Radioactive waste disposal wells that are not Class I wells (40 CFR 146.5 (e)(11))

* * * * *

10. Subpart G is added to read as follows:

Subpart G—Requirements for Owners and Operators of Class V Injection Wells

Sec

144.79 General

Definition of Class V Injection Wells

144.80 What is a Class V injection well?

144.81 Does this subpart apply to me?

Requirements for All Class V Injection Wells

144.82 What must I do to protect underground sources of drinking water?

144.83 Do I need to notify anyone about my Class V injection well?

144.84 Do I need to get a permit?

Additional Requirements for Class V Large-Capacity Cesspools and Motor Vehicle Waste Disposal Wells

144.85 Do these additional requirements apply to me?

144.86 What are the definitions I need to know?

144.87 How does the identification of ground water protection areas and other sensitive areas affect me?

144.88 What are the additional requirements?

144.89 How do I close my Class V injection well?

Subpart G—Requirements for Owners and Operators of Class V Injection Wells

§ 144.79 General.

This subpart tells you what requirements apply if you own or operate a Class V injection well. You may also be required to follow additional requirements listed in the rest of this part. Where they may apply, these other requirements are referenced rather than repeated. The requirements described in this subpart and elsewhere in this part are to protect underground sources of drinking water and are part of the Underground Injection Control (UIC) Program established under the Safe Drinking Water Act. This subpart is written in a special format to make it easier to understand the regulatory requirements. Like other EPA regulations, it establishes enforceable legal requirements.

Definition of Class V Injection Wells

§ 144.80 What is a Class V injection well?

As described in § 144.6, injection wells are classified as follows.

(a) *Class I* (1) Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within one-quarter mile of the well bore, an underground source of drinking water.

(2) Other industrial and municipal disposal wells which inject fluids beneath the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water;

(3) Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within one quarter mile of the well bore.

(b) *Class II*. Wells which inject fluids:

(1) Which are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.

(2) For enhanced recovery of oil or natural gas, and

(3) For storage of hydrocarbons which are liquid at standard temperature and pressure.

(c) *Class III*. Wells which inject fluids for extraction of minerals including:

(1) Mining of sulfur by the Frasch process;

(2) *In situ* production of uranium or other metals; this category includes only in situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V

(3) Solution mining of salts or potash.

(d) *Class IV* (1) Wells used by generators of hazardous waste or of radioactive waste, by owners and operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste into a formation which within one quarter (¼) mile of the well contains an underground source of drinking water.

(2) Wells used by generators of hazardous waste or of radioactive waste, by owners and operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous waste or radioactive waste above a formation which within one quarter (¼) mile of the well contains an underground source of drinking water

(3) Wells used by generators of hazardous waste or owners or operators of hazardous waste management facilities to dispose of hazardous waste, which cannot be classified under paragraph (a)(1) or (d)(1) and (2) of this section (e.g., wells used to dispose of hazardous waste into or above a formation which contains an aquifer which has been exempted pursuant to 40 CFR 146.04).

(e) *Class V*. Injection wells not included in Class I, II, III or IV. Typically, Class V wells are shallow wells used to place a variety of fluids directly below the land surface. However, if the fluids you place in the ground qualify as a hazardous waste under the Resource Conservation and Recovery Act (RCRA), your well is either a Class I or Class IV well, not a Class V well. Examples of Class V wells are described in § 144.81.

§ 144.81 Does this subpart apply to me?

This subpart applies to you if you own or operate a Class V well, for example

(1) Air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump,

(2) Large capacity cesspools including multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary waste and have the capacity to serve fewer than 20 persons a day.

(3) Cooling water return flow wells used to inject water previously used for cooling;

(4) Drainage wells used to drain surface fluids, primarily storm runoff, into a subsurface formation,

(5) Dry wells used for the injection of wastes into a subsurface formation;

(6) Recharge wells used to replenish the water in an aquifer;

(7) Salt water intrusion barrier wells used to inject water into a fresh aquifer to prevent the intrusion of salt water into the fresh water;

(8) Sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether what is injected is a radioactive waste or not.

(9) Septic system wells used to inject the waste or effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary waste and have the capacity to serve fewer than 20 persons a day.

(10) Subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(11) Injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electric power,

(12) Wells used for solution mining of conventional mines such as stopes leaching;

(13) Wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts,

(14) Injection wells used in experimental technologies.

(15) Injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

(16) Motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR part 142). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.

Requirements for All Class V Injection Wells

§ 144.82 What must I do to protect underground sources of drinking water?

If you own or operate any type of Class V well, the regulations below require that you cannot allow movement of fluid into USDWs that might cause endangerment, you must comply with other Federal UIC requirements in 40 CFR parts 144 through 147, and you must comply with any other measures required by your State or EPA Regional Office UIC Program to protect USDWs, and you must properly close your well when you are through using it. You also must submit basic information about your well, as described in § 144.83.

(a) *Prohibition of fluid movement.* (1) As described in § 144.12(a), your injection activity cannot allow the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of the primary drinking water standards under 40 CFR part 141, other health based standards, or may otherwise adversely affect the health of persons. This prohibition applies to your well construction, operation, maintenance, conversion, plugging, closure, or any other injection activity.

(2) If the Director of the UIC Program in your State or EPA Region learns that your injection activity may endanger USDWs, he or she may require you to close your well, require you to get a permit, or require other actions listed in § 144.12(c), (d), or (e).

(b) *Closure requirements.* You must close the well in a manner that complies with the above prohibition of fluid movement. Also, you must dispose or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to your well in accordance with all applicable Federal, State, and local regulations and requirements.

(c) *Other requirements in Parts 144 through 147.* Beyond this subpart, you are subject to other UIC Program requirements in 40 CFR parts 144 through 147. While most of the relevant requirements are repeated or referenced in this subpart for convenience, you need to read these other parts to understand the entire UIC Program.

(d) *Other State or EPA requirements.* 40 CFR parts 144 through 147 define minimum Federal UIC requirements. EPA Regional Offices administering the UIC Program have the flexibility to establish additional or more stringent requirements based on the authorities in parts 144 through 147, if believed to be necessary to protect USDWs. States can have their own authorities to establish additional or more stringent requirements if needed to protect USDWs. You must comply with these additional requirements, if any exist in your area. Contact the UIC Program Director in your State or EPA Region to learn more.

§ 144.83 Do I need to notify anyone about my Class V injection well?

Yes, you need to provide basic "inventory information" about your well to the UIC Director, if you haven't already. You also need to provide any additional information that your UIC Program Director requests in accordance with the provisions of the UIC regulations.

(a) *Inventory requirements.* Unless you know you have already satisfied the inventory requirements in § 144.26 that were in effect prior to the issuance of this Subpart G, you must give your UIC Program Director certain information about yourself and your injection operation.

Note: This information is requested on national form "Inventory of Injection Wells," OMB No. 2040-0042.

(1) The requirements differ depending on your well status and location, as described in the following table

| | | |
|--|--|--|
| If your well is . . . | And you're in one of these locations ("Primacy" States, where the State runs the Class V UIC Program): Alabama, Arkansas, Commonwealth of Northern Mariana Islands, Connecticut, Delaware, Florida, Georgia, Guam, Idaho, Illinois, Kansas, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Carolina, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, or Wyoming | Or you're in one of these locations ("Direct Implementation" or DI Programs, where EPA runs the Class V UIC Program): Alaska, American Samoa, Arizona, California, Colorado, Hawaii, Indiana, Iowa, Kentucky, Michigan, Minnesota, Montana, New York, Pennsylvania, South Dakota, Tennessee, Virginia, Virgin Islands, Washington, DC, or any Indian Country |
| (i) New (prior to construction of your well) | . . . then you must contact your State UIC Program to determine what you must submit and by when.. | . . . then you must submit the inventory information described in (a)(2) of this section prior to constructing your well |
| (ii) Existing (construction underway or completed) | . . . then you must contact your State UIC Program to determine what you must submit and by when.. | . . . then you must cease injection and submit the inventory information. You may resume injection 90 days after you submit the information unless the UIC Program Director notifies you that injection may not resume or may resume sooner |

(2) If your well is in a Primacy State or a DI Program State, here is the information you must submit:

(i) No matter what type of Class V well you own or operate, you must submit at least the following information for each Class V well: facility name and location; name and address of legal contact; ownership of facility; nature and type of injection well(s); and operating status of injection well(s).

(ii) *Additional information.* If you are in a Direct Implementation State and you own or operate a well listed below you must also provide the information listed in paragraph (a) (2) (iii) as follows:

(A) Sand or other backfill wells (40 CFR 144.81(8) and 146.5(e)(8) of this chapter),

(B) Geothermal energy recovery wells (40 CFR 144.81(11) and 146.5 (e)(12) of this chapter);

(C) Brine return flow wells (40 CFR 144.81(13) and 146.5 (e)(14) of this chapter);

(D) Wells used in experimental technology (40 CFR 144.81(14) and 146.5 (e)(15) of this chapter);

(E) Municipal and industrial disposal wells other than Class I; and

(F) Any other Class V wells at the discretion of the Regional Administrator.

(iii) You must provide a list of all wells owned or operated along with the following information for each well. (A single description of wells at a single facility with substantially the same characteristics is acceptable).

(A) Location of each well or project given by Township, Range, Section, and Quarter-Section, or by latitude and longitude to the nearest second,

according to the conventional practice in your State;

(B) Date of completion of each well,

(C) Identification and depth of the underground formation(s) into which each well is injecting;

(D) Total depth of each well;

(E) Construction narrative and schematic (both plan view and cross-sectional drawings);

(F) Nature of the injected fluids;

(G) Average and maximum injection pressure at the wellhead;

(H) Average and maximum injection rate; and

(I) Date of the last inspection.

(3) Regardless of whether your well is in a Primacy State or DI Program you are responsible for knowing about, understanding, and complying with these inventory requirements.

(b) *Information in response to requests.* If you are in one of the DI Programs listed in the table above, the UIC Program Director may require you to submit other information believed necessary to protect underground sources of drinking water.

(1) Such information requirements may include, but are not limited to:

(i) Perform ground water monitoring and periodically submit your monitoring results;

(ii) Analyze the fluids you inject and periodically submit the results of your analyses;

(iii) Describe the geologic layers through which and into which you are injecting, and

(iv) Conduct other analyses and submit other information, if needed to protect underground sources of drinking water.

(2) If the Director requires this other information, he or she will request it from you in writing, along with a brief

statement on why the information is required. This written notification also will tell you when to submit the information.

(3) You are prohibited from using your injection well if you fail to comply with the written request within the time frame specified. You can start injecting again only if you receive a permit.

§ 144.84 Do I need to get a permit?

No, unless you fall within an exception described below

(a) *General authorization by rule.* With certain exceptions listed in paragraph (b) of this section, your Class V injection activity is "authorized by rule," meaning you have to comply with all the requirements of this subpart and the rest of the UIC Program but you don't have to get an individual permit. Well authorization expires once you have properly closed your well, as described in § 144.82(b).

(b) *Circumstances in Which Permits or other Actions are Required.* If you fit into one of the categories listed below, your Class V well is no longer authorized by rule. This means that you have to either get a permit or close your injection well. You can find out by contacting the UIC Program Director in your State or EPA Region if this is the case. Subpart D of this Part tells you how to apply for a permit and describes other aspects of the permitting process. Subpart E of this Part outlines some of the requirements that apply to you if you get a permit.

(1) You fail to comply with the prohibition of fluid movement standard in § 144.12(a) and described in § 144.82(a) (in which case, you have to get a permit, close your well, and/or comply with other conditions

determined by the UIC Program Director in your State or EPA Region);

(2) You own or operate a Class V large-capacity cesspool (in which case, you must close your well as specified in the additional requirements below) or a Class V motor vehicle waste disposal well in a ground water protection area or sensitive ground water area (in which case, you must either close your well or get a permit as specified in the additional requirements in this subsection). New motor vehicle waste disposal wells and new cesspools are prohibited as of April 5, 2000;

(3) You are specifically required by the UIC Program Director in your State or EPA Region to get a permit (in which case, rule authorization expires upon the effective date of the permit issued, or you are prohibited from injecting into your well upon:

(i) Failure to submit a permit application in a timely manner as specified in a notice from the Director; or

(ii) Upon the effective date of permit denial);

(4) You have failed to submit inventory information to your UIC Program Director, as described in § 144.83(a) (in which case, you are prohibited from injecting into your well until you comply with the inventory requirements); or

(5) If you are in a DI State and you received a request from your UIC Program Director for additional information under § 144.83(b), and have failed to comply with the request in a timely manner (in which case, you are prohibited from injecting into your well until you get a permit).

Additional Requirements for Class V Large-Capacity Cesspools and Motor Vehicle Waste Disposal Wells

§ 144.85 Do these additional requirements apply to me?

(a) *Large-Capacity Cesspools.* The additional requirements apply to all new and existing large-capacity cesspools regardless of their location. If you are using a septic system for these type of wastes you are not subject to the additional requirements in this subpart.

(b) *Motor Vehicle Waste Disposal Wells Existing on April 5, 2000* If you have a Class V motor vehicle waste disposal well these requirements apply to you if your well is located in a ground water protection area or other sensitive ground water area that is identified by your State or EPA Region. If your State or EPA Region fails to identify ground water protection areas and/or other sensitive ground water areas these requirements apply to all Class V motor vehicle wells in the State.

(c) *New Motor Vehicle Waste Disposal Wells.* The additional requirements apply to all new motor vehicle waste disposal wells as of April 5, 2000.

§ 144.86 What are the definitions I need to know?

(a) *State Drinking Water Source Assessment and Protection Program* This is a new approach to protecting drinking water sources, specified in the 1996 Amendments to the Safe Drinking Water Act at Section 1453. States must prepare and submit for EPA approval a program that sets out how States will conduct local assessments, including: delineating the boundaries of areas providing source waters for public water systems; identifying significant potential sources of contaminants in such areas; and determining the susceptibility of public water systems in the delineated areas to the inventoried sources of contamination.

(b) *Complete Local Source Water Assessment for Ground Water Protection Areas.* When EPA has approved a State's Drinking Water Source Assessment and Protection Program, States will begin to conduct local assessments for each public water system in their State. For the purposes of this rule, local assessments for community water systems and non-transient non-community systems are complete when four requirements are met: First, a State must delineate the boundaries of the assessment area for community and non-transient non-community water systems. Second, the State must identify significant potential sources of contamination in these delineated areas. Third, the State must "determine the susceptibility of community and non-transient non-community water systems in the delineated area to such contaminants." Lastly, each State will develop its own plan for making the completed assessments available to the public.

(c) *Ground Water Protection Area* A ground water protection area is a geographic area near and/or surrounding community and non-transient non-community water systems that use ground water as a source of drinking water. These areas receive priority for the protection of drinking water supplies and States are required to delineate and assess these areas under section 1453 of the Safe Drinking Water Act. The additional requirements in § 144.88 apply to you if your Class V motor vehicle waste disposal well is in a ground water protection area for either a community water system or a non-transient non-community water system, in many States, these areas will be the same as Wellhead Protection Areas that

have been or will be delineated as defined in section 1428 of the SDWA

(d) *Community Water System* A community water system is a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

(e) *Non-transient Non-community Water System.* A public water system that is not a community water system and that regularly serves at least 25 of the same people over six months a year. These may include systems that provide water to schools, day care centers, government/military installations, manufacturers, hospitals or nursing homes, office buildings, and other facilities.

(f) *Delineation.* Once a State's Drinking Water Source Assessment and Protection Program is approved, the States will begin delineating their local assessment areas. Delineation is the first step in the assessment process in which the boundaries of ground water protection areas are identified.

(g) *Other Sensitive Ground Water Areas.* States may also identify other areas in the State in addition to ground water protection areas that are critical to protecting underground sources of drinking water from contamination. These other sensitive ground water areas may include areas such as areas overlying sole-source aquifers; highly productive aquifers supplying private wells; continuous and highly productive aquifers at points distant from public water supply wells; areas where water supply aquifers are recharged; karst aquifers that discharge to surface reservoirs serving as public water supplies; vulnerable or sensitive hydrogeologic settings, such as glacial outwash deposits, eolian sands, and fractured volcanic rock; and areas of special concern selected based on a combination of factors, such as hydrogeologic sensitivity, depth to ground water, significance as a drinking water source, and prevailing land-use practices

§ 144.87 How does the identification of ground water protection areas and other sensitive ground water areas affect me?

(a) You are subject to these new requirements if you own or operate an existing motor vehicle well and you are located in a ground water protection area or an other sensitive ground water area. If your State or EPA Region fails to identify these areas within the specified time frames these requirements apply to all existing motor vehicle waste disposal wells within your State.

(b) *Ground Water Protection Areas.* (1) For the purpose of this subpart, States are required to complete all local source water assessments for ground water protection areas by January 1, 2004. Once a local assessment for a ground water protection area is complete every existing motor vehicle waste disposal well owner in that ground water protection area has one year to close the well or receive a permit. If a State fails to complete all local assessments for ground water protection areas by January 1, 2004, the following may occur:

(i) The new requirements in this subpart will apply to all existing motor vehicle waste disposal wells in the State and owners and operators of motor vehicle waste disposal wells located outside of completed assessments for ground water protection areas must close their well or receive a permit by January 1, 2005.

(ii) EPA may grant a State an extension for up to one year from the January 1, 2004 deadline if the State is making reasonable progress in completing the source water assessments for ground water protection areas. States must apply for the extension by June 1, 2003. If a State fails to complete the assessments for the remaining ground water protection areas by the extended date the rule requirements will apply to all motor vehicle waste disposal wells in the State and owners and operators of motor vehicle waste disposal wells located outside of ground water protection areas with completed assessments must close their well or receive a permit by January 1, 2006.

(2) The UIC Program Director may extend the compliance deadline for specific motor vehicle waste disposal wells for up to one year if the most efficient compliance option for the well is connection to a sanitary sewer or installation of new treatment technology.

(c) *Other Sensitive Ground Water Areas.* States may also delineate other sensitive ground water areas by January 1, 2004. Existing motor vehicle waste disposal well owners and operators within other sensitive ground water areas have until January 1, 2007 to receive a permit or close the well. If a State or EPA Region fails to identify these additional sensitive ground water areas by January 1, 2004, the new requirements of this rule will apply to all motor vehicle waste disposal wells in the State effective January 1, 2007 unless they are subject to a different compliance date pursuant to paragraph

(b) of this section. Again, EPA may extend the January 1, 2004 deadline for up to one year for States to delineate other sensitive ground water areas if the State is making reasonable progress in identifying the sensitive areas. States must apply for this extension by June 1, 2003. If a State has been granted an extension, existing motor vehicle waste disposal well owners and operators within the sensitive ground water areas have until January 1, 2008 to close the well or receive a permit, unless they are subject to a different compliance date pursuant to paragraph (b) of this section. If a State has been granted an extension and fails to delineate sensitive areas by the extended date, the rule requirements will apply to all motor vehicle waste disposal wells in the State and owners and operators have until January 1, 2008 to close the well or receive a permit, unless they are subject to a different compliance date pursuant to paragraph (b) of this section.

