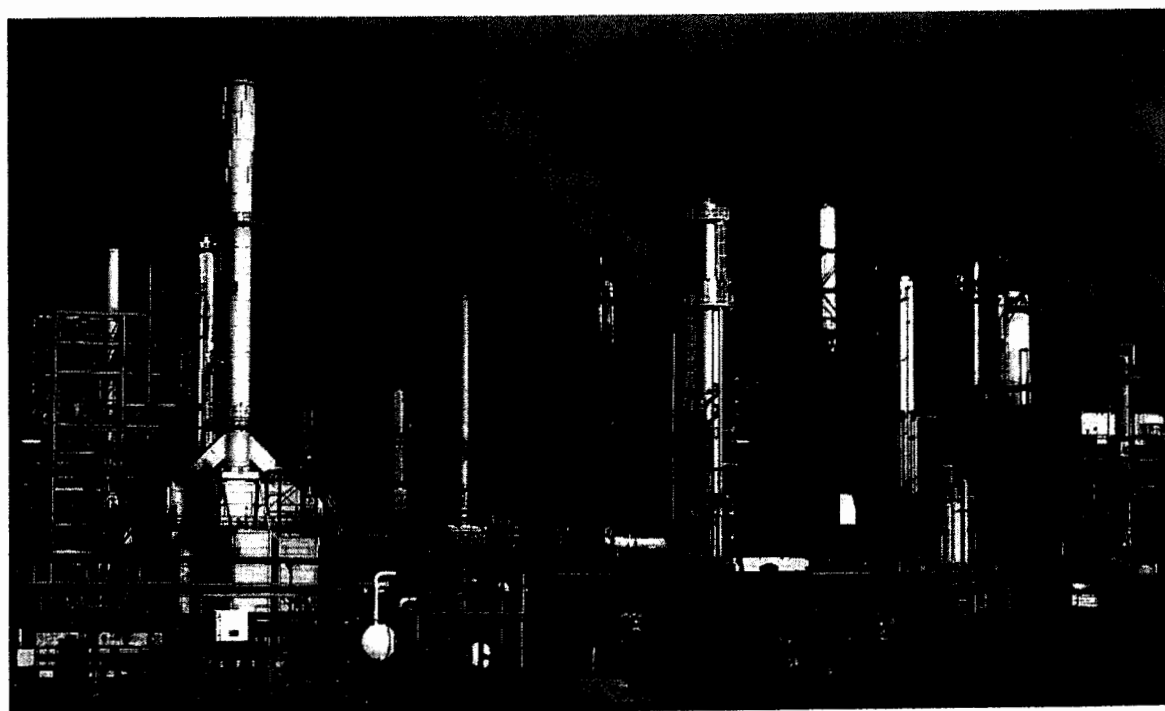


NAVAJO REFINERY



NAVAJO REFINING COMPANY, L.L.C.
UIC CLASS I HAZARDOUS WASTE WELL
RULEMAKING

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**CALENDAR: UIC CLASS I HAZARDOUS WASTE WELL
PROPOSED RULEMAKING**

Event	Preferred Deadline¹	Absolute Deadline²
Navajo prepares initial draft of rule	Completed	Completed
Navajo seeks comments on draft rule from interested stakeholders	During the period of: September-November 12, 2014	September-November 19, 2014
Navajo submits Petition for Rulemaking to WQCC ³	November 17, 2014	November 24, 2014
WQCC meeting (to determine whether a hearing on the proposed rule is necessary) ⁴	December 9, 2014 ⁵	December 9, 2014
WQCC publishes notice of the hearing ⁶	February 27, 2015	March 31, 2015
WQCC hearing on proposed rulemaking ⁷	April 2015 ⁸	April 2015
WQCC issues decision on the rulemaking	April 2015	n/a
Appeals period ends for the WQCC decision on the proposed rulemaking	May 2015	n/a
WQCC files rule with State Records Center ⁹	May 2015	n/a
The New Mexico records center maintains original copy and submits the rule to published with the New Mexico Register ¹⁰	May 1 st or May 16 th 2015 ¹¹	
Publication of rule change in the New Mexico Register	May 15 th or June 