(d) *How to Find Out if Your Well is in a Ground Water Protection Area or Sensitive Ground Water Area.* States are required to make their local source water assessments widely available to the public through a variety of methods after the assessments are complete. You can find out if your Class V well is in a ground water protection area by contacting the State agency responsible for the State Drinking Water Source Assessment and Protection Program in your area. You may call the Safe Drinking Water Hotline at 1-800-426-4791 to find out who to call in your State for this information. The State office responsible for implementing the Drinking Water Source Assessment and Protection Program makes the final and official determination of boundaries for ground water protection areas. Because States that choose to delineate other sensitive ground water areas are also required to make the information on these areas accessible to the public, they may do so in a manner similar to the process used by the States in publicizing the EPA approved Drinking Water Source Assessment and Protection Program. You can find out if your Class V well is in an other sensitive ground water area by contacting the State or Federal agency responsible for the Underground Injection Control Program. You may call the Safe Drinking Water Hotline at 1-800-426-4791 to find out who to call for information.

(e) *Changes in the Status of the EPA Approved State Drinking Water Source Assessment and Protection Program.* After January 1, 2004 your State may

assess a ground water protection area for ground water supplying a new community water system or a new non-transient non-community water system that includes your Class V injection well. Also, your State may officially re-delineate the boundaries of a previously delineated ground water protection area to include additional areas that includes your motor vehicle waste disposal well. This would make the additional regulations apply to you if your motor vehicle waste disposal well is in such an area. The additional regulations start applying to you one year after the State completes the local assessment for the ground water protection area for the new drinking water system or the new re-delineated area. The UIC Program Director responsible for your area may extend this deadline for up to one year if the most efficient compliance option for the well is connection to a sanitary sewer or installation of new treatment technology.

(f) *What Happens if My State Doesn't Designate Other Sensitive Ground Water Areas?* If your State or EPA Region elects not to delineate the additional sensitive ground water areas, the additional regulations apply to you regardless of the location of your well by January 1, 2007, or January 2008 if an extension has been granted as explained in paragraph (c) of this section, except for wells in ground water protection areas which are subject to different compliance deadlines explained in paragraph (b) of this section.

(h) *Application of Requirements Outside of Ground Water Protection Areas and Sensitive Ground Water Areas.* EPA expects and strongly encourages States to use existing authorities in the UIC program to take whatever measures are needed to ensure Class V wells are not endangering USDWs in any other areas outside of delineated ground water protection areas and sensitive ground water areas. Such measures could include, if believed to be necessary by a UIC Program Director, applying the additional requirements below to other areas and/or other types of Class V wells. Therefore, the Director may apply the additional requirements to you, even if you are not located in the areas listed in paragraph (a) of this section.

§ 144.88 What are the additional requirements?

The additional requirements are specified in the following tables

(a) TABLE 1.—ADDITIONAL REQUIREMENTS FOR LARGE-CAPACITY CESSPOOLS STATEWIDE

[See § 144.85 to determine if these additional requirements apply to you]

| Well Status | Requirement | Deadline |
|---|---|---|
| If your cesspool is. . . | Then you. . . | By. . . |
| (1) Existing (operational or under construction by April 5, 2000). | (i) Must close the well (ii) Must notify the UIC Program Director (both Primacy States and Direct Implementation States) of your intent to close the well.. Note: This information is requested on national form "Preclosure Notification for Closure of Injection Wells,". Are prohibited | April 5, 2005 At least 30 days prior to closure. |
| (2) New or converted (construction not started before April 5, 2000). | | April 5, 2000. |

(b) TABLE 2.—ADDITIONAL REQUIREMENTS FOR MOTOR VEHICLE WASTE DISPOSAL WELLS

[See § 144.85 to determine if these additional requirements apply to you]

| Well status | Requirement | Deadline |
|--|--|--|
| If your motor vehicle waste disposal well is | Then. . . | By. . . |
| (1) Existing (operational or under construction by April 5, 2000). | (i) If your well is in a ground water protection area, you must close the well or obtain a permit. | Within 1 year of the completion of your local source water assessment; your UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to one year if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology. |
| | (ii) If your well is in an other sensitive ground water area, you must close the well or obtain a permit. | By January 1, 2007; your UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to one year if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology |
| | (iii) If you plan to seek a waiver from the ban and apply for a permit, you must meet MCLs at the point of injection while your permit application is under review, if you choose to keep operating your well. | The date you submit your permit application. |
| | (iv) If you receive a permit, you must comply with all permit conditions, if you choose to keep operating your well, including requirements to meet MCLs and other health based standards at the point of injection, follow best management practices, and monitor your injectate and sludge quality | The date(s) specified in your permit. |
| | (v) If your well is in a State which has not completed all their local assessments by January 1, 2004 or by the extended date if your State has obtained an extension as described in 144.87, and you are outside an area with a completed assessment you must close the well or obtain a permit. | January 1, 2005 unless your State obtains an extension as described in 144.87 (b) in which case your deadline is January 1, 2006; your UIC Program Director may extend the closure deadline, but not the permit application deadline, for up to one year if the most efficient compliance option is connection to a sanitary sewer or installation of new treatment technology |
| | (vi) If your well is in a State that has not delineated other sensitive ground water areas by January 1, 2004 and you are outside of an area with a completed assessment you must close the well or obtain a permit regardless of your location. | January 1, 2007 unless your State obtains an extension as described in 144.87(c) in which case your deadline is January 2008 |

(B) TABLE 2.—ADDITIONAL REQUIREMENTS FOR MOTOR VEHICLE WASTE DISPOSAL WELLS—Continued

[See § 144.85 to determine if these additional requirements apply to you]

| Well status | Requirement | Deadline |
|--|---|-----------------------------------|
| If your motor vehicle waste disposal well is | Then. . . | By. . . |
| | (vi) If you plan to close your well, you must notify the UIC Program Director of your intent to close the well (this includes closing your well prior to conversion). Note: This information is requested on national form "Preclosure Notification for Closure of Injection Wells". | At least 30 days prior to closure |
| (2) New or converted (construction not started before April 5, 2000) | Are prohibited | April 5, 2000. |

§ 144.89 How do I close my Class V injection well?

The following describes the requirements for closing your Class V injection well.

(a) *Closure.* Prior to closing a Class V large-capacity cesspool or motor vehicle waste disposal well, you must plug or otherwise close the well in a manner that complies with the prohibition of fluid movement standard in § 144.12 and summarized in § 144.82(a). If the UIC Program Director in your State or EPA Region has any additional or more specific closure standards, you have to meet those standards too. You also must dispose or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to your well in accordance with all applicable Federal, State, and local regulations and requirements, as in § 144.82(b).

(2) Closure does not mean that you need to cease operations at your facility, only that you need to close your well. A number of alternatives are available for disposing of waste fluids. Examples of alternatives that may be available to motor vehicle stations include: recycling and reusing wastewater as much as possible; collecting and recycling petroleum-based fluids, coolants, and battery acids drained from vehicles; washing parts in a self-contained, recirculating solvent sink, with spent solvents being recovered and replaced by the supplier; using absorbents to clean up minor leaks and spills, and placing the used materials in approved waste containers and disposing of them properly; using a wet vacuum or mop to pick up accumulated rain or snow melt, and if allowed, connecting floor drains to a municipal sewer system or holding tank, and if allowed, disposing of the holding tank contents through a publicly owned treatment works. You should check with the publicly owned treatment works you

might use to see if they would accept your wastes. Alternatives that may be available to owners and operators of a large-capacity cesspool include: conversion to a septic system; connection to sewer; and installation of an on-site treatment unit.

(b) *Conversions.* In limited cases, the UIC Director may authorize the conversion (reclassification) of a motor vehicle waste disposal well to another type of Class V well. Motor vehicle wells may only be converted if: all motor vehicle fluids are segregated by physical barriers and are not allowed to enter the well; and, injection of motor vehicle waste is unlikely based on a facility's compliance history and records showing proper waste disposal. The use of a semi-permanent plug as the means to segregate waste is not sufficient to convert a motor vehicle waste disposal well to another type of Class V well.

PART 145—STATE UIC PROGRAM REQUIREMENTS

11. The authority citation for part 145 continues to read as follows:

Authority: Safe Drinking Water Act, 42 U.S.C. 300f *et seq*

Subpart B—[Amended]

12. Section 145.11 is amended by adding paragraph (a)(32) and by revising the first sentence of paragraph (b)(1) to read as follows:

§ 145.11 Requirements for permitting.

(a) * * *

(32) Section 144.88—(What are the additional requirements?),

* * * * *

(b)(1) States need not implement provisions identical to the provisions listed in paragraphs (a)(1) through (a)(32) of this section. * * *

* * * * *

Subpart C—[Amended]

13. Section 145.23, is revised by adding paragraph (f)(12) to read as follows:

§ 145.23 Program description.

* * * * *

(f) * * *

(12) *For Class V programs only* A description of and a schedule for the State's plan to identify and delineate other sensitive ground water areas. States should consider geologic and hydrogeologic settings, ground water flow and occurrence, topographic and geographic features, depth to ground water, significance as a drinking water source, prevailing land use practices and any other existing information relating to the susceptibility of ground water to contamination from Class V injection wells when developing their plan. Within the schedule for the plan, States must commit to completing all delineations of other sensitive ground water areas by no later than Jan. 1, 2004, making these delineation available to the public; implementing the Class V regulations, effective April 5, 2000, in these delineated areas by no later than January 1, 2007. Alternately, if a State chooses not to identify other sensitive ground water areas, the requirements for motor vehicle waste disposal wells would apply statewide by January 1, 2007.

PART 146—UNDERGROUND INJECTION CONTROL PROGRAM: CRITERIA AND STANDARDS

14 The authority citation for part 146 continues to read as follows

Authority: Safe Drinking Water Act, 42 U.S.C. 300f *et seq*, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq*

15. Section 146.3 is amended by adding the following new definitions in alphabetical order: "Cesspool," "Drywell," "Improved sinkhole," "Point

of injection," "Sanitary waste," "Septic system," and "Subsurface fluid distribution system," and by revising the definitions of "Well" and "Well injection" to read as follows:

§ 146.3 Definitions.

Cesspool means a "drywell" that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

Drywell means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

Improved sinkhole means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface.

Point of injection for Class V wells means the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box—the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself.

Sanitary waste means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities

provided the waste is not mixed with industrial waste.

Septic system means a "well" that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

Subsurface fluid distribution system means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

Well means: A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.

Well injection means the subsurface emplacement of fluids through a well.

16. Section 146.5 is amended by adding a new paragraph (a)(3) and revising the first sentence of paragraph (e) introductory text to read as follows:

§ 146.5 Classification of injection wells.

(a) * * *

(3) Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within one quarter mile of the well bore.

(e) *Class V*. Injection wells not included in Class I, II, III, or IV. Specific types of Class V injection wells are also described in 40 CFR 144.81. * * *

17. Section 146.10 is revised to read as follows:

§ 146.10 Plugging and abandoning Class I, II, III, IV, and V wells.

(a) Requirements for Class I, II and III wells. (1) Prior to abandoning Class I, II and III wells, the well shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water. The Director may allow Class III wells to use other plugging materials if the Director is satisfied that such materials will prevent movement

of fluids into or between underground sources of drinking water.

(2) Placement of the cement plugs shall be accomplished by one of the following:

- (i) The Balance method;
- (ii) The Dump Bailer method;
- (iii) The Two-Plug method; or
- (iv) An alternative method approved by the Director, which will reliably provide a comparable level of protection to underground sources of drinking water.

(3) The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Director, prior to the placement of the cement plug(s).

(4) The plugging and abandonment plan required in 40 CFR 144.51(o) and 144.52(a)(6) shall, in the case of a Class III project which underlies or is in an aquifer which has been exempted under § 146.04, also demonstrate adequate protection of USDWs. The Director shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to insure adequate protection of USDWs.

(b) Requirements for Class IV wells. Prior to abandoning a Class IV well, the owner or operator shall close the well in accordance with 40 CFR 144.23(b).

(c) Requirements for Class V wells. (1) Prior to abandoning a Class V well, the owner or operator shall close the well in a manner that prevents the movement of fluid containing any contaminant into an underground source of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may otherwise adversely affect the health of persons. Closure requirements for motor vehicle waste disposal wells and large-capacity cesspools are reiterated at § 144.89.

(2) The owner or operator shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements

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Appendix B

Fact Sheet to the Rule

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Appendix C

Frequently Asked Questions

(To be Added)

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Appendix D

Sample Permit Application Form

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United States Environmental Protection Agency
**Underground Injection Control
Permit Application**
(Collected under the authority of the Safe Drinking
Water Act, Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number

T/A C

U

Read Attached Instructions Before Starting
For Official Use Only

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|------------------------------|-----|--|---|-----|-------|---------|---|------|--------------|------|---|--------------------------------|--|--|--|--|--|--------------------------------------|--|--|--|--------------|--|--|--|--|-------|--|--|--|--|----------|--|--|--|--|
| Application approved mo day year | | | Date received mo day year | | | Permit Number | | | Well ID | | | FINDS Number | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| II. Owner Name and Address | | | | | | | | | | | | | | | III. Operator Name and Address | | | | | | | | | | | | | | | | | | | | | | | | |
| Owner Name | | | | | | | | | | Operator Name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Street Address | | | | | | | | | | Phone Number | | | | | Street Address | | | | | | | | | | Phone Number | | | | | | | | | | | | | | |
| City | | | | | | | | | | State | | | | | ZIP CODE | | | | | City | | | | | | | | | | State | | | | | ZIP CODE | | | | |
| IV. Commercial Facility | | | | | V. Ownership | | | | | VI. Legal Contact | | | | | VII. SIC Codes | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | <input type="checkbox"/> Private <input type="checkbox"/> Federal <input type="checkbox"/> Other | | | | | <input type="checkbox"/> Owner <input type="checkbox"/> Operator | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VIII. Well Status (Mark "x") | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> A. Operating | | | Date Started mo day year | | | <input type="checkbox"/> B. Modification/Conversion | | | | | | | | | | | | | | | <input type="checkbox"/> C. Proposed | | | | | | | | | | | | | | | | | | |
| IX. Type of Permit Requested (Mark "x" and specify if required) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> A. Individual | | | | | <input type="checkbox"/> B. Area | | | | | Number of Existing Wells | | | | | Number of Proposed Wells | | | | | Name(s) of field(s) or project(s) | | | | | | | | | | | | | | | | | | | |
| X. Class and Type of Well (see reverse) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. Classes(es) (enter codes(s)) | | | | | B. Type(s) (enter codes(s)) | | | | | C. If class is "other" or type is code 'x,' explain | | | | | | | | | | D. Number of wells per type (if area permit) | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| XI. Location of Well(s) or Approximate Center of Field or Project | | | | | | | | | | | | | | | | | | | | XII. Indian Lands (Mark 'x') | | | | | | | | | | | | | | | | | | | |
| Latitude | | | Longitude | | | Township and Range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deg | Min | Sec | Deg | Min | Sec | Sec | Twp | Range | 1/4 Sec | Feet From | Line | Feet From | Line | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | | | | | | | | | | | | | | | | | | | | |
| XIII. Attachments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Complete the following questions on a separate sheet(s) and number accordingly; see instructions) For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| XIV. Certification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| .. Name and Title (Type or Print) | | | | | | | | | | | | | | | | | | | | B. Phone No. (Area Code and No.) | | | | | | | | | | | | | | | | | | | |
| C. Signature | | | | | | | | | | | | | | | | | | | | D. Date Signed | | | | | | | | | | | | | | | | | | | |

Well Class and Type Codes

| | |
|----------------------|---|
| Class I | Wells used to inject waste below the deepest underground source of drinking water |
| Type "I" | Nonhazardous industrial disposal well |
| "M" | Nonhazardous municipal disposal well |
| "W" | Hazardous waste disposal well injecting below USDWs |
| "X" | Other Class I wells (not included in Type "I," "M," or "W") |
| Class II | Oil and gas production and storage related injection wells. |
| Type "D" | Produced fluid disposal well |
| "R" | Enhanced recovery well |
| "H" | Hydrocarbon storage well (excluding natural gas) |
| "X" | Other Class II wells (not included in Type "D," "R," or "H") |
| Class III | Special process injection wells. |
| Type "G" | Solution mining well |
| "S" | Sulfur mining well by Frasch process |
| "U" | Uranium mining well (excluding solution mining of conventional mines) |
| "X" | Other Class III wells (not included in Type "G," "S," or "U") |
| Other Classes | Wells not included in classes above. |
| | Class V wells which may be permitted under §144.12 |
| | Wells not currently classified as Class I, II, III, or V. |

Attachments to Permit Application

| | |
|----------------------|--|
| Class | Attachments |
| I new well | A, B, C, D, F, H — S, U |
| existing | A, B, C, D, F, H — U |
| II new well | A, B, C, E, G, H, M, Q, R; optional — I, J, K, O, P, U |
| existing | A, E, G, H, M, Q, R — U; optional — J, K, O, P, Q |
| III new well | A, B, C, D, F, H, I, J, K, M — S, U |
| existing | A, B, C, D, F, H, J, K, M — U |
| Other Classes | To be specified by the permitting authority |

PAPERWORK REDUCTION ACT NOTICE

Public reporting burden for this collection of information is estimated at an average of 255 hours for Class I wells, 16 hours for Class II wells, and 200 hours for Class III wells per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any aspect of this collection of information, including suggestions for reducing burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, and to the Office of Management and Budget, Paperwork Reduction Project, Washington, DC 20503.

This form must be completed by all owners or operators of Class I, II, and III Injection wells and others who may be directed to apply for permit by the Director.

- I. **EPA I.D. NUMBER** - Fill in your EPA Identification Number. If you do not have a number, leave blank.
- II. **OWNER NAME AND ADDRESS** - Name of well, well field or company and address.
- III. **OPERATOR NAME AND ADDRESS** - Name and address of operator of well or well field.
- IV. **COMMERCIAL FACILITY** - Mark the appropriate box to indicate the type of facility.
- V. **OWNERSHIP** - Mark the appropriate box to indicate the type of ownership.
- VI. **LEGAL CONTACT** - Mark the appropriate box.
- VII. **SIC CODES** - List at least one and no more than four Standard Industrial Classification (SIC) Codes that best describe the nature of the business in order of priority.
- VIII. **WELL STATUS** - Mark Box A if the well(s) were operating as injection wells on the effective date of the UIC Program for the State. Mark Box B if wells(s) existed on the effective date of the UIC Program for the State but were not utilized for injection. Box C should be marked if the application is for an underground injection project not constructed or not completed by the effective date of the UIC Program for the State.
- IX. **TYPE OF PERMIT** - Mark "Individual" or "Area" to indicate the type of permit desired. Note that area permits are at the discretion of the Director and that wells covered by an area permit must be at one site, under the control of one person and do not inject hazardous waste. If an area permit is requested the number of wells to be included in the permit must be specified and the wells described and identified by location. If the area has a commonly used name, such as the "Jay Field," submit the name in the space provided. In the case of a project or field which crosses State lines, it may be possible to consider an area permit if EPA has jurisdiction in both States. Each such case will be considered individually, if the owner/operator elects to seek an area permit.
- X. **CLASS AND TYPE OF WELL** - Enter in these two positions the Class and type of injection well for which a permit is requested. Use the most pertinent code selected from the list on the reverse side of the application. When selecting type X please explain in the space provided.
- XI. **LOCATION OF WELL** - Enter the latitude and longitude of the existing or proposed well expressed in degrees, minutes, and seconds or the location by township, and range, and section, as required by 40 CFR Part 146. If an area permit is being requested, give the latitude and longitude of the approximate center of the area.
- XII. **INDIAN LANDS** - Place an "X" in the box if any part of the facility is located on Indian lands.
- XIII. **ATTACHMENTS** - Note that information requirements vary depending on the injection well class and status. Attachments for Class I, II, III are described on pages 4 and 5 of this document and listed by Class on page 2. Place EPA ID number in the upper right hand corner of each page of the Attachments.
- IV. **CERTIFICATION** - All permit applications (except Class II) must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, and by a principal executive or ranking elected official for a public agency. For Class II, the person described above should sign, or a representative duly authorized in writing.

INSTRUCTIONS - Attachments

Attachments to be submitted with permit application for Class I, II, III and other wells.

- A. **AREA OF REVIEW METHODS** - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation). The area of review shall be a fixed radius of ¼ mile from the well unless the use of an equation is approved in advance by the Director.
- B. **MAPS OF WELL/AREA AND AREA OF REVIEW** - Submit a topographic map, extending one mile beyond the property boundaries, showing the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all intake and discharge structures and all hazardous waste treatment, storage, or disposal facilities. If the application is for an area permit, the map should show the distribution manifold (if applicable) applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show the following:

Class I

The number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, and other pertinent surface features, including residences and roads, and faults, if known or suspected. In addition, the map must identify those wells, springs, other surface water bodies, and drinking water wells located within one quarter mile of the facility property boundary. Only information of public record is required to be included in this map;

Class II

In addition to requirements for Class I, include pertinent information known to the applicant. This requirement does not apply to existing Class II wells;

Class III

In addition to requirements for Class I, include public water systems and pertinent information known to the applicant;

- C. **CORRECTIVE ACTION PLAN AND WELL DATA** - Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review, including those on the map required in B, which penetrate the proposed injection zone. Such data shall include the following:

Class I

A description of each well's types, construction, date drilled, location, depth, record or plugging and/or completion, and any additional information the Director may require. In the case of new injection wells, include the corrective action proposed to be taken by the applicant under 40 CFR 144.55.

Class II

In addition to requirement for Class I, in the case of Class II wells operating over the fracture pressure of the injection formation; all known wells within the area of review which penetrate formations affected by the increase in pressure. This requirement does not apply to existing Class II wells.

Class III

In addition to requirements for Class I, the corrective action proposed under 40 CFR 144.55 for all Class III wells.

- D. **MAPS AND CROSS SECTION OF USDWs** - Submit maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review (both vertical and lateral limits for Class I), their position relative to the injection formation and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed injection. (Does not apply to Class II wells)

underground sources of drinking water which may be affected by the injection.

- F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA** - Submit maps and cross sections detailing the geologic structure of the local area (including the lithology of injection and confining intervals) and generalized maps and cross sections illustrating the regional geologic setting. (Does not apply to Class II wells.)
- GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (Class II)** - For Class II wells, submit appropriate geological data on the injection zone and confining zones including lithologic description, geological name, thickness, depth and fracture pressure.
- H. OPERATING DATA** - Submit the following proposed operating data for each well (including all those to be covered by area permits): (1) average and maximum daily rate and volume of the fluids to be injected; (2) average and maximum injection pressure; (3) nature of annulus fluid; (4) for Class I well, source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids; (5) for Class II wells, source and analysis of the physical and chemical characteristics of the injection fluid; (6) for Class III wells, a qualitative analysis and ranges in concentrations of all constituents of injected fluids. If the information is proprietary, maximum concentrations only may be submitted, but all records must be retained.
- I. FORMATION TESTING PROGRAM** - Describe the proposed formation testing program. For Class I wells the program must be designed to obtain data on fluid pressure, temperature, fracture pressure, other physical, chemical, and radiological characteristics of the injection matrix and physical and chemical characteristics of the formation fluids.
- For Class II wells the testing program must be designed to obtain data on fluid pressure, estimated fracture pressure, physical and chemical characteristics of the injection zone. (Does not apply to existing Class II wells or projects.)
- For Class III wells the testing must be designed to obtain data on fluid pressure, fracture pressure, and physical and chemical characteristics of the formation fluids if the formation is naturally water bearing. Only fracture pressure is required if the program formation is not water bearing. (Does not apply to existing Class III wells or projects.)
- STIMULATION PROGRAM** - Outline any proposed stimulation program
- K. INJECTION PROCEDURES** - Describe the proposed injection procedures including pump, surge, tank, etc.
- L. CONSTRUCTION PROCEDURES** - Discuss the construction procedures (according to §146.12 for Class I, §146.22 for Class II, and §146.32 for Class III) to be utilized. This should include details of the casing and cementing program, logging procedures, deviation checks, and the drilling, testing and coring program, and proposed annulus fluid. (Request and submission of justifying data must be made to use an alternative to packer for Class I.)
- M. CONSTRUCTION DETAILS** - Submit schematic or other appropriate drawings of the surface and subsurface construction details of the well.
- N. CHANGES IN INJECTED FLUID** - Discuss expected changes in pressure, native fluid displacement, and direction of movement of injection fluid. (Class III wells only.)
- O. PLANS FOR WELL FAILURES** - Outline contingency plans (proposed plans, if any, for Class II) to cope with all shut-ins or wells failures, so as to prevent migration of fluids into any USDW.
- P. MONITORING PROGRAM** - Discuss the planned monitoring program. This should be thorough, including maps showing the number and location of monitoring wells as appropriate and discussion of monitoring devices, sampling frequency, and parameters measured. If a manifold monitoring program is utilized, pursuant to §146.23(b)(5), describe the program and compare it to individual well monitoring.
- Q. PLUGGING AND ABANDONMENT PLAN** - Submit a plan for plugging and abandonment of the well including: (1) describe the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; (2) describe the type, grade, and quantity of cement to be used; and (3) describe the method to be used to place plugs, including the method used to place the well in a state of static equilibrium prior to placement of the plugs. Also for a Class III well that underlies or is in an exempted aquifer, demonstrate adequate protection of USDWs. Submit this information on EPA Form 7520-14, Plugging and Abandonment Plan.

... **NECESSARY RESOURCES** - Submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug or abandon the well are available.

- S. **AQUIFER EXEMPTIONS** - If an aquifer exemption is requested, submit data necessary to demonstrate that the aquifer meets the following criteria: (1) does not serve as a source of drinking water; (2) cannot now and will not in the future serve as a source of drinking water; and (3) the TDS content of the ground water is more than 3,000 and less than 10,000 mg/l and is not reasonably expected to supply a public water system. Data to demonstrate that the aquifer is expected to be mineral or hydrocarbon production, such as general description of the mining zone, analysis of the amenability of the mining zone to the proposed method, and time table for proposed development must also be included. For additional information on aquifer exemptions, see 40 CFR Sections 144.7 and 146.04.
- T. **EXISTING EPA PERMITS** - List program and permit number of any existing EPA permits, for example, NPDES, PSD, RCRA, etc.
- U. **DESCRIPTION OF BUSINESS** - Give a brief description of the nature of the business.

Appendix E

Sample Pre-Closure Form

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CLASS V WELL PRE-CLOSURE NOTIFICATION FORM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF GROUND WATER AND DRINKING WATER

1. Name of facility: _____

Address of facility: _____

City/Town: _____ State: _____ Zip Code: _____

County: _____ Location: _____

2. Name of Owner/Operator: _____

Address of Owner/Operator: _____

City/Town: _____ State: _____ Zip Code: _____

Legal contact: _____ Phone number: _____

3. Type of well(s): _____ Number of well(s): _____

4. Well construction (check all that apply):

- | | | |
|--|--|--------------------------------------|
| <input type="checkbox"/> Drywell | <input type="checkbox"/> Septic tank | <input type="checkbox"/> Cesspool |
| <input type="checkbox"/> Improved sinkhole | <input type="checkbox"/> Drainfield/leachfield | <input type="checkbox"/> Other _____ |

5. Type of discharge: _____

6. Average flow (gallons/day): _____ 7. Year of well construction: _____

8. Type of well closure (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> Sample fluids/sediments | <input type="checkbox"/> Clean out well |
| <input type="checkbox"/> Appropriate disposal of remaining fluids/sediments | <input type="checkbox"/> Install permanent plug |
| <input type="checkbox"/> Remove well & any contaminated soil | <input type="checkbox"/> Conversion to other well type |
| <input type="checkbox"/> Other (Describe): _____ | |

9. Proposed date of well closure: _____

10. Name of preparer: _____ Date: _____

PAPERWORK REDUCTION ACT NOTICE

The public reporting and recordkeeping burden for this collection of information is estimated to average 1 5 hours per respondent. Burden means the total time effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information processing and maintaining information, and disclosing and providing information, adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information, search data sources, complete and review the collection of information, and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Information Division, U.S. Environmental Protection Agency (2137), 401 M St., S.W., Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.
EPA Form 7520-

INSTRUCTIONS

You must complete this form to notify the U.S. EPA that you intend to close a Underground Injection Control (UIC) Class V well at your facility. You may complete one form for more than one of the same type of Class V well at each facility. For example, if you will be closing two drywells that are of similar construction at your facility, you may use one form.

The numbers below correspond to the numbers on the form.

1. Supply the name and street address of the facility where the Class V well(s) is located. Include the City/Town, State (U.S. Postal Service abbreviation) and Zip Code. If there is no street address for the Class V well, provide the route number or locate the well(s) on a map. If available, for the "Location" provide the Latitude/Longitude of the well or the legal description of the facility.
2. Provide the name and mailing address of the owner of the facility or if the facility is operated by lease, the operator of the facility. Include the name and phone number of the legal contact for any questions regarding the information provided.
3. Indicate the type of Class V well that you intend to close. For example, motor vehicle waste disposal well or cesspool) Provide the number of wells of this well type at your location that will be closed.
 - Mark an "x" in the appropriate box to indicate the type of well construction. Mark all that apply to your situation. For example, for a septic tank that drains into a drywell, mark both the "septic tank" and "drywell" boxes. Please provide a generalized sketch or schematic of the well construction if available.
5. List or describe the types of fluids that enter the Class V well. If available, attach a copy of the chemical analysis results and/or the Material Safety Data Sheets for the fluids that enter the well.
6. Estimate the average daily flow into the well in gallons per day.
7. Provide the year that the Class V well was constructed. If unknown, provide the length of time that your business has been at this location and using this well.
 - Mark an "x" in the appropriate box(s) to indicate briefly how the well closure is expected to proceed. Mark all that apply to your situation. For example, all boxes except the "Remove well & any contaminated soil" and "Other" would be marked if: the connection of an automotive service bay drain leading to a septic tank and drainfield will be closed, but the septic system will continue to be used for washroom waste disposal only, and the fluids and sludge throughout the system will be removed for proper disposal, the system cleaned, a cement plug placed in the service bay drain and the pipe leading to the washroom connection, and the septic tank/drainfield remains open for septic use only. In this example, the motor vehicle waste disposal well is being converted to another well type (a large capacity septic system).
 - Self explanatory.
10. Self explanatory.

The purpose of this form is to serve as the means for the Class V well owner or operator's notice to the UIC Director of their intent to close the well in accordance with Title 40 of the Code of Federal Regulations (40 CFR) Section 144.12(a). According to 40 CFR §144.86, you must notify the UIC Program Director at least 30 days prior to well closure of your intent to close and abandon your well. Upon receipt of this form, if the Director determines that more specific information is required to be submitted to ensure that the well closure will be conducted in a manner that will protect underground sources of drinking water (as defined in 40 CFR §144.3), the Director can require the owner/operator to prepare, submit and comply with a closure plan acceptable to, and approved by the Director.

Please be advised that this form is intended to satisfy federal UIC requirements regarding pre-closure notification only. Other state, tribal or local requirements may also apply.

Appendix F

Sample Inventory Form

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INVENTORY OF INJECTION WELLS
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF GROUND WATER AND DRINKING WATER

(This information is collected under the authority of the Safe Drinking Water Act)

1. DATE PREPARED *(Year, Month, Day)*

| YR | | MO | | DY | |
|----|--|----|--|----|--|
| | | | | | |

2. FACILITY ID NUMBER

[illegible]

3. TRANSACTION TYPE (Please mark one of the following)

- ☐ Deletion ☐ First Time Entry
- ☐ Entry Changer ☐ Replacement

4. FACILITY NAME AND LOCATION:

PAPERWORK REDUCTION ACT NOTICE

The public reporting burden for this collection of information is estimated at about 1 hour per year, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Chief, Information Policy Branch, 2138, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460, and to the Office of Management and Budget, Paperwork Reduction Project, Washington, DC 20503.

A. NAME (last, first, & middle initial)

C. LATITUDE

| DEG | | MIN | | SEC | | | |
|-----|--|-----|--|-----|--|--|--|
| | | | | | | | |

E. TOWNSHIP/RANGE

| TOWNSHIP | | | RANGE | | | SECT | | 1/4 SECT | |
|----------|--|--|-------|--|--|------|--|----------|--|
| | | | | | | | | | |

B. STREET ADDRESS/ROUTE NUMBER

D. LONGITUDE

| DEG | | | MIN | | SEC | | | |
|-----|--|--|-----|--|-----|--|--|--|
| | | | | | | | | |

F. CITY/TOWN

G. STATE

H. ZIP CODE

[illegible]

**I. NUMERIC
COUNTY CODE**

| | | |
|--|--|--|
| | | |
|--|--|--|

J. INDIAN LAND
(mark "x")

- ☐
- Yes
- ☐
- No

5. LEGAL CONTACT:

A. TYPE (mark "x")

- ☐ OWNER ☐ OPERATOR

B. NAME (last, first, & middle initial)

C. PHONE
(area code
& number)

[illegible]

D. ORGANIZATION

E. STREET/P.O. BOX

I. OWNERSHIP (mark "x")

- ☐ PRIVATE ☐ PUBLIC ☐ SPECIFY OTHER
☐ STATE ☐ FEDERAL

6. WELL INFORMATION:

[illegible]

COMMENTS (Optional):

KEY:

DEG = Degree
MIN = Minute
SEC = Second

SECT = Section
1/4 SECT = Quarter Section

COMM = Commercial
NON-COMM = Non-Commercial

AC = Active
UC = Under Construction
TA = Temporarily Abandoned
PA = Permanently Abandoned and Approved by State
AN = Permanently Abandoned and not Approved by State

INSTRUCTIONS AND DEFINITIONS

SECTION 1. DATE PREPARED: Enter date in order of year, month, and day.

SECTION 2. FACILITY ID NUMBER: In the first two spaces, insert the appropriate U.S. Postal Service State Code. In the third space, insert one of the following one letter alphabetic identifiers:

- D - DUNS Number,
- G - GSA Number, or
- S - State Facility Number.

In the remaining spaces, insert the appropriate nine digit DUNS, GSA, or State Facility Number. For example, A Federal facility (GSA - 123456789) located in Virginia would be entered as: VAG123456789.

SECTION 3. TRANSACTION TYPE: Place an "x" in the applicable box. See below for further directions.

Deletion. Fill in the Facility ID Number.

First Time Entry. Fill in all the appropriate information.

Entry Change. Fill in the Facility ID Number and the information that has changed.

Replacement.

SECTION 4. FACILITY NAME AND LOCATION:

- A. Name. Fill in the facility's official or legal name.
- B. Street Address. Self Explanatory.
- C. Latitude. Enter the facility's latitude (all latitudes assume North except for American Samoa).
- D. Longitude. Enter the facility's longitude (all longitudes assume West except for Guam).
- E. Township/Range. Fill in the complete township and range. The first 3 spaces are numerical and the fourth is a letter (N,S,E,W) specifying a compass direction. A township is North or South of the baseline, and a range is East or West of the principal meridian (e.g., 132N, 343W).
- F. City/Town. Self Explanatory.
- G. State. Insert the U.S. Postal Service State abbreviation.
- H. Zip Code. Insert the five digit zip code plus any extension.

SECTION 4. FACILITY NAME & LOCATION (CONT'D):

- I. Numeric County Code. Insert the numeric county or the Federal Information Processing Standards Publication (Pub 6-1) June 15, 1970, U.S. Department of Commerce, National Bureau of Standards. For Alaska, use the Census Division Code developed by the U.S. Census Bureau.
- J. Indian Land. Mark an "x" in the appropriate box (Yes or No) to indicate if the facility is located on Indian land.

SECTION 5. LEGAL CONTACT:

- A. Type. Mark an "x" in the appropriate box to indicate the type of legal contact (Owner or Operator). For wells operated by lease, the operator is the legal contact.
- B. Name. Self Explanatory.
- C. Phone. Self Explanatory.
- D. Organization. If the legal contact is an individual, give the name of the business organization to expedite mail distribution.
- E. Street/P.O. Box. Self Explanatory.
- F. City/Town. Self Explanatory.
- G. State. Insert the U.S. Postal Service State abbreviation.
- H. Zip Code. Insert the five digit zip code plus any extension.
- I. Ownership. Place an "x" in the appropriate box to indicate ownership status.

SECTION 6. WELL INFORMATION:

- A. Class and Type. Fill in the Class and Type of injection wells located at the listed facility. Use the most pertinent code (specified below) to accurately describe each type of injection well. For example, 2R for a Class II Enhanced Recovery Well, or 3M for a Class III Solution Mining Well, etc.
- B. Number of Commercial and Non-Commercial Wells. Enter the total number of commercial and non-commercial wells for each Class/Type, as applicable.
- C. Total Number of Wells. Enter the total number of injection wells for each specified Class/Type.
- D. Well Operation Status. Enter the number of wells for each Class/Type under each operation status (see key on other side).

INJECTION WELL CLASS AND TYPE CODES

CLASS I Industrial, Municipal, and Radioactive Waste Disposal Wells used to inject waste below the lowermost Underground Source of Drinking Water (USDW).

- TYPE II** Non-Hazardous Industrial Disposal Well.
- 1M** Non-Hazardous Municipal Disposal Well.
- 1H** Hazardous Waste Disposal Well injecting below the lowermost USDW.
- 1R** Radioactive Waste Disposal Well.
- 1X** Other Class I Wells.

CLASS II Oil and Gas Production and Storage Related Injection Wells.

- TYPE 2A** Annular Disposal Well.
- 2D** Produced Fluid Disposal Well.
- 2H** Hydrocarbon Storage Well.
- 2R** Enhanced Recovery Well.
- 2X** Other Class II Wells.

CLASS III Special Process Injection Wells.

- TYPE 3G** *In Situ* Gassification Well.
- 3M** Solution Mining Well.

CLASS III (CONT'D)

- TYPE 3S** Sulfur Mining Well by Frasch Process
- 3T** Geothermal Well.
- 3U** Uranium Mining Well.
- 3X** Other Class III Wells.

CLASS IV Wells that inject hazardous waste into/above USDWs

- TYPE 4H** Hazardous Facility Injection Well.
- 4R** Remediation Well at RCRA or CERCLA site.

CLASS V Any Underground Injection Well not included in Classes I through IV.

- TYPE 5A** Industrial Well.
- 5B** Beneficial Use Well.
- 5C** Fluid Return Well.
- 5D** Sewage Treatment Effluent Well.
- 5E** Cesspools (non-domestic).
- 5F** Septic Systems (non-domestic).
- 5G** Experimental Technology Well.
- 5H** Drainage Well.
- 5I** Mine Backfill Well.
- 5J** Waste Discharge Well.

Appendix G

Guidance on the Delineation of Other Sensitive Ground Water Areas

(To be Added)

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Appendix H

Guidance on Determining the Status of Storm Water Drainage Wells Located at Motor Vehicle Service Facilities

(To be Added)

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Appendix I

Guidance on the Conversion of Motor Vehicle Waste Disposal Wells to Other Class V Wells

(To be Added)

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Appendix J

Training Presentation Materials for the Rule

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Appendix K

National Primary Drinking Water Standards

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National Primary Drinking Water Standards

Key

AL=Action Level

MCL=Maximum Contaminant Level

MCLG=Maximum Contaminant Level Goal

MFL=million fibers per liter

mrem/year=millirems per year (a measure of radiation absorbed by the body)

NTU=Nephelometric Turbidity Units

pCi/l=picocuries per liter (a measure of radioactivity)

ppm=parts per million, or milligrams per liter (mg/l)

ppb=parts per billion, or micrograms per liter (μg/l)

ppt=parts per trillion, or nanograms per liter

ppq=parts per quadrillion, or picograms per liter

TT=Treatment Technique

| National Primary Drinking Water Standards | | |
|---|---|------|
| Contaminant (units) | MCL | MCLG |
| Microbiological Contaminants | | |
| 1. Total Coliform Bacteria | presence of coliform bacteria in ≥5% of monthly samples | 0 |
| 2. Fecal coliform and <i>E. coli</i> | a routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive | 0 |
| 3 Turbidity | TT | n/a |
| Radioactive Contaminants | | |
| 4. Beta/photon emitters (mrem/yr) | 4 | 0 |
| 5. Alpha emitters (pCi/l) | 15 | 0 |
| 6 Combined radium (pCi/l) | 5 | 0 |
| Inorganic Contaminants | | |
| 7. Antimony (ppb) | 6 | 6 |
| 8. Arsenic (ppb) | 50 | n/a |
| 9. Asbestos (MFL) | 7 | 7 |
| 10. Barium (ppm) | 2 | 2 |
| 11. Beryllium (ppb) | 4 | 4 |
| 12 Cadmium (ppb) | 5 | 5 |
| 13. Chromium (ppb) | 100 | 100 |
| 14. Copper (ppm) | AL=1.3 | 1.3 |
| 15. Cyanide (ppb) | 200 | 200 |
| 16. Fluoride (ppm) | 4 | 4 |
| 17 Lead (ppb) | AL=15 | 0 |

| National Primary Drinking Water Standards | | |
|---|------------|-------------|
| Contaminant (units) | MCL | MCLG |
| 18. Mercury [inorganic] (ppb) | 2 | 2 |
| 19. Nitrate [as Nitrogen] (ppm) | 10 | 10 |
| 20. Nitrite [as Nitrogen] (ppm) | 1 | 1 |
| 21. Selenium (ppb) | 50 | 50 |
| 22. Thallium (ppb) | 2 | 0.5 |
| Synthetic Organic Contaminants including Pesticides and Herbicides | | |
| 23. 2,4-D (ppb) | 70 | 70 |
| 24. 2,4,5-TP [Silvex](ppb) | 50 | 50 |
| 25. Acrylamide | TT | 0 |
| 26. Alachlor (ppb) | 2 | 0 |
| 27. Atrazine (ppb) | 3 | 3 |
| 28. Benzo(a)pyrene [PAH] (nanograms/l) | 200 | 0 |
| 29. Carbofuran (ppb) | 40 | 40 |
| 30. Chlordane (ppb) | 2 | 0 |
| 31. Dalapon (ppb) | 200 | 200 |
| 32. Di(2-ethylhexyl) adipate (ppb) | 400 | 400 |
| 33. Di(2-ethylhexyl) phthalate (ppb) | 6 | 0 |
| 34. Dibromochloropropane (DBCP) (ppt) | 200 | 0 |
| 35. Dinoseb (ppb) | 7 | 7 |
| 36. Diquat (ppb) | 20 | 20 |
| 37. Dioxin [2,3,7,8-TCDD] (ppq) | 30 | 0 |
| 38. Endothall (ppb) | 100 | 100 |
| 39. Endrin (ppb) | 2 | 2 |
| 40. Epichlorohydrin | TT | 0 |
| 41. Ethylene dibromide (ppt) | 50 | 0 |
| 42. Glyphosate (ppb) | 700 | 700 |
| 43. Heptachlor (ppt) | 400 | 0 |
| 44. Heptachlor epoxide (ppt) | 200 | 0 |
| 45. Hexachlorobenzene (ppb) | 1 | 0 |
| 46. Hexachlorocyclopentadiene (ppb) | 50 | 50 |
| 47. Lindane (ppt) | 200 | 200 |

| National Primary Drinking Water Standards | | |
|--|------------|-------------|
| Contaminant (units) | MCL | MCLG |
| 48. Methoxychlor (ppb) | 40 | 40 |
| 49. Oxamyl [Vydate](ppb) | 200 | 200 |
| 50. PCBs [Polychlorinated biphenyls] (ppt) | 500 | 0 |
| 51. Pentachlorophenol (ppb) | 1 | 0 |
| 52. Picloram (ppb) | 500 | 500 |
| 53. Simazine (ppb) | 4 | 4 |
| 54. Toxaphene (ppb) | 3 | 0 |
| Volatile Organic Contaminants | | |
| 55. Benzene (ppb) | 5 | 0 |
| 56. Carbon tetrachloride (ppb) | 5 | 0 |
| 57. Chlorobenzene (ppb) | 100 | 100 |
| 58. o-Dichlorobenzene (ppb) | 600 | 600 |
| 59. p-Dichlorobenzene (ppb) | 75 | 75 |
| 60. 1,2-Dichloroethane (ppb) | 5 | 0 |
| 61. 1,1-Dichloroethylene (ppb) | 7 | 7 |
| 62. cis-1,2-Dichloroethylene (ppb) | 70 | 70 |
| 63. trans-1,2-Dichloroethylene (ppb) | 100 | 100 |
| 64. Dichloromethane (ppb) | 5 | 0 |
| 65. 1,2-Dichloropropane (ppb) | 5 | 0 |
| 66. Ethylbenzene (ppb) | 700 | 700 |
| 67. Styrene (ppb) | 100 | 100 |
| 68. Tetrachloroethylene (ppb) | 5 | 0 |
| 69. 1,2,4-Trichlorobenzene (ppb) | 70 | 70 |
| 70. 1,1,1-Trichloroethane (ppb) | 200 | 200 |
| 71. 1,1,2-Trichloroethane (ppb) | 5 | 3 |
| 72. Trichloroethylene (ppb) | 5 | 0 |
| 73. THMs [Total trihalomethanes](ppb) | 100 | n/a |
| 74. Toluene (ppm) | 1 | 1 |
| 75. Vinyl Chloride (ppb) | 2 | 0 |
| 76. Xylenes (ppm) | 10 | 10 |

Appendix L

***Handling Water Discharges From Automotive Service Facilities Located at Petroleum
Marketing Operations by the American Petroleum Institute***

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Handling Water Discharges From Automotive Service Facilities Located at Petroleum Marketing Operations

**API RECOMMENDED PRACTICE 1633
FIRST EDITION, JANUARY 1992**

**American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005**



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FOREWORD

In some automotive service facilities, bay drains used to dispose of wash or other waste water are connected to drywells, cesspools or septic systems rather than to a sanitary sewer that leads to a waste treatment facility. It is possible for these waste waters to become contaminated with oil, grease, or other fluids associated with servicing motor vehicles.

Recent federal and state statutes and regulations have put the increasing national concern about protecting the environment into the form of binding legal limitations on the disposal of these fluids.

The purpose of this recommended practice is to help owners and operators of petroleum marketing operations respond to these developments by closing floor drains, drywells, cesspools and septic systems that are subject to a risk of contamination. It also describes procedures for cleaning bay floors when a floor drain cannot be reconnected to a sanitary sewer and, in consequence, is permanently closed.

At the time this recommended practice was written, EPA and state policies toward these drains were undergoing continuing review. The appropriate government agencies should be consulted about applicable regulations and policies.

API recommended practices may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this recommended practice and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use, or for the violation of any federal, state, or municipal regulation with which this recommended practice may conflict.

Suggested revisions are invited and should be submitted to the director of Marketing, American Petroleum Institute, 1220 L Street, N.W., Washington D.C. 20005.

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[40 C.F.R. § 144.1(g)(1)(ii).] EPA also classifies as injection wells septic systems used by multiple dwellings and communities, and septic systems used by non-residences to dispose of any wastes other than sanitary wastes. [40 C.F.R. § 144.1(g)(1)(iv); 144.1(g)(2)(iii).]

2.1.2 GENERAL CLASSES OF INJECTION WELLS

2.1.2.1 EPA divides injection wells into five classes [40 C.F.R. § 144.6]:

- a. Class I wells are used to inject hazardous waste, industrial waste, or municipal waste beneath the lowermost formation containing, within one-quarter mile of the well bore, an underground source of drinking water (USDW).
- b. Class II wells are used to inject fluids associated with production of oil and natural gas or fluids used for enhanced hydrocarbon recovery and for storage of hydrocarbons which are liquid at standard temperature and pressure.
- c. Class III wells are used to inject fluids for the extraction of minerals.
- d. Class IV wells are used to dispose of hazardous wastes or radioactive waste into or above a USDW. (These wells have been banned since May 1985.)
- e. Class V includes all injection wells not included in the other four classes.

2.1.2.2 Automotive service facilities are affected by regulations governing injection wells in Classes IV and V.

2.1.2.2.1 Class V Injection Wells

Class V wells include drywells or septic systems used for service bay wastewater, roof and driveway stormwater runoff, and other uses. The term does *not* include holes not used for emplacement of fluids (for example, submerged turbine pump pits). [40 C.F.R. § 144.1(g)(2)(v).]

2.1.2.2.2 Class IV Injection Wells

2.1.2.2.2.1 Class IV wells are banned, except under limited circumstances not often relevant to automotive service facilities. [See RCRA § 3020.] Furthermore, any discharge of hazardous waste into a well that is normally classified as Class V converts that well into a forbidden Class IV well. Consequently, such discharges must be avoided.

2.1.2.2.2.2 EPA's definition of hazardous waste under the recently-revised toxicity characteristic rule (see 2.2.2.2.2.1) is likely to cause floor drain discharges that come into contact with fluids generated by automotive service operations to be classified as characteristically hazardous waste. As a result, a drywell receiving such

discharges would be a Class IV well. Also, septic systems used by waste generators to dispose of hazardous waste are classified as Class IV wells. [40 C.F.R. § 144.1(g)(1)(iii), 144.6(d).]

2.1.3 REQUIREMENTS GOVERNING CLASS V INJECTION WELLS

2.1.3.1 Permits

Class V wells are subject to permit by rule. This means that the owner or operator need not obtain an individual permit; EPA has granted blanket permission for the operation of all such wells. [40 C.F.R. § 144.24.] The permit by rule is valid only as long as the owner or operator complies with the requirement imposed by the Agency that the owner or operator submit inventory information about the well (see 2.1.3.2). [40 C.F.R. § 144.26.] Also, state governments or EPA itself may require an owner to obtain an individual permit under some circumstances. [40 C.F.R. § 144.25.]

2.1.3.2 Inventory Information

2.1.3.2.1 The owner or operator of a Class V well should have submitted inventory information to the state or federal government within one year after approval of the state program or the effective date of the UIC program in the state. [40 C.F.R. § 144.26(a); 144.26(d); 146.52, May 11, 1984.] This requirement now affects all states. When the UIC program was approved in a state, the director of the program was required to notify owners and operators of their duty to submit inventory information. EPA's regulations state that "the method of notification selected by the Director must assure that the owners or operators will be made aware of the inventory requirement." [40 C.F.R. § 144.26(c).]

2.1.3.2.2 Submission of inventory information in timely fashion is a condition of the authority to operate a Class V well without an individual permit. [40 C.F.R. § 144.26.] Any well owner or operator who has not submitted the inventory information should contact his or her own attorney for advice.

2.1.3.4 Injection of Fluids into Class V Wells

2.1.3.4.1 The SDWA, as implemented by EPA regulations, forbids the injection into a Class V well of any fluid containing a contaminant if doing so might endanger drinking water sources. These sources are endangered if:

- a. The injection might result in the presence of the contaminant in underground water that supplies or might reasonably be expected to supply a public water system.

b. The presence of the contaminant might cause a public water system to fail to comply with a national drinking water standard, or might in some other way adversely affect the health of persons. [SDWA § 1421(d)(2); 40 C.F.R. § 144.12.]

A *public water system* is one that has at least 15 service connections or that supplies an average of 25 individuals with water each day for at least 60 days of the year. [SDWA § 1401(4); 40 C.F.R. § 141.2.]

2.2 Resource Conservation and Recovery Act (RCRA)

2.2.1 PROVISIONS OF RCRA MOST RELEVANT TO THIS RECOMMENDED PRACTICE

2.2.1.1 RCRA governs the disposal of both hazardous and non-hazardous wastes. At present, stringent federal requirements govern wastes defined as hazardous. In addition, EPA has authorized many states to operate their RCRA programs, and any state possessing such authority may well have requirements more stringent than the minimums imposed by the federal statute.

2.2.1.2 RCRA requirements are important to this recommended practice for the following reasons:

- a. Automotive service facilities must be aware of the definition of hazardous waste so that they avoid illegal discharges.
- b. The definition of hazardous waste and the requirements applicable to its management may have a significant impact on facility operations.
- c. RCRA requirements may affect the practices used to close and clean out some existing drains and drywells.
- d. A special provision of RCRA excludes from its coverage hazardous wastes that are sent to POTWs through sewers carrying domestic sewage. [40 C.F.R. § 261.4(a)(1).] This provision is discussed in 2.3.1.1.

2.2.2 DEFINITION OF HAZARDOUS WASTE

2.2.2.1 The definition of *hazardous waste* under RCRA is a legally complex issue. The brief discussion in this document will familiarize the reader with some of the key concepts, but owners and operators should consult with their attorneys regarding the status of any particular wastes with which they are concerned.

2.2.2.2 Two Categories of Hazardous Waste

EPA recognizes two basic classifications of hazardous waste:

- a. Listed wastes
- b. Characteristic wastes

2.2.2.2.1 Listed Wastes

2.2.2.2.1.1 Listed wastes include all wastes of a specific type or from specific sources that EPA has listed in 40 C.F.R. § 261.31-.32. In addition, a number of common commercial chemicals are classified as listed hazardous waste if they are discarded or intended to be discarded by application to the land in lieu of their original intended use (or when contained in products applied to the land in lieu of their original intended use). These chemicals are listed in 40 C.F.R. § 261.33. EPA rules also prescribe that a mixture of a listed waste and another waste, such as waste water, is also a listed waste. [40 C.F.R. § 261.3 (a)(2)(iv).] The rules also provide that a waste generated by or derived from treatment, storage, or disposal for a listed hazardous waste is also a hazardous waste. [40 C.F.R. § 261.3 (c)(2).] They also state that a combination of a listed waste and some other substance, such as soil or a shop rag, must be treated as hazardous waste (the "contained in" principle).

2.2.2.2.1.2 For automotive service facilities, spent solvents are the most common category of listed wastes. Wastes consisting of spent solvents that are on EPA's list must be handled and disposed of in compliance with the rules governing hazardous waste. The facility owner and operator also should be aware that under some circumstances EPA requires that rags, floor-sweeping compound, or other debris contaminated with spent solvent be treated as if it were hazardous waste. The owners or operators should consult their own attorney for specific advice on this point.

2.2.2.2.2 Characteristic Wastes

2.2.2.2.2.1 Characteristic wastes include all wastes exhibiting one of the characteristics of ignitability, reactivity, corrosivity, or toxicity, as defined in tests specified by EPA. [40 C.F.R. § 261.20-.24; as corrected (for TC) at 55 *Fed. Reg.* 26986 (June 29, 1990).]

2.2.2.2.2.2 For automotive service facilities, the characteristics that commonly must be considered are toxicity and ignitability. Obviously, wastes from the use of petroleum products sometimes are ignitable and may meet the criteria for ignitable hazardous wastes. They also may fail the test for the characteristic of toxicity because of the presence of metals or of benzene. If either of these conditions exists, it is important that such substances be handled as hazardous wastes.

2.2.2.2.2.3 Treatment of characteristically hazardous waste differs from the treatment of listed hazardous waste in one important respect. As noted above, under EPA rules, if a *listed* hazardous waste is mixed with another waste or is combined with a substance such as rags, sweeping compound, soil or other debris, the combina-

tion must automatically be treated as hazardous waste. In contrast, if a *characteristically* hazardous waste is combined with a waste or with one of the substances described above, the combination need *not* be treated as hazardous waste unless the combination exhibits a characteristic or unless the mixture contains a listed hazardous waste. However, EPA does not permit a generator of characteristically hazardous waste to dilute the waste deliberately to render it non-hazardous.

2.2.3 SMALL QUANTITY GENERATORS (SQGs)

2.2.3.1 Generators of less than 1000 kilograms (2200 pounds) per month of hazardous waste are not subject to full RCRA requirements. Such generators are divided into two categories: Those generating less than 100 kg (220 lbs) of hazardous waste in a month and accumulating no more than 1000 kg (2200 lbs) at any one time (or generating less than 1 kg (2.2 lbs) per month of acutely (that is, waste on a special EPA list [40 C.F.R. § 261.5(e)]) hazardous waste and accumulating no more than 1 kg (2.2 lbs) at any one time) and those generating 100 to 1000 kg (220 to 2200 lbs) of hazardous waste in a month. Many marketing facilities are in one of these categories.

2.2.3.2 These two classes of small generators are treated as follows.

2.2.3.2.1 Generators of less than 100 kg/month are conditionally exempt from most RCRA requirements. [40 C.F.R. § 261.5(a).] The conditions are that the generator must ensure that waste is managed by a properly-licensed treatment or disposal facility, and otherwise handled as specified by EPA. [40 C.F.R. § 261.5(f)&(g).] The same provisions govern persons who generate less than 1 kg (2.2 lbs) of acutely hazardous waste per month, and also accumulate no more than 1 kg (2.2 lbs) at any one time [40 C.F.R. § 261.5(e)].

2.2.3.2.2 Generators of 100 to 1000 kg (220 to 2200 lbs) per month are subject to most RCRA requirements. They must obtain EPA identification numbers, use manifests, use only licensed transporters and disposal facilities, and follow DOT shipping requirements. These generators are, however, subject to somewhat relaxed storage requirements as long as they do not accumulate more than 6000 kg (13,200 lbs) of hazardous wastes for more than 180 days (or 270 days if the waste must be shipped more than 200 miles). [40 C.F.R. § 262.34(d)-(f)]

2.3 Clean Water Act (CWA)

2.3.1 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

2.3.1.1 RCRA contains an important exception to its definition of hazardous wastes. Wastes that are sent to

POTWs through sewers carrying domestic sewage are not covered by RCRA. [40 C.F.R. § 261.4(a)(1).]

2.3.1.2 The CWA (sections 307(b) and 402(b)(8)) permits POTWs to require industrial generators of wastes to pretreat hazardous wastes before discharging them into the sewer. EPA has set minimum standards for this pretreatment. [40 C.F.R. § 403, as amended, 55 *Fed. Reg.* 30128-31 (July 24, 1990).]

2.3.1.3 A recent EPA regulation [EPA, Final Rule on General Pretreatment and National Pollutant Discharge Elimination System (NPDES) Regulations, 55 *Fed. Reg.* 30082 (July 24, 1990)] under the Clean Water Act contains two important provisions affecting automotive service facilities:

2.3.1.3.1 A general prohibition on discharge of petroleum and other oils in amounts that will interfere with or pass through the POTW. POTWs are to continue to work on developing exact limits to implement this requirement. [55 *Fed. Reg.* at 30091-92, 30129.]

2.3.1.3.2 A requirement that an *industrial user* (a category that includes automotive service facilities) notify the POTW, the state, and the EPA of the discharge to POTWs of substances that would be classified as hazardous wastes if they were disposed of in some other way. [55 *Fed. Reg.* at 30099-105, 30131; 40 C.F.R. § 403.12(p).] The user must submit this notification only once as long as the nature of its discharges remains constant from month to month. If there is a substantial change, the POTW must be notified in advance. [40 C.F.R. § 403.12(j).]

2.3.2 DISCHARGES OF STORM WATER FROM INDUSTRIAL ACTIVITIES

2.3.2.1 A recent EPA regulation requires permits for storm water discharges associated with industrial activity. [EPA, Final Rule on NPDES Permit Application Regulations for Storm Water Discharges, 55 *Fed. Reg.* 47990 (Nov. 16, 1990).] For the most part, *industrial activity* includes only activities classified by the government as Manufacturing [Standard Industrial Classification (SIC) Codes 20-39] or as Extraction and Mining [SIC Codes 10-14]. [55 *Fed. Reg.* at 48065-66.]

2.3.2.2 Some facilities associated with petroleum marketing operations are subject to the Storm Water Rule. In addition to its general coverage of Manufacturing and Extraction and Mining, the rule covers such transportation facilities as railroads, truck terminals, buses, barges, and airports [SIC Codes 40-45], and Petroleum Bulk

Stations and Terminals [SIC Code 5171], to the extent that these facilities have "vehicle maintenance shops, equipment cleaning operations, or airport deicing operations." [55 *Fed. Reg.* at 48013/3-14/1, 48066/1.] The portions of any facility involved in "vehicle maintenance" include those devoted to vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication.

2.3.2.3 The storm water rule does *not* now apply to facilities encompassed by other SIC Codes relevant to petroleum marketing operations, such as:

- a. 46 (Pipelines, Except Natural Gas).
- b. 492 (Gas Production and Distribution).
- c. 5172 (Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals).
- d. 55 (Automobile Dealers and Gasoline Service Stations).
- e. 75 (Automotive Repair, Services and Parking).

[55 *Fed. Reg.* at 48014/3-15/1.]

2.3.2.4 EPA is required to conduct further studies of storm water discharges, and to issue additional regulations no later than October 1, 1992. [55 *Fed. Reg.* at 47993/1.] Facilities in the SIC Codes listed in 2.3.2.3 will be addressed by these studies. [55 *Fed. Reg.* at 48015/1.] Consequently, persons in charge of marketing facilities should consider the possibility of future coverage under the storm water rule in planning compliance with SDWA, RCRA, and other parts of CWA.

2.3.2.5 Storm water sewers should be used only for the discharge of storm water. No fluids associated with automotive service, including used oil, spilled product, antifreeze, solvents, or windshield washer, should be placed in or flushed down a storm water sewer unless such action is covered by a NPDES permit.

SECTION 3—GUIDELINES FOR TEMPORARY OR PERMANENT CLOSURE OF FLOOR DRAINS

3.1 General

3.1.1 Most automotive service facilities have floor drains in areas used for automobile service. In some cases spills may have been flushed down these floor drains or the drains used to dispose of wastes such as spent solvents and other chemicals that are now considered hazardous wastes under RCRA. These drains also may have been used to dispose of water-bearing oily wastes that have not been listed or identified as hazardous wastes in the past, but that may be classified as characteristically hazardous wastes under the revised toxicity characteristic test.

3.1.2 Floor drains are typically connected to a drywell, cesspool or septic system, sanitary sewer, or stormwater sewer.

3.1.3 Any floor drain that may in the future receive either listed hazardous waste or characteristically hazardous waste and that is now connected to a drywell, cesspool or septic system, or storm water sewer should be disconnected and treated in one of the following ways

- a. Connected to a sanitary sewer.
- b. Connected to a product recovery holding collection system
- c. Connected to a storage tank
- d. Closed temporarily, pending later reconnection to a sewer or tank.
- e. Closed permanently

3.1.4 The closure program set forth in this recommended practice does not cover total site evaluation or major site remediation. The owner or operator should consult the regulatory authorities for its area to determine whether such evaluation and/or remediation is necessary or desirable.

3.2 Site Investigation Phase

3.2.1 The owner or operator of the automotive service facility should either select a qualified contractor or identify qualified internal personnel to perform a detailed investigation.

3.2.2 Through on-site inspection and review of as built drawings, the investigator(s) should determine the location of all floor drains and other drains (such as sink drains, roof, canopy and car wash drains) and of any drywells, cesspools or septic systems, or storm water sewers receiving drainage.

3.2.3 The investigator(s) should determine the receptors and routing for all drains, including separators. The investigator(s) may use pipe locators, dyes, electronic system locators, or other means, and should be fully qualified and equipped for the investigation

3.2.4 For facilities having incomplete records, the investigator(s) should prepare a sketch of the facilities, identifying the locations and dimensions of drains, drywells, cesspools or septic systems, and lines

3.2.5 The investigator(s) should pay particular attention to determining:

- a. The drainage of sinks, outside drains and other facilities that might feed into the same lines as floor drains. Otherwise, disconnecting a floor drain may result in the inadvertent disconnection of drains that could remain open.
- b. Whether spent compressed air from pneumatic lifts or from the compressor tank condensate releases discharges into the floor drain system or into injection wells.
- c. Whether a syphon drain line is installed from the bay separator to the used oil tank.
- d. Whether trench drains exist inside service bays. (These should be included on the sketch of the facilities.)
- e. Any points of obvious contamination or other conditions that will influence floor drain disconnection.

3.2.6 State or local building and plumbing codes may affect the decision whether to close floor drains or reconnect them to an alternative disposal facility. Codes sometimes require that an automotive service bay be equipped with a floor drain. The investigator(s) should check for the existence of such codes and determine their impact. The most important widely-used building code containing such a provision is the code of the Building Ordinance Code Association (BOCA), which is typically used in the northeastern part of the U.S.

3.3 Floor Drain Sealing Phase

3.3.1 If owners or operators decide to close the floor drain, they should follow the procedures set forth in this subsection. If owners or operators decide to reconnect the drain, they should follow the procedures set forth in 3.4.

3.3.2 The owner or operator should arrange for a licensed contractor to perform the drain closure. This contractor should meet all of the certification requirements of the applicable state and local codes, including the building and plumbing codes. Properly experienced and licensed owners or operators can function as their own contractors.

3.3.3 The process of closing the drain will generate wastes that may be hazardous. The contractor can either arrange for a qualified waste disposal company to be on-site to collect and remove wastes generated during drain closure or dispose of the waste personally. In either case, owners and operators should be aware of their own responsibilities for ensuring that the waste is properly handled, and should exercise appropriate supervision over the contractor and over any waste disposal company.

3.3.3.1 If a waste disposal company is used, the contractor should ensure that it has all the licenses and permits that are legally required of firms that handle hazardous waste and is equipped with appropriate and legally proper containers for transportation and storage.

3.3.3.2 If the contractor's firm handles waste itself, it must be sure that it collects waste in appropriate containers. All regulations applicable to storage and disposal of the waste must be followed.

3.3.4 The EPA, Department of Transportation and local emergency or environmental office can provide specific information regarding licensed waste disposal companies, approved containers, approved disposal sites, and any other applicable regulations. As noted above, the owner or operator is ultimately responsible for proper disposal of all wastes, and should carefully review all arrangements made by the contractor to ensure compliance with regulatory requirements.

3.3.5 It may be advantageous to segregate waste into separate containers according to its status as hazardous or non-hazardous waste. This may require analysis of the waste prior to removal (see 4.2).

3.3.6 PROCEDURES FOR CLOSURE OF FLOOR DRAINS

3.3.6.1 Initial Steps Applicable to Either Temporary or Permanent Closure

The contractor should:

- a. Pump out and flush all separators, drains, lines (including lines leading to a sanitary sewer), and receptors, using equipment necessary to create clean surfaces and prevent any future seepage of contaminating material. If cleaning materials are used, they should not contain solvents.
- b. Clean any points of obvious contamination and remove visible contamination or unsightly material.
- c. Remove any open grates inside bays.
- d. Place plumbers plugs in all drain discharge lines and clean outs.

3.3.6.2 Further Procedures Applicable to Temporary Closure

The contractor should:

- a. Place a rigid screening material over the floor drain discharge outlet and secure so as to prevent debris, backfill or concrete from entering the piping.

- b. Backfill with clean sand or gravel where room permits and cap the floor drain with at least 2 inches of concrete, making the level even with the existing elevation of the bay drain.
- c. If there is insufficient room for backfill, prepare the floor drain for concrete adhesion and pour 2 inches of concrete.

3.3.6.3 Further Procedures Applicable to Permanent Closure

The contractor should:

- a. Disconnect any oil siphon lines from both the oil/water separator and the waste oil tank and plug any openings. As much of the line as possible should be removed. Any remaining line should be plugged with a cement-based slurry such as mortar. Any openings created in the waste oil tank should be closed in accordance with the tank manufacturer's recommendations with a bung plug or other device.
- b. Reroute any spent air discharge lines to the outside rear wall or other appropriate place. Abandoned exposed piping should be removed. Any remaining piping should be plugged with mortar or similar material.
- c. Fill cleaned separators and receptors with compacted clean sand to the bottom of the existing slab or cover. Water tamp is advisable for sand compaction. Other clean material which can be properly compacted, such as gravel, may be used as an alternative.
- d. Pour concrete to grade in all separator and receptor openings to match the existing elevation of the bay drain. Match the dimensions and finishes of adjoining components.

3.3.6.4 Further Procedures Applicable to All Closures

The contractor should:

- a. Recognize that bay floor concrete capping is not usually required, but that any concrete cap installed should be poured level or with minimal slope down to the bay door. Permanent adhesion of the concrete cap to the

existing structure should be ensured. This may require cleaning, etching, roughening, drilling, or the use of special materials.

- b. Test operation of remaining drains and discharge points.

- c. Sample, analyze and dispose of all waste liquid, sludges, and solids in accordance with federal, state, and local requirements (see 4.2). Waste material must be transported to an appropriate disposal site by a qualified waste transporter. If waste is deemed hazardous by regulatory authorities, it is to be transported to an approved hazardous waste Treatment/Storage/Disposal (T/S/D) site. All required manifests must be completed and submitted.

3.4 Reconnecting Floor Drains

3.4.1 If sealing a floor drain is not practical, then one of the following options must be chosen for any drain that may receive hazardous wastes.

3.4.1.1 The drain can be connected to a sanitary sewer connected to a POTW. If this option is used the owner or operator should be aware of reporting and pretreatment requirements described in 2.3.1, and of any local pretreatment requirements.

3.4.1.2 The drain can be connected to a product recovery holding collection system consisting of an oil/water separator and appropriate facilities for storing or disposing of residual water. The recovered product would be recycled.

3.4.1.3 The drain can be connected to a storage tank. If this option is used, the owner or operator should be aware of the requirements governing Hazardous Waste Storage Tanks, of the requirements governing Underground Storage Tanks that hold petroleum or hazardous substances, of the limitations on the time for which hazardous waste can be stored, of the likelihood that additional hazardous waste will be generated that will need disposal, of the requirements necessary to maintain the status of a Small Quantity Generator (SQG), and of manifesting and transportation requirements.

SECTION 4—GUIDELINES FOR CLOSING DRYWELLS AND CESSPOOLS

4.1 General

Servicing automobiles often involves the use of chemical substances that are the subject of national drinking water standards or that, when discarded, may be classified as hazardous waste. If a floor drain exists these substances are quite likely to be discharged into it. The result is that any Class V well connected to a floor drain

at an automotive service facility has the potential to receive injections of fluids that should not be placed in a Class V well (see 2.1.3.4) or to become a banned Class IV well used to dispose of hazardous waste. Consequently, any Class V well connected to a floor drain should be closed in accordance the procedures described in this section.

If wastes that were listed as hazardous wastes or identified as characteristically hazardous wastes at the time of their disposal have been injected into the drywell or cesspool, then the well is a Class IV well and is not covered by this recommended practice. [See 40 C.F.R. § 144.6(d).]

4.2 Initial Testing

Collect samples from both the liquid and sludge phases of the oil/water separator and the drywell or cesspool in accordance with the procedures described in 40 C.F.R. Part 261, Appendix I ("Representative Sampling Methods"). The samples should be analyzed to determine whether they are characteristically hazardous waste, as defined by EPA in 40 C.F.R. § 261. The characteristics that should be tested for are:

- a. Ignitability, which exists if the flashpoint of the substance is less than 140°F, as determined by the methods described in 40 C.F.R. § 261.21.
- b. Toxicity, which exists if the concentration level of any of 40 designated contaminants exceeds the levels specified in 40 C.F.R. § 261.24. The procedure for testing for toxicity can be found at 40 C.F.R. § 261 Appendix II, as corrected at 55 *Fed. Reg.* 26987 (June 29, 1990). The toxicity test should be conducted for volatile organic chemicals and metals, which are the contaminants likely to be found in drywells or cesspools at automotive service facilities.

Note If other chemical substances named in 40 C.F.R. § 261.24 (pesticides or herbicides, for example) have been used on-site, and if there is any reasonable possibility that residues may have been flushed into the drywell or cesspool, these substances should also be tested for.

4.3 Closure Procedure A

4.3.1 After the initial testing is concluded, Closure Procedure A should be used if *none* of the following conditions exist:

- a. An aquifer that is a sole source of drinking water underlies the drywell or cesspool.
- b. A potable water well is within 300 feet of the drywell or cesspool.
- c. A non-potable water well is located on-site and produces water with a Total Dissolved Solids (TDS) level of less than 10,000 parts per million. EPA's UIC Program classifies as an underground source of drinking water (USDW) any aquifer that supplies a public water system (PWS) or which contains a sufficient quantity to supply a PWS and which currently either provides water for human consumption or contains fewer than 10,000 mg/l TDS [40 C.F.R. § 144.3].

- d. Any of the samples analyzed pursuant to 4.2 exhibits a hazardous characteristic.

If any of the above conditions *do* exist, the owner or operator should follow the procedure described in 4.4.

4.3.2 Remove liquids and sludges from the drywell or cesspool. This material can be discarded as solid, non-hazardous waste.

4.3.3 If the drywell or cesspool is no longer needed for drainage from sources other than floor drains (such as roof stormwater runoff), it should be backfilled in accordance with applicable local regulations and the disturbed area restored to its original condition. Prior to continued use, a drywell should be inspected and its structural integrity confirmed by a qualified expert.

4.4 Closure Procedure B

4.4.1 After the initial testing is concluded, Closure Procedure B should be used if *any* of the following conditions exist:

- a. An aquifer that is a sole source of drinking water underlies the drywell or cesspool.
- b. A potable water well is within 300 feet of the drywell or cesspool.
- c. A non-potable water well is located on-site and produces water with a TDS level of less than 10,000 parts per million.
- d. Any of the samples analyzed pursuant to 4.2 exhibits a hazardous characteristic.

4.4.2 Remove liquids and any sediments (such as sludge or dirt) from the drywell or cesspool. This material should be handled and discarded as either non-hazardous waste or as hazardous waste, according to the results of the analysis conducted pursuant to 4.2.

4.4.3 Collect a sample of the soil from underneath the drywell or cesspool. If a drywell or cesspool contains rock or gravel fill, which is demonstrated to be non-hazardous, a hole can be drilled through the fill to a point below the level of the bottom of the drywell or cesspool. If it does not contain fill, a grab sample can be taken from the bottom after the removal of any of the sediments described in 4.4.2.

Note If soil boring equipment is required, see 5.4.3 and 5.4.4.

4.4.4 Analyze the soil sample according to the procedures set forth in 4.2.

4.4.5 If the soil sample *does not* exhibit a hazardous characteristic, then Subprocedure B-1 (described in 4.4.6)

should be followed. If the soil sample *does* exhibit a hazardous characteristic, then Subprocedure B-2 (described in 4.4.7) should be followed.

4.4.6 SUBPROCEDURE B-1

4.4.6.1 If the soil does not exhibit a hazardous characteristic, then the procedures set forth in this subsection should be followed.

4.4.6.2 Clean out the drywell or cesspool in one of the following ways:

- a. If the drywell or cesspool contains rock or gravel fill, the recommended procedure, unless otherwise required by the controlling regulations, is to use a small steam generator to clean the fill material. Liquid and sludge generated as a result of this process should then be removed. Fill material can be left in place to provide structural support for the drywell or cesspool.
- b. If the drywell or cesspool does not contain fill material, the recommended procedure, unless otherwise required by the controlling regulations, is to ensure the removal of the sediments described in 4.4.2.

4.4.6.3 If the drywell or cesspool is no longer needed for drainage from sources other than floor drains (such as roof stormwater runoff), it should be backfilled in accordance with applicable local regulations and the disturbed area restored to its original condition. Prior to continued use, a drywell should be inspected and its structural integrity confirmed by a qualified expert.

4.4.7 SUBPROCEDURE B-2

4.4.7.1 If the soil exhibits a hazardous characteristic, then the following procedures should be followed:

4.4.7.2 Clean any fill material, as prescribed in subsection 4.4.6.2. Liquid and sludge generated as a result of this process should then be removed. The owner or operator can either simply assume that this material is hazardous waste and handle it accordingly, or can have it analyzed and thereafter treat it as hazardous or non-hazardous waste as dictated by the results of the analysis.

4.4.7.3 Remove the cleaned fill. If rock or gravel fill has been steamcleaned properly, it should not exhibit a hazardous characteristic, and it need not be treated as hazardous waste.

4.4.7.4 Remove visibly contaminated soil. The owner or operator can either simply assume that this material is hazardous waste and handle it accordingly, or can have it analyzed and thereafter treat it as hazardous or non-hazardous waste as dictated by the results of the analysis.

4.4.7.5 Bore a hole in the bottom of or immediately adjacent to the drywell or cesspool to a depth of five feet below the bottom and remove a sample of soil and groundwater (if groundwater is present) for analysis to determine the extent of any vertical subsurface soil contamination.

4.4.7.6 Samples should be sent to a certified analytical laboratory and analyzed in the manner specified in 4.2.

4.4.7.7 If the soil and/or groundwater samples exhibit a hazardous characteristic, additional soil borings should be placed five feet laterally out from the drywell or cesspool to determine the extent of any areal contamination. These borings also should be five feet below the level of the bottom of the drywell or cesspool. Care should be taken to ensure that borings do not create a pathway to the water table. This can be done by plugging the hole as soon as the sample has been taken.

4.4.7.8 The program of soil and groundwater sampling described in 4.4.7.5 through 4.4.7.7 should define the extent of any subsurface contamination and should assist in the development of a plan for monitoring, containment, and/or remedial action. Any further investigation and remedial action plans would need to be developed on a site-specific basis. Insofar as the substances of concern are petroleum products, useful information for the preparation of such a plan can be found in API Publication 1628.

4.4.8 GOVERNMENT APPROVAL

Throughout these processes, the owner or contractor should obtain appropriate EPA, state, and local approvals.

SECTION 5—GUIDELINES FOR CLOSING SEPTIC SYSTEMS

5.1 General

As noted in 4.1, servicing automobiles often involves the use of chemical substances that are the subject of national drinking water standards or that, when discarded, may be classified as hazardous waste. If a floor drain exists these substances are quite likely to be discharged into it. The result is that any septic system connected to a floor drain at an automotive service facility has the potential to receive injections of fluids that should not be placed in a Class V well (see 2.1.3.4) or to become a prohibited Class IV injection well used to dispose of hazardous waste. Consequently, any septic system connected to a floor drain should be closed in accord with one of the two procedures described in this Section.

If wastes that were listed as hazardous wastes or identified as characteristically hazardous wastes at the time of their disposal have been injected into the septic system, then the system would be regarded as a Class IV well and is not covered by this recommended practice. [See 40 C.F.R. § 144.1(g)(1)(iii), 144.6(d).]

5.2 Initial Testing

Collect samples from both the liquid and sludge phases of the oil/water separator and the septic tank. The samples should be collected and analyzed following the same procedures as those prescribed for drywells and cesspools in 4.2.

5.3 Closure Procedure C

5.3.1 After the initial testing is concluded, Closure Procedure C should be used if *none* of the following conditions exist:

- a. An aquifer that is a sole source of drinking water underlies the septic system.
- b. A potable water well is within 300 feet of the septic system.
- c. A non-potable water well is located on-site and produces water with a TDS level of less than 10,000 parts per million.
- d. The samples analyzed pursuant subsection 5.2 exhibit a hazardous characteristic.

If *any* of the above conditions *do* exist, the owner or operator should follow the procedure described in 5.4.

5.3.2 Remove liquids and sludges from the septic system. This material can be discarded as solid non-hazardous waste.

5.3.3 If the septic system is no longer needed for drainage from sources other than floor drains, it should be backfilled in accordance with applicable local regulations and the disturbed area restored to its original condition. Prior to continued use, the septic tank should be inspected and its structural integrity confirmed by a qualified expert.

5.4 Closure Procedure D

5.4.1 After the initial testing is concluded, Closure Procedure D should be used if *any* of the following conditions exist:

- a. An aquifer that is a sole source of drinking water underlies the septic system.
- b. A potable water well is within 300 feet of the septic system.
- c. A non-potable water well is located on-site and produces water with a TDS level of less than 10,000 parts per million.
- d. Any of the samples analyzed pursuant to 5.2 exhibits a hazardous characteristic.

5.4.2 Remove liquids and sludges from the septic system. This material should be handled and discarded as either non-hazardous waste or as hazardous waste, according to the results of the analysis conducted pursuant to 5.2.

5.4.3 Collect samples of the soil and groundwater (if groundwater is present) from directly beneath the septic tank or immediately adjacent to it at two points:

- a. Immediately below the level of the bottom of the tank.
- b. About five feet below the level of the bottom of the tank. (Care should be taken to ensure that borings do not create a pathway to the water table. This can be done by plugging the hole as soon as the sample has been taken.)

Note The reason for taking this second sample is that it will be necessary to take such a sample if the soil or groundwater immediately below the septic tank exhibits a hazardous characteristic. Therefore it is most efficient simply to take this second sample at the outset, when the soil boring equipment is already on-site and a hole has been drilled to the level of the bottom of the tank. Otherwise the equipment would have to be brought back to re-drill essentially the same hole.

5.4.4 Analyze the soil and groundwater samples according to the procedures set forth in 5.2.

Note If the samples from immediately below the level of the bottom of the tank do not exhibit a hazardous characteristic, neither will the samples from five feet down. However, it is most efficient to have all samples analyzed at one time.

5.4.5 If none of the soil and groundwater samples exhibits a hazardous characteristic, then Subprocedure D-1 (described in 5.4.6) should be followed. If any of the soil and groundwater samples *does* exhibit a hazardous characteristic, then Subprocedure D-2 (described in 5.4.7) should be followed.

5.4.6 SUBPROCEDURE D-1

5.4.6.1 If none of the soil and groundwater samples exhibits a hazardous characteristic, and if the septic system is no longer needed for drainage from sources other than floor drains, it should be backfilled in accordance with applicable local regulations and the disturbed area restored to its original condition.

5.4.6.2 If the septic system is to continue in use, it should be inspected and its structural integrity confirmed by a qualified expert.

5.4.7 SUBPROCEDURE D-2

5.4.7.1 If any of the soil or groundwater samples exhibits a hazardous characteristic, then the following procedures should be used.

5.4.7.2 The pattern of contamination should be analyzed as follows:

- a. If the sample(s) from immediately below the tank exhibit a hazardous characteristic, and the sample(s)

from five feet below this level do not, then the contamination is limited and a remedial action plan can be devised accordingly, as described in 5.4.7.4.

- b. If the sample(s) from five feet below the level of the tank exhibit a hazardous characteristic, then additional soil borings should be made five feet laterally out from the septic tank to determine the extent of any areal contamination. These borings should also be five feet below the level of the bottom of the tank. (Again, care should be taken to ensure that borings do not create a pathway to the water table.)

5.4.7.3 Samples should be sent to a state-certified analytical laboratory and analyzed in the manner specified in 5.2.

5.4.7.4 The program of soil and groundwater sampling described above in 5.4.7.1 through 5.4.7.3 should define the extent of any subsurface contamination and should assist in the development of a plan for monitoring, containment, and/or remedial action. Any further investigation and remedial action plans would need to be developed on a site-specific basis. Insofar as the substances of concern are petroleum products, useful information for the preparation of such a plan can be found in API Publication 1628.

5.4.8 GOVERNMENT AGENCY APPROVAL

Throughout these processes, the owner or contractor should obtain appropriate EPA, state, and local approvals.

SECTION 6—FUTURE DISPOSAL OF NON-HAZARDOUS MATERIALS FROM DRAINS

6.1 General

Closing a Class V well may eliminate the facility's method for disposing of water from drains handling such non-hazardous effluents as storm water, snow-melt, service bay hand sink drainage, or condensates from air conditioners or steamtraps.

6.2 Handling Non-Hazardous Materials

Four alternatives for handling this water are:

- a. Divert it to surface runoff.

- b. Connect the drainage to the storm water drain system.

- c. Connect the drainage to the sanitary sewer system.

- d. Discharge it into a properly designed, constructed and permitted drywell.

6.3 Compliance with All Applicable Rules

Any alternative selected must be conducted in compliance with all applicable rules governing NPDES, State Pollutant Discharge Elimination Systems (SPDES), discharges into POTWs, the UIC program, and storm water discharges.

SECTION 7—SERVICE BAY OPERATING PROCEDURES

7.1 General

This section sets forth operating procedures to be used in service bays once the floor drains have been sealed or when there is a need to minimize drainage to a holding tank or POTW.

7.2 Handling Fluids

7.2.1 Maintenance and repair of motor vehicles generates four different types of waste fluids. Each of these types must be kept separate from the others and handled differently. Regulations governing them may vary from state to state and city to city.

7.2.2 The four specific fluids are:

7.2.2.1 *Lubricating and hydraulic fluids.* These include motor oil, transmission fluid, gear oil, power steering fluid, and brake fluid. These fluids should be captured and stored in waste oil containers until picked up by a recycler. If they are not recycled, they may require disposal as a hazardous waste as a result of the recent revisions in the TC test or under local or state rules.

7.2.2.2 *Coolant and antifreeze drained from radiators.* These fluids should be stored in marked metal containers. They are recyclable, and can be held for a recycler, recycled on-site (with special equipment), or sent to a waste disposal facility. Radiator flush water containing *de minimis* amounts of antifreeze may be disposed of through a sanitary sewer or a storm drain if the practice is permitted locally.

7.2.2.3 *Cleaning solvents.* Many common solvents become listed hazardous wastes once they are spent. All washing and cleaning of parts should be performed in a self-contained, recirculating solvent sink. Used solvents should be picked up by a properly licensed disposal or recycling company. Solvents should never be disposed of by mixing with used oil. If they are not recycled, solvents may require disposal as a hazardous waste as a result of the recent revisions in the TC test or under local or state rules.

7.2.2.4 *Gasoline.* Gasoline drained from tanks or engines should be stored in appropriate, clearly-marked metal containers. Quantities in excess of 10 gallons should not be kept within the building. Gasoline should not be mixed with any other category of fluids. Clean, uncontaminated gasoline may be used in service vehicles or returned to product storage. Contaminated gasoline should be disposed of as a hazardous waste.

Note: If gasoline is re-used, great care must be taken to ensure that it is in fact uncontaminated, and that it is not mixed with the wrong grade or type of product. Some marketers regard the risk of inappropriate mixing (such as putting leaded gasoline into an unleaded tank) as too great, and do not re-use gasoline drained from tanks or engines.

7.2.3 In the future, minor leaks and spills should be cleaned up immediately. Inert absorbent material, such as granular clay-based or cellulose-based absorbents or specially formulated absorbent pads, can be obtained from local suppliers. Used absorbent materials should be disposed of in accord with federal, state and local requirements. The owner or operator should be aware that some jurisdictions may classify such materials as hazardous wastes.

7.3 Sealing Bay Floors

7.3.1 The operator of an automotive service facility may find that sealing bay floors helps maintain a clean workspace. The procedures to follow are:

- Wash down bays by using a mop to apply a biodegradable emulsifier/degreaser. Rinse with a wet mop and let dry.
- Acid etch the bay floors with a solution of muriatic (hydrochloric) acid and water.

WARNING: Muriatic acid is irritating to the skin, eyes, and lungs. Use protective clothing and exercise extreme caution.

- Apply high pressure wash to remove thoroughly any spent residue from the concrete. Use a biodegradable washing solution, rinse with clear water and let dry.

Note When a high pressure wash is being used, cover all electrical outlets and equipment and shut off power to bays to reduce the risk of electrical shock.

- Apply concrete sealer over entire floor according to manufacturer's specifications and follow instructions for recommended cure time.

7.3.2 The above procedures are typically used for new floors. They may be unsuccessful when used on older, hard-to-clean floors.

7.3.3 Sealing bay floors should be performed by a qualified contractor. The contractor should ensure that all wastes from the initial washing, the etching process, and the sealing process are collected and disposed of properly.

7.4 Cleaning Bay Floors

7.4.1 Hoses should not be used to flush bay floors. The resulting waste water may contain traces of petroleum

hydrocarbons or toxic materials. Improper discharge of large amounts of this waste water (such as letting the water run onto a driveway), could result in soil and/or surface and groundwater contamination.

7.4.2 Bay floors should be mopped with a bio-degradable floor detergent and limited amounts of water. Any accumulation should be recovered by a wet vacuum or mop. Depending on the levels of contaminants present in the recovered fluid, and depending on applicable state or

local regulations, this material may be classified as hazardous waste and subject to all hazardous waste requirements. The only way to be certain is through laboratory tests of the waste material. For this reason, every effort should be made to minimize spills and to clean up any spilled material immediately.

7.4.3 A detailed procedure for cleaning service bay floors at automotive service facilities is set forth in Appendix A.

APPENDIX A—PROCEDURES FOR CLEANING BAY FLOORS AT AUTOMOTIVE SERVICE FACILITIES

A.1 General

This Appendix prescribes a methodology for performing maintenance cleaning of service bay floors having no drains for effluent discharge. It applies equally to sealed or unsealed concrete floors.

These procedures may not be acceptable in some states, so owners or operators must consult the appropriate authority or advisors. Businesses must also continually evaluate federal EPA, state, and local laws and regulations concerning the disposal of spent absorbents and absorbed rinse waste water.

A.2 Maintenance

Special emphasis should be placed on work practices which minimize or eliminate spills of petroleum and other automotive products in service bays.

Minor spills should be cleaned immediately by applying an approved absorbent and disposing of it properly, as described in A.2.2.6.

Water should not be used to wash down bay floors in a flushing-type operation. The resulting wastewater may contribute to soil and/or groundwater contamination.

All cleaning materials should be stored away from batteries, bleaches, or other caustic materials.

A.2.1 ABSORBENTS

In selecting absorbents, health, safety and environmental characteristics are of primary importance. Further, persons handling the absorbents should follow general safety precautions. A person should avoid breathing absorbent dust and wear impermeable rubber gloves when removing the contaminated material from the stained area. (Disposable latex and polyvinyl acetate gloves are not recommended.) The following procedure should be used:

- a. Absorb minor spills of petroleum or water-based products with absorbents. A number of good absorbents are sold commercially. The manufacturer's directions should be followed carefully.
- b. Place the absorbent directly on the entire spill area immediately after the incident occurs.
- c. Used absorbent should be swept up immediately to prevent its loss and to reduce the risk of accidents.
- d. Disposal of the spent absorbent will depend on the material and its classification under federal, state and local laws and regulations, and it is the owner or operator's responsibility to classify the waste for disposal purposes. The appropriate authorities and advisors should

be consulted. In general, there are two categories—non-hazardous and hazardous waste.

A.2.2 MOPPING PROCEDURE

A.2.2.1 General Safety Precautions

A.2.2.1.1 Persons performing the mopping procedure should take general safety precautions, and wear impermeable rubber gloves and eye protection while mopping. (Disposable latex and polyvinyl acetate gloves are not recommended.) Adequate ventilation should always be provided.

A.2.2.1.2 The manufacturer's warnings on any cleaning agents used should be read and carefully complied with.

A.2.2.1.3 The operator should comply with all applicable occupational safety and health requirements imposed by federal and state agencies, including requirements for hazard communication promulgated by the federal Occupational Safety and Health Administration [29 C.F.R. § 1910.1200] and by any comparable state laws.

A.2.2.2 Preparing the Cleaning Solution

A.2.2.2.1 Begin with a maximum of 0.75 gallons of water per service bay, where a bay consist of 350 square feet.

A.2.2.2.2 A number of good cleaning agents are sold commercially. The manufacturer's directions should be followed carefully, and the cleaning agent added to the water in proper amounts.

A.2.2.2.3 If recommended by the manufacturer of the cleaning agent, full strength cleaner can be applied directly to heavily soiled and stained areas. The maximum amount used should be 6 ounces per bay per application, unless a lesser amount is directed by the manufacturer.

A.2.2.3 Wet Mop Application

A.2.2.3.1 Use absorbent to remove all spills containing free liquids prior to mopping. Sweep the floor to collect any absorbent or dirt accumulation.

A.2.2.3.2 Apply cleaning solution with a wet mop evenly to entire floor surface. Conserve solution so entire area may be wet. Apply any remaining solution to heavily soiled areas.

A.2.2.3.3 Agitate the solution on floor surface immediately with a heavy duty brush or broom.

A.2.2.3.4 Let the solution sit on the surface for an adequate time (as recommended by the manufacturer) from the time of first application before proceeding.

A.2.2.4 Dry Mop Rinsing

A.2.2.4.1 Begin with 0.5 gallon clean water per bay and a clean mop.

A.2.2.4.2 Rinse and wring mop after each pick up. When finished, there will be approximately 0.75 gallon of water per bay for disposal.

A.2.2.5 Absorption Procedure

A.2.2.5.1 To dispose of the water that is left after rinsing the floor, an absorbent must be added to the waste water for disposal as a solid.

A.2.2.5.2 A number of good absorbents are sold commercially. The manufacturer's directions should be followed carefully.

A.2.2.5.3 Usually, absorbent should be added to the rinsewater in small amounts until no water can be seen in the bottom of the collection bucket, stirring frequently. For most commercial products a minimum of three to six pounds of absorbent per gallon of water will be necessary, depending on the absorbent.

A.2.2.6 Disposal

A.2.2.6.1 Do not empty rinsewater into storm sewer, sink or onto ground surface.

A.2.2.6.2 It is your responsibility to classify both the spent absorbent and absorbed rinsewater wastes for disposal purposes.

A.2.2.7 Frequency of Cleaning

For the best combination of cleanliness and waste disposal costs, it is recommended that the mopping procedure be performed regularly.

Order No. 804-16330

Appendix M

Best Management Practices for the Protection of Ground Water: A Local Official's Guide to Managing Class V UIC Wells by Connecticut Department of Environmental Protection

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BEST MANAGEMENT PRACTICES FOR THE PROTECTION OF GROUND WATER

A Local Official's Guide to Managing Class V UIC Wells



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GENERAL BEST MANAGEMENT PRACTICES

General Best Management Practices are BMPs which can be applied to any facility. This section includes Design BMPs and Procedural BMPs which deal with the following topics:

DESIGN BMPs

Subsurface Disposal Systems
Floor Drains
Dry Wells
Floors
Storage Facilities
Cooling Water
Utilities
Water Conservation
Foundation Drainage & Dewatering
Stormwater Management
Cross-connections
Work Areas
Connection to Municipal Sanitary Sewers
Holding Tanks

PROCEDURAL BMPs

Material & Waste Inventory Control
Preventative & Corrective Maintenance
Spill Control
Materials & Waste Management
Management
Employee Training
Communication
Record Keeping

General BMPs should be applied in addition to the specific BMPs for each of the facilities covered in this guidebook. Selecting the general BMPs appropriate for each facility is at the discretion of the local regulatory official, or as required to comply with state and local regulations.

BEST MANAGEMENT PRACTICES

GENERAL

DESIGN BMPs

Subsurface Disposal Systems

Minimum setback distances should be established between limits of leach fields and wellheads. Distances should be based on information such as percolation tests, zone of influence of leachate mounding, wellhead protection areas, and time of travel.

Leach fields must be sized according to soil characteristics, and hydraulic and pollutant loadings. Excessively sized septic system leach fields may cause reduced effectiveness if normal flows are inadequate to maintain a biologically active clogging layer throughout the leach field.

Septic systems are not recommended in areas with karst, fractured, cavernous, volcanic or any other highly permeable subsurface formation.

Additional detention times for septic tanks, and larger buffer zones around leachfields should be considered in septic system design.

All septic tank installations should be designed or retrofitted with provisions for sampling at the outlet baffle. Gas baffles should be installed at the outlet.

Maximum contaminant levels must be met for pollutants prior to discharge to leachfield distribution system.

Any facility on a septic system must have its septic tanks effluent monitored for Ph, BOD, nitrites, nitrates, and ammonia. Monitoring should be done annually, and increased to a quarterly schedule if detectable levels are recorded. After three successive non-detectable readings, the monitoring can be reduced to an annual schedule.

Verify that the septic system is serviced by a waste hauler.

Floor Drains

Eliminate floor drain discharges to the ground, septic systems (except in sanitary facilities), storm sewers, or to any surface water body from any location in the facility.

If no floor drains are installed, all discharges to the floor should be collected, contained and disposed by an appropriate waste hauler in accordance with federal and state requirements.

Floor drains in sanitary facilities must either discharge to a septic system, a municipal sanitary sewer, or a holding tank which is periodically pumped out.

Floor drains in work areas can either be connected to a holding tank with a gravity discharge pipe, or to a collection sump which discharges to a holding tank.

Dry Wells

Dry wells must be eliminated in ALL cases unless they receive ONLY CLEAN WATER DISCHARGES which meets all established Maximum Contaminant Levels (MCLs) promulgated under the Safe Drinking Water Act and other state and local standards for drinking water, and is in compliance with any other state and local requirements.

Floors

Floor surfaces in work areas and chemical storage areas should be sealed with an impermeable material resistant to acids, caustics, solvents, oils, or any other substance which may be used or generated at the facility. Sealed floors are easier to clean without

BEST MANAGEMENT PRACTICES

GENERAL

the use of solvents.

Work area floors should be pitched to appropriate floor drains. If floor drains are not used, or if they are located close to entrance ways then berms should be constructed along the full width of entrances to prevent stormwater runoff from entering the building.

Berms should also be used to isolate floor drains from spill-prone areas.

Storage Facilities

Loading and unloading of materials and wastes should be done within an enclosed or roofed area with secondary containment and isolated from floor drains to prevent potential spills from contaminating stormwater or discharging to the ground.

Underground storage tanks should not be used, unless explicitly required by fire codes or other federal, state or local regulations.

Where underground tanks are required, they should have double-walled construction or secondary containment such as a concrete vault lined or sealed with an impermeable material and filled with sand. Both types of tanks should have appropriate secondary containment monitoring, high level and leak sensing audio/visual alarms, level indicators, and overfill protection. If a dip stick is used for level measurements, there should be a protective plate or basket where the stick may strike the tank bottom.

Above-ground tanks should have 110% secondary containment or double-walled construction, alarms, overfill protection, and should be installed in an enclosed area isolated from floor drains, stormwater sewers, or other conduits which may cause a release into the environment.

Fill-pipe inlets should be above the elevation of the top of the storage tank

Tanks and associated appurtenances should be tested periodically for structural integrity.

Storage areas for new and waste materials should be permanently roofed, completely contained within secondary containment berms, isolated from floor drains, have sealed surfaces, and should not be accessible to unauthorized personnel.

Drum and container storage areas should be consolidated into one location for better control of material and waste inventory.

Cooling Water

Closed-loop cooling systems should be considered to eliminate cooling water discharges.

Any cooling water from solvent recovery systems should be free of contamination from solvent, metals or other pollutants, and should not discharge to the ground. Cooling water may be discharged to a storm sewer, sanitary sewer, or stream, provided all federal, state, and local requirements are met.

Utilities

Floor drains should be eliminated in rooms where boilers or emergency generators are housed.

Water Conservation

Flow restrictors and low-flow faucets for sinks and spray nozzles should be installed to minimize hydraulic loading to subsurface disposal systems.

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Foundation Drainage & Dewatering

If water from foundation drainage and dewatering is not contaminated, it may be discharged to a storm sewer or stream in accordance with any applicable federal, state or local requirements.

Contaminated water from foundation drainage & dewatering indicates a likely groundwater contamination problem, which should be investigated and remediated as necessary.

Stormwater Management

Stormwater contact with materials and wastes must be avoided to the greatest extent possible. Storage of materials and wastes should be isolated in roofed or enclosed areas to prevent contact with precipitation.

Uncovered storage areas should have a separate stormwater collection system which discharges to a holding tank.

Stormwater from building roofs may discharge to the ground. However, if solvent distillation equipment or vapor degreasing is used, with a vent that exhausts to the roof, then roof leaders may become cross contaminated with solvent. These potential sources of cross contamination must be investigated and eliminated.

Cross-connections

Cross-connections, such as sanitary discharges to storm sewers, stormwater discharges to sanitary sewers, or floor drain discharges to storm sewer systems, should be identified and eliminated.

Work Areas

Consolidate waste-generating operations and physically segregate them from other operations. They should preferably be located within a containment area with sealed floors and with no direct access to outside the facility. This reduces the total work area exposed to solvents, facilitates waste stream segregation and efficient material and waste handling, and minimizes cross contamination with other operations and potential pathways for release into the environment.

Waste collection stations should be provided throughout work areas for the accumulation of spent chemicals, soiled rags, etc. Each station should have labelled containers for each type of waste fluid. This provides safe interim storage of wastes, reduces frequent handling of small quantities of wastes to storage areas, and minimizes the overall risk of a release into the environment.

New solvent can be supplied by dedicated feed lines or dispensers to minimize handling of materials. These feed lines must default to a closed setting to prevent unmonitored release of material.

Connection to Municipal Sanitary Sewers

Existing and future facilities should connect their sanitary facilities to municipal sanitary sewer systems where they are available.

Holding Tanks

Facilities should discharge to holding tanks if they are located where municipal sanitary sewers are not available, subsurface disposal systems are not feasible, existing subsurface disposal systems are failing, or if they are high risk facilities located in wellhead protection areas.

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PROCEDURAL BMPs

Material & Waste Inventory Control

Conduct monthly monitoring of inventory and waste generation.

Order raw materials on an as-needed basis and in appropriate unit sizes to avoid waste and reduce inventory.

Observe expiration dates on products in inventory.

Eliminate obsolete or excess materials from inventory.

Return unused or obsolete products to the vendor.

Consider waste management costs when buying new materials and equipment.

Ensure material and waste containers are properly labelled. Not labeling or mislabelling is a common problem.

Mark purchase date and use older materials first.

Maintain product Material Safety Data Sheets to monitor materials in inventory and the chemical ingredients of wastes. Make MSDS sheets available to employees.

Observe maximum on-site storage times for wastes.

Control access to materials which are hazardous when spent; encourage material substitution.

Preventative & Corrective Maintenance

A regularly scheduled internal inspection and maintenance program should be implemented to service equipment, to identify potential leaks and spills from storage and equipment failure, and to take corrective action as necessary to avoid a release to the environment. At a minimum, the schedule should address the following areas:

Tanks, drums, containers, pumps, equipment, and plumbing;

Work stations & waste disposal stations;

Outside and inside storage areas, and stormwater catch basins & detention ponds;

Evidence of leaks or spills within the facility and on the site;

Areas prone to heavy traffic from loading and off loading of materials and wastes;

Properly secured containers when not in use;

Proper handling of all containers;

Drippage from exhaust vents;

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Proper operation of equipment, solvent recovery, and emission control systems.

Spill Control

Use emergency spill kits and equipment. Locate them at storage areas, loading and unloading areas, dispensing areas, work areas.

Clean spills promptly.

Use recyclable rags or absorbent spill pads to clean up minor spills, and dispose of these materials properly.

Clean large spills with a wet vacuum, squeegee and dust pan, absorbent pads, or booms. Dispose of all clean up materials properly.

Minimize the use of disposable granular- or powder- absorbents.

Spilled material should be neutralized as prescribed in Material Safety Data Sheets (MSDS), collected, handled and disposed in accordance with federal, state, and local regulations.

Use shake-proof and earthquake proof containers and storage facilities to reduce spill potential.

Materials & Waste Management

Use spigots, pumps, or funnels for controlled dispensation and transfer of materials to reduce spillage; use different spigots, etc., for different products to maintain segregation and minimize spillage.

Store materials in a controlled, enclosed environment (minimal temperature and humidity variations) to prolong shelf life, minimize evaporative releases, and prevent moisture from accumulating.

Keep containers closed to prevent evaporation, oxidation, and spillage.

Place drip pans under containers and storage racks to collect spillage.

Segregate wastes that are generated, such as hazardous from non-hazardous, acids from bases, chlorinated from nonchlorinated solvents, and oils from solvents, in order to minimize disposal costs and facilitate recycling and reuse.

Empty drums and containers may be reused, after being properly rinsed, for storing the same or compatible materials.

Recycle cleaning rags and have them cleaned by an appropriate industrial launderer.

Use dry cleanup methods and mopping rather than flooding with water.

Floors may be roughly cleaned with absorbent prior to mopping; select absorbents which can be reused or recycled.

Recycle cardboard and paper, and reuse or recycle containers and drums.

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Wastes accumulated in holding tanks and containers must be disposed of through an appropriately licensed waste transporter in accordance with federal, state, and local regulations.

Management

Management involvement in the waste reduction and pollution prevention initiatives is essential to its successful implementation in the work place. By setting the example and encouraging staff participation through incentives or awards, management can increase employee awareness about environmentally sound practice. A first step is to involve management in conducting a waste stream analysis to determine the potential for waste reduction and pollution prevention. This analysis should include the following steps:

- Identify plant processes where chemicals are used and waste is generated;

- Evaluate existing waste management and reduction methods;

- Research alternative technologies;

- Evaluate feasibility of waste reduction options;

- Implement measures to reduce wastes; and

- Periodically evaluate your waste reduction program.

Develop an energy and materials conservation plan to promote the use of efficient technologies, well-maintained inventories, and reduced water and energy consumption.

Sound environmental management should include the currency and completeness of site and facility plans, facility records and inventory management, discharge permits, manifests for disposal of wastes, contracts with haulers for wastes, and contracts with service agents to handle recycling of solvents or to regularly service equipment.

Employee Training

Training programs should be developed which include the following:

- Proper operation of process equipment;

- Loading and unloading of materials;

- Purchasing, labelling, storing, transferring, and disposal of materials;

- Leak detection, spill control, and emergency procedures; and

- Reuse/recycling/material substitution.

Employees should be trained prior to working with equipment or handling of materials, and should be periodically refreshed when new regulations or procedures are developed.

Employees should be made aware of MSDS sheets and should understand their information.

Employee awareness of the environmental and economic benefits of waste reduction and

BEST MANAGEMENT PRACTICES

GENERAL

pollution prevention, and the adverse consequences in ignoring them, can also facilitate employee participation.

Communication

Posting of signs, communication with staff, education and training, and posting of manuals for spill control, health and safety (OSHA), operation and maintenance of facility and equipment, and emergency response are essential. Storage areas for chemicals and equipment, employee bathrooms, manager's office, and waste handling stations are suggested areas for posting communication. A bulletin board solely for environmental concerns should be considered.

Regular inspection and maintenance schedules should be posted and understood by staff.

Record Keeping

Facility plans, plumbing plans, and subsurface disposal system plans and specifications must be updated to reflect current facility configuration. Copies of associated approvals and permits should be maintained on file.

OSHA requirements, health and environmental emergency procedures, materials management plans, inventory records, servicing/repair/inspections logs, medical waste tracking and hazardous waste disposal records must be maintained up to date and made available for inspection by regulatory officials.

AUTOMOTIVE SERVICES AND REPAIR

Background This category includes automotive repair and service shops (SIC Nos. 753x and 754x). Specific services of concern include Top, Body, and Upholstery Repair Shops and Paint Shops (SIC No. 7532); Automotive Exhaust System Repair Shops (SIC No. 7533); Automotive Transmission Repair Shops (SIC No. 7537); General Automotive Repair Shops (SIC No. 7538); Automotive Repair Shops, Not Elsewhere Classified (SIC No. 7539); and Carwashes (SIC No. 7542). Automotive Dealers and Gasoline Service Stations are classified separately in SIC major group 55; most of these facilities have repair operations and produce similar wastes.

Description of Operations

General Maintenance

& Repair

Common types of vehicle maintenance operations include drainage and replacement of lubricants, coolants, and brake fluids; radiator and brake maintenance, and incidental mechanical repairs. Rapid lubrication and oil change services have become particularly popular automotive specialty services which handle large quantities of oils and other fluids.

Automotive repairs shops conduct a range of vehicular repair and maintenance services, which may include application of paints and coatings, as well as mechanical repairs. In addition to general repair shops, this group includes specialty muffler, brake, and transmission repair shops.

Parts cleaning and degreasing of automotive parts and steam cleaning of engines are regularly performed as part of maintenance and repair activities. The use of solvents and detergents has been the focus of environmental concerns.

Radiator

Repair

Radiator repair shops clean, flush, and repair radiators. Radiators are drained of coolant and cleaned in tanks of highly alkaline solution (pH above 12), which may contain zinc chloride, and then rinsed with water either in a dip tank or by flushing with a hose. Radiators are pressure tested in a tank of water by plugging the inlet and outlet and blowing air into the radiator through an air hose. After testing and drying, radiators may be spray painted.

Autobody Repair &

Refinishing

Paint and body shops repair and paint vehicles. Old paint may be removed by stripping and sanding and new paints applied with hand-held sprayers. Body shops are frequently very small, two or three person operations.

Rustproofing

Rustproofing shops may remove dirt from the undercarriage of vehicles using pressure hoses. Vehicles may also be pretreated with rust removers containing strong acids or alkalis prior to spraying on rustproofing solutions. Solvents such as kerosene or mineral spirits are used to clean spray equipment and to remove rustproofing compounds from painted surfaces of the vehicle, often using a hand-held solvent spray gun.

Car Washing

Automatic car washes are equipped with high-pressure spigots dispensing soap solutions, usually containing a degreasing agent such as methylene chloride or trichloroethylene (TCE), rinsewater, and waxes, and with rotating brushes and buffers. Self-service car washes may provide covered or outdoor paved areas with pressurized spray hoses dispensing soap solutions, rinsewater, and wax.

Materials Used and Wastes Generated in Automotive Services & Repair

| OPERATION | TYPICAL MATERIALS USED | TYPICAL WASTES GENERATED |
|---------------------------------|---|--|
| Maintenance & Repair | Lubricating oils, oil additives & greases, power steering & brake fluids, radiator coolant (ethylene glycol, propylene glycol), windshield washing fluid (methanol), fuel additives (methanol), solvents, carburetor cleaners, oil filters, air conditioning coolant (freon), detergents | Waste oils & antifreeze, spent solvents & carburetor cleaners, solvent-tank sludges, soiled rags, empty containers, scrap metal parts, brake shoes, oil filters, freon, spent absorbents |
| Parts Repair & Rebuilding | Lubricating oils & greases, solder (lead, tin), solvents, degreasers, detergents | Waste oils drained from components, solder dross, empty oil & grease containers and dispensers, spent solvents & detergents, soiled rags, scrap metal parts |
| Parts Cleaning & Degreasing | Degreasers, carburetor cleaners, engine cleaners, solvents & degreasing agents containing mineral spirits, petroleum distillates (naphtha), aromatic hydrocarbons (toluene, xylene), fluorocarbons, acids, alkalies, alcohols (methanol, isopropyl alcohol), chlorinated hydrocarbons (1,1,1-trichloroethane) | Spent solvent, acids & alkaline solutions from cleaning baths; solvent- & oil-soaked rags; incidental spills; cleaning of tools |
| Radiator Repair | Antifreeze, (ethylene glycol, propylene glycol), strong alkaline solutions (sodium hydroxide), acids (muriatic acid), zinc chloride, paints and thinners, rinsewater, solder (lead, tin) | Spent acidic & alkaline solutions, alkaline sludges; waste antifreeze, paints, thinners, flushing rinsewater, sludges from treatment of recycled rinsewater, solder dross; scrap radiators & radiator repair wastes contaminated with significant levels of heavy metals (lead, copper, zinc, chromium, nickel, and tin) |
| Paint Preparation | Paint thinners, enamel reducers, white spirits containing alcohols, petroleum distillates, oxygenated solvents, mineral spirits, ketones | Spent solvents, solvent- & paint-soaked rags, paint wastes with heavy metals (cadmium, chromium, lead) |
| Autobody Painting & Refinishing | Enamels, lacquers, epoxies, alkyds, acrylics, primers containing aromatic hydrocarbons (toluene), chlorinated hydrocarbons (methylene chloride), petroleum distillates (VM&P naphtha), ketones (acetone, methyl isobutyl ketones), epoxy ester resins, metals (zinc, cadmium, chromium, lead) | Spent solvents, solvent- & paint-soaked rags, paint wastes with heavy metals |
| Spraying & Brush Cleaning | Paint thinners, enamel reducers, solvents, white spirits containing ketones (acetone), alcohols (methanol, isopropyl alcohol), petroleum distillates, mineral spirits, aromatic hydrocarbons (toluene) | Spent solvents, solvent- & paint-soaked rags, used paint booth filters, solvent-laden wastewaters from paint booth water curtains, paint wastes with heavy metals |
| Paint Removal | Solvents, paint thinners, enamel reducers, white spirits containing ketones (acetone), aromatic hydrocarbons (toluene), chlorinated hydrocarbons (methylene chloride), alcohols (methanol, isopropyl alcohol), mineral spirits, petroleum distillates, other oxygenated-hydrocarbons, blasting abrasives | Spent solvents, solvent- & paint-soaked rags, paint wastes with heavy metals, blasting abrasives & paint particulates containing heavy metals (cadmium, chromium, lead) |
| Rust Removal | Naval jelly, strong acids (phosphoric acid, hydrochloric acid, hydrofluoric acid), strong bases (sodium hydroxide), kerosene, mineral spirits | Waste acids, waste alkalies |
| Car Washing | Detergents, degreasers (1,1,1-trichloroethane, tetrachloroethylene), washwater & rinsewater | Spent washwater and rinsewater containing oil & gasoline residuals, detergents, degreasers, road salts and sediments |
| Battery Replacement | Lead, acids (sulfuric acid) | Lead dross, spent acids, scrap |

AUTOMOTIVE SERVICE & REPAIR

BEST MANAGEMENT PRACTICES

DESIGN BMPs

SEE GENERAL BEST MANAGEMENT PRACTICES

Floor Drains

Floor drains in service bays and vehicle washing areas must either be connected either to a holding tank with a gravity discharge pipe, to a sump which pumps to a holding tank, or to an appropriately designed oil/grit separator which discharges to a municipal sanitary sewer.

Oil/water separators must receive only floor washdown or vehicle washing wastewaters. They must not be used to collect spills or concentrated wastes.

If vehicle washing is conducted regularly, floor drains in wash bays must be connected to a separate grit separator which then discharges to the municipal sanitary sewer. Wastewaters from vehicle washing represent significant flows which can hydraulically overload an oil separator, and may contain detergents which can emulsify oils in an oil separator and impair treatment of oily wastewaters from service bay floor drains.

Service bay floor drains that discharge to dry wells must be cleaned out and eliminated. Liquid and sediment samples should be taken, and contaminated dry wells must be removed and contents disposed in accordance with regulatory requirements.

If no floor drains are installed, there should be no vehicle washing, and there should be no discharges to the environment of any kind.

Floors

Vehicle wash bays must be completely bermed.

Seal service bay concrete floors with an impervious material to facilitate cleanup without using solvents.

Floors should not be cleaned by flushing with water; use a wet-vacuum or mop and dispose of cleaning wastes properly.

Some facilities may use service "pits" which allow a vehicle to be serviced without using a hydraulic lift. These pits often have earthen floors which are vulnerable to spills and contamination. Service pits must be checked for historical contamination, taking remedial action taken when necessary. Service pits should be completely surfaced with concrete and sealed with a suitable impermeable material. There must also be provisions for the collection of spills or accumulations of wastes, such as a sump which discharges to a holding tank. The construction of service pits must be avoided in any new facilities.

Areas where vehicles are stored or repaired must have an impermeable surface and have provisions for containment of vehicle leaks.

Hydraulic lifts should be checked for leaks and potential releases of fluid. Lift systems must be provided with a secondary containment system. Above-ground lift systems should be used wherever possible. A nonhazardous hydraulic fluid should be used.

Stormwater Management

Uncovered vehicle storage areas should have a separate stormwater collection system with an oil/grit separator which discharges to the municipal sanitary sewer or to a dead

AUTOMOTIVE SERVICE & REPAIR

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holding tank.

Work Areas

Dedicating service bays for a specific operation, such as parts cleaning & degreasing, engine steam cleaning, radiator repair, fluid changes and replacement, vehicle washing, rustproofing & undercoating, and body stripping & painting, can minimize cross-contamination, facilitate segregation of waste streams, and allow for more efficient handling of materials and wastes.

Each service bay should be provided with a waste collection station. Each station could have labelled containers or for each type of waste fluid, or labelled waste sinks which discharge to an appropriate waste-holding tank.

PROCESS BMPs

General Maintenance & Repair

In engine rebuilding, engine bakeout and ball peening may be a suitable substitute for engine boilout.

Use drip pans to minimize leaks and spills onto the floor.

High-performance, longer lasting oils can reduce the frequency of changes and the amount of waste produced.

Used engine oil should be recycled through a licensed recycling service.

Spent oil filters may be recycled for their scrap metal content. A drain rack over a waste oil sink might be used to drain and collect all residual oil prior to disposal.

Consider the use of propylene glycol-based antifreeze as an alternative to the more toxic ethylene glycol types.

Antifreeze can be recovered either on-site or off-site. Units are available which chemically restore ethylene glycol by removing impurities and neutralizing organic acids formed as breakdown products of the coolant. Other services are available which will regularly remove and process used antifreeze, selling the product back to the generator at reduced cost.

Parts Cleaning & Degreasing

Aqueous or alkaline cleaners may be substituted for solvent-based cleaners in some applications, particularly for non-aluminum parts.

High-pressure water washing may be an effective method of parts cleaning; wastewater can be treated with an oil/water separator and recycled.

Substitute nonchlorinated solvents for chlorinated compounds wherever possible.

Parts cleaning and degreasing area should be isolated from other operations, preferably located within a containment area with no direct access to outside the facility, and the

AUTOMOTIVE SERVICE & REPAIR

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floor must be sealed with a suitable impermeable material.

Precleaning parts with a squeegee, rag, or wire brush, followed by steam cleaning, high-pressure wash, or hot bath which recycles an aqueous solution using an oil separator, would be an efficient approach to minimizing or even eliminating the use of hazardous solvents and would prolong the life of any subsequent cleaning solution.

Where possible use only hot water for the precleaning and subsequent cleaning steps. With a recycling system, a detergent may be used and a rust inhibitor may be added if parts are sensitive to corrosion.

For non-aluminum parts an alkaline-based aqueous cleaner may be used.

If hot water, detergent, or alkaline baths are demonstrably inadequate, then a nonchlorinated organic solvent might be used, such as d-limeoline (a terpene), or a high flash (> 140 F) naphtha. Chlorinated solvents and other solvents which have a specific gravity greater than 1.0 (water) should be avoided.

Using one multi-purpose solvent rather than several would increase reuse and recycling potentials.

Parts cleaning and degreasing should be done in a self-contained, recirculating solvent sink.

Extend solvent life by using a two-stage rinsing process with "dirty" and "clean" solvent baths.

Reduce the frequency of solvent bath replacement to reduce solvent use and handling. Decanting solvent sludges from tanks can extend solvent bath life. Replace solvent only as needed or extend the replacement schedule.

The used solvent decanted from the separation of solvent sludges can be reused as a precleaning step for dirty parts or for less critical parts prior to a final cleaning.

Increase freeboard and place hoods or covers on all parts-cleaning tanks to minimize evaporation of solvent.

Solvent test kits may be used to check when solvent is too dirty for further use.

A drip rack placed over the cleaning tanks would allow for dragout to drain prior to any following cleaning step. Reduce dragout from parts cleaning by allowing longer drip time, or wipe parts with cloth or rags.

Spent aqueous and other nonhazardous solutions may become hazardous after use due to elevated concentration of heavy metals or toxic organic substances. They must be treated or disposed as a hazardous material.

A recommended procedure for parts cleaning is to employ a service which will maintain

AUTOMOTIVE SERVICE & REPAIR

BEST MANAGEMENT PRACTICES

the parts-cleaning unit, and exchange spent solvents, recycle off-site, or dispose of them properly on a contractual basis. Some services recycle up to 70 - 80 % of the solvent and sell it back to the generator at reduced cost. This would reduce handling of solvents, and would ensure proper operation and maintenance of parts-cleaning equipment.

On-site recycling systems may be used which employ distillation and/or filtration. These systems should be maintained by trained staff or a contracted service agent. A reduced emission/closed loop type, which captures evaporative losses, is preferred.

Engine Steam Cleaning Eliminate the use of solvents for steam cleaning engines and parts.

Steam cleaning should not be conducted outside, where wastewaters may be discharged to the ground.

If no detergents or solvents are used, steam-cleaning wastewaters may discharge to the municipal sanitary sewer via an oil separator.

If detergents or solvents are employed, wastewaters must either be recycled and reused or discharged to a holding tank. If a grit separator has been installed for treating vehicle-washing wastewater prior to discharging to the municipal sanitary sewer, and if no solvents are used for steam cleaning, then these wastewaters may discharge to the grit separator.

**Autobody Refinishing
& Painting**

Consider the use of water-based paints to reduce the amount of hazardous waste generated. These types of paints are being developed for most automotive applications, and should become more widely available in the near future.

Paints with low volatility, lower metal concentrations, and higher solid content should be used when possible.

Autobody painting should be done in a separate, secure area with no floor drains.

Water curtains in paint booths must recirculate the water used. There should be no discharges.

Reusable metal or styrofoam paint booth filters should be used.

Use more efficient painting processes such as electrostatic painting or powder coating, which reduce the amounts of paint overspray and paint waste generated. The efficiency of paint-spraying equipment varies from about 30-60 % for air-atomized sprayers and 65-80 % for electrostatic sprayers, to as much as 90-99 % for powder-coating equipment.

Use more efficient paint transfer equipment, such as high-volume low-pressure or low-volume low-pressure spray guns.

Paint transfer equipment should be regularly calibrated to maintain proper application rates and reduce waste.

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Mix paint only as needed.

Heating paint mixtures may reduce the amount of thinner required.

Reduce paint cup size on spray guns to reduce amount of wasted paint.

Waste paint can be reused as a rough coat for other applications, such as undercoating.

Use recycling spray-gun washers to reuse solvent and reduce amount of waste generated. Recycling may consist of filtration and/or distillation.

Segregate waste paint and paint sludges from waste thinner.

Decant waste thinner for reuse as a precleaning solvent for spray guns and other equipment, then use a small amount fresh solvent for final cleaning. Paint thinners may be prolonged by using multiple cleaning steps, which may reduce spoilage of "clean" thinner baths. Waste thinners may also be recycled for use as a precleaning step for parts cleaning.

Vehicle Washing

Aromatic and chlorinated hydrocarbon solvents should be eliminated from vehicle-washing operations.

Vehicle-washing operations should recycle wastewaters by using rinsewaters as makeup for washwater and using appropriate treatment such as filtration and grit removal. Recycle systems are available which recycle up to 100% of the wastewater generated.

Washwaters may discharge to a dedicated grit separator which discharges to the municipal sanitary sewer.

Car-wash wastewaters are not recommended to combine with floor drain wastewaters. Detergents used in washing may emulsify oils captured in the separator, which may subsequently discharge to the sewer system.

Radiator Repair

Aromatic and chlorinated hydrocarbon solvents should not be used in radiator repair.

Eliminate the use of lead solder where possible, or use solder with the lowest lead content.

Radiator repair shops can use a three-step system: a boil-out tank (no discharge) for cleaning; a dragout tank (no discharge) from which rinsewater is decanted into the boil-out tank to make up for evaporative losses; and a recycling system for rinsing and pressure testing, from which water is treated to remove metals (copper, nickel, lead, zinc, tin, chromium) and then reused. With this procedure, most contamination remains in the boil-out or dragout tanks.

Boil tanks should be placed in a secure area with secondary containment. The solutions from these boil tanks should be used for as long as possible.

AUTOMOTIVE SERVICE & REPAIR

BEST MANAGEMENT PRACTICES

Drainage from boil tanks should be collected in holding tanks or drums and may have to be disposed of as a hazardous waste.

Sludges from the treatment of the recycled rinsewaters must be collected and disposed as a hazardous waste.

Discharges from flushing rinsewater may be treated for metals removal and discharged to a municipal sanitary sewer system in accordance with federal, state, and local discharge regulations.

Spray painting of radiators should follow BMPs for autobody painting.

Rustproofing

Eliminate the use of solvents in rustproofing operations where possible.

Use high-pressure washing as an alternative to using solvents.

This operation may use equipment similar to that used in autobody painting. Follow BMPs for autobody refinishing and repainting.

Solvent drippage from cleaning automobile surfaces prior to rustproofing or undercoating must be collected in a holding tank and disposed of properly. There must be no discharges from these operations.

If a pressure washing is done without using solvents, the wastewater may discharge to a grit separator connected to a municipal sanitary sewer. All federal, state, and local discharge regulations must be met.

Do not undercoat vehicles with used solvent or solvent sludge. Solvents and solvent sludges can drip from the vehicle undercarriage enter the ground.

PROCEDURAL BMPs SEE GENERAL BEST MANAGEMENT PRACTICES

Spill Control

Acid spills must be neutralized and discharged to a holding tank.

Rain and snowmelt can be cleaned with a wet-dry vacuum, or mopped. Collected material may be discharged to a waste-holding tank, or an oil/water separator connected to a municipal sanitary sewer.

Materials & Waste Management

Segregate wastes that are generated, such as chlorinated from nonchlorinated solvents, oils from solvents, and antifreeze from both oils and solvents in order to minimize disposal costs and facilitate recycling and reuse.

Use high-performance, longer lasting oils.

Do not use waste oil as a dust suppressant.

AUTOMOTIVE SERVICE & REPAIR

BEST MANAGEMENT PRACTICES

Do not use antifreeze as a de-icing agent.

Waste-oil tanks should be used to collect and store petroleum-based fluids drained from vehicles, including used oil, transmission fluid, and brake fluid; they should not be used for collecting cleaning solvents or antifreeze. Tanks should be pumped out by a waste hauler licensed in accordance with federal, state, and local regulations.

Spent oil filters should be recycled for their scrap metal content. A drain rack over a waste oil sink might be used to drain and collect all residual oil prior to disposal.

Antifreeze should be recycled on site or be taken to a recycler. Service contractors may be available to maintain equipment on site and to recycle antifreeze.

Some facilities accept household disposal of antifreeze and waste oil. These must be segregated from business-derived wastes. Household wastes are exempt from RCRA requirements. Segregation will also eliminate the possibility of cross-contamination from the introduction of contaminants in the household wastes.

Lead-acid batteries should be recycled. Store small quantities of lead-acid batteries in acid-resistant tubs. Inspect batteries for cracks or leaks, especially if exposed to freezing temperatures, and store in a container which will hold released material. Large quantities of batteries should be stored in an isolated area with no floor drains, or floor drains directed to sumps connected to a dedicated holding tank. Storage areas should be sealed with an acid-resistant material and have a containment berm. Batteries stored on pallets must not be stacked higher than 3 to 5 feet, and should be covered and stored within an enclosed area and protected from freezing temperatures.

Inspect damaged vehicles to be serviced for leaks; use drip pans, isolated from floor drains or other possible pathways to the environment.

Have oil/grit separators cleaned every 6 - 12 months by a waste hauler licensed in accordance with federal, state, and local regulations. Maintain proper water level in separator to prevent pass-through of oils and other floatables.

Send waste solvent to a waste exchange for further reuse and recycling.

Wring out solvent rags and soaked adsorbent pads and booms for reuse, being careful to minimize human contact.

Waste paints, thinners, paint sludges and solids should be collected and drummed and disposed of according to federal and state regulations.

Scrap metal parts, or other parts which were in contact with lubricant, must be stored in enclosed containers indoors or in areas secured from stormwater accumulation. Dumpsters containing scrap metal should have drain plug in place and be covered. Preferably, they should be located on a concrete pad with a separate collection catch basin, which is pumped out periodically.

AUTOMOTIVE SERVICE & REPAIR

BEST MANAGEMENT PRACTICES

Trial-test recycling equipment to ensure compatibility with materials used and usable recycled product.

Regular inspection and maintenance schedules should address oil and grit separators, catch basins, and vehicle storage areas.

Clean hands with waterless cleaners and dispose of waste properly with hazardous waste, then wash hands.

Store wastes indoors in covered areas to prevent moisture from seeping in.

APPENDIX A

Summary of Waste Characterizations and Pathways for Ground-Water Contamination For the Facilities Covered

BEST MANAGEMENT PRACTICES FOR FACILITIES USING CLASS V UIC WELLS

SUMMARY OF WASTE CHARACTERIZATIONS AND PATHWAYS FOR GROUND-WATER CONTAMINATION

| TYPE OF FACILITY | WASTE CHARACTERIZATION | PATHWAYS FOR GROUND-WATER CONTAMINATION |
|-----------------------------|--|--|
| Appliance Service Shops | Household cleaners, abrasives, wastewaters from cleaning operations, degreasers, solvents, metal polishes, paints, paint solvents, paint removers, strong acid- or alkali-based rust removers | Discharges to dry wells; dumping spent materials outside; improperly stored waste oils; discarded oily metal parts in uncovered drums or dumpsters; floor drains; discharging spent materials into septic systems |
| Automotive Service & Repair | Oils, fuels, additives, antifreeze, degreasing solvents, steam-cleaning wastewaters, floor washdown wastewaters, radiator flushing wastewaters, paint solvents, used paints, paint removers, cleaners, kerosene, mineral spirits, detergents, metals, road salts | Floor drains to dry wells; discharges to septic systems; leaks and spills; illegal dumping; uncovered or improperly stored drums and dumpsters; servicing or repairs done in unprotected areas; washdown swept outside of facility; discharges to storm drains; poor general housekeeping and inventory control; no contract with waste oil and antifreeze hauler; improper storage and disposal of batteries and battery acids |
| Beauticians | Surfactants, dyes, nail care solvents, hair clippings | Poorly designed septic systems; dumping of undiluted chemicals down drains |
| Dry Cleaning | Solvents, spent filter cartridges, still residues or bottoms, cooked powder residues, machine lint and dust, spotting board residues, contaminated still cooling water, vapor condensate, solvent-laden water from water separator | Poor housekeeping; improper storage and handling of barrel and storage areas; outside areas contaminated from vapor condensate; dumping of water from separator; discharges of cooling waters to ground or septic systems; improper collection, storage and disposal of residues, bottoms, and lint; illegal connections to storm drains; improper vapor recovery or inefficient still equipment; corroded plumbing in cast concrete flooring and walls; leaks and spills; floor drains to dry wells |
| Funeral Homes | Bodily fluids, formaldehyde, alcohols, surfactants, organic dyes | Concentrated discharges to septic systems; improper septic system design |
| Furniture Stripping | Rinsewaters, spent stripping solutions and sludges, paints and other finishes, solvents used for thinning paints and cleaning painting equipment, paint solids, solvent-soaked rags and paint residues, caustic tank solutions | Improper storage and disposal of rinsewaters and stripping solutions; illegal discharges to septic systems; leaks and spills; pressure rinsing of dipped furniture outside or in uncontained areas; floor drains to dry wells |
| Machine & Welding Shops | Machine shops: metal grinding sludges, oil-laden metal shavings and chips, cooling and lubricating oils, cooling waters, acids & cyanides & other salts from heat treating, cleaning and degreasing solvents, still bottoms, solvent soaked rags, surfactants, caustic solutions Welding: metal slag and tab ends, quenching or cooling waters, emulsified oils, solvents and solutions for cleaning and degreasing of parts, paints, thinners, primers, solvents | Machine shops: improper handling and disposal; leaks and spills; storage of oil-laden metal by-products in uncovered or unplugged leaking drums and dumpsters; cleaning of parts outside or in uncontained areas; discharges to septic systems; floor drains to dry wells Welding: floor drains to dry wells; leaks and spills, performing degreasing and/or cleaning in sinks discharging to septic systems or outside in uncontained areas |

Appendix N

Glossary of Terms

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Glossary of Terms

Class V Injection Wells. Injection wells that are not included in Classes I through IV, as defined in 40 CFR 144.4, are considered to be Class V wells. These Class V wells are typically shallow wells used to place a variety of non-hazardous fluids (as defined under the Resource Conservation and Recovery Act) directly below the land surface.

Community Water Systems (CWS). A public water system that serves at least 15 service connections used by year-round residents of the area served by the system or regularly serves at least 25 year-round residents.

Direct Implementation (DI) States. States that do not seek the responsibility for implementing a law or fail to demonstrate that they meet EPA's minimum requirements, for which EPA is required by law to prescribe and directly implement a program for these States.

Dry Well. A bored, drilled, or driven shaft or a dug hole whose depth is greater than its largest surface dimension, which is completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

Ground Water Protection Areas. Geographic areas near and/or around community and non-transient non-community water systems that use ground water as a source of drinking water. These areas are delineated and assessed under Section 1453 (Source Water Assessment and Protection Programs) of the Safe Drinking Water Act and are also referred to as source water protection areas, source water assessment areas, and ground water areas by different States. (Note: Source water protection areas for transient non-community water systems delineated under Section 1453 of the Safe Drinking Water Act are not explicitly included in the Class V Rule as ground water protection areas.)

Large-Capacity Cesspools. Dry wells that receive untreated sanitary waste containing human excreta, and which sometimes have an open bottom and/or perforated sides. Large-capacity cesspools serve multiple dwellings and community or regional establishments, and have the capacity to serve more than 20 persons a day.

Maximum Contaminant Level (MCL). In the Safe Drinking Water Act, an MCL is defined as "the maximum permissible level of a contaminant in water which is delivered to any user of a public water system."

Motor Vehicle Waste Disposal Wells. Dry wells or septic tank and leachfield combinations that receive or have received fluids from motor vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work.

Non-Community Water System (NCWS). A public water system that is not a community water system. There are two types of NCWSs: transient and non-transient.

Non-Endangerment of Underground Sources of Drinking Water. Prohibition of movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR 141 or adversely affect public health.

Non-Transient Non-Community Water Systems (NTNCWS). Water systems that are not community systems and regularly serve at least 25 of the same non-resident persons per day for more than 6 months per year. Non-transient non-community systems typically are schools, offices, churches, factories, etc.

Other Sensitive Ground Water Areas. Areas that are not designated as ground water protection areas as specified in the Class V Rule, but are critical areas in the protection of underground sources of drinking water from contamination. These areas may include highly productive aquifers that supply only transient non-community water systems or private wells, areas overlying sole-source aquifers, aquifer recharge areas, karst aquifers, or other hydrogeologically vulnerable areas.

Point of Injection. The point of injection for a Class V well is the last accessible sampling point before the release of waste fluids into the subsurface environment. For example, the point of injection of a septic system might be the distribution box – the last accessible sampling point before the waste fluids drain into the leachfield and the underlying soils. For a dry well, it is likely to be the well bore itself.

Primacy States. States that have the responsibility for ensuring a law is implemented, and have the authority to enforce the law and related regulations. States have adopted rules at least as stringent as Federal regulations and have been granted primary enforcement responsibility.

Public Water System (PWS). A water system that provides water to the public for human consumption through pipes or other conveyances, if such system has at least 15 connections or regularly serves at least 25 individuals.

Sanitary waste. Liquid or solid waste originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these waste may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

Septic System. A “well” that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

Sole Source Aquifer. An aquifer that has been designated by EPA, under Section 1424(e) of the Safe Drinking Water Act, because the aquifer is a “sole or principal drinking water source” for an area where contamination of the aquifer could create a significant hazard to public health.

Source Water Protection Area (SWPA). The area delineated by the state for a public water system (PWS) or including numerous PWSs, whether the source is ground water or surface water or both, as part of the state SWAP approved by EPA under section 1453 of the Safe Drinking Water Act.

Subsurface fluid distribution system. An assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

Susceptibility Analysis. An analysis used to determine, with a clear understanding of where the significant potential sources of contamination are located, the susceptibility of the PWS(s) in the source water protection area to contamination from these sources.

Transient Non-Community Water Systems (TNCWS). Water systems that are not community systems and serve 25 non-resident persons per day for 6 months or less per year. Transient non-community systems typically are restaurants, hotels, large stores, etc.

Underground Source of Drinking Water (USDW). An aquifer or a portion of an aquifer that (1) supplies a public water system, or (2) contains a sufficient quantity of ground water to supply a public water system and currently supplies drinking water for human consumption or contains fewer than 10,000 mg/l total dissolved solids, and is not an exempted aquifer.

Wellhead Protection Area (WHPA). The surface and subsurface area surrounding a well or well field, supplying a PWS, through which contaminants are reasonably likely to move toward and reach such water well or well field.

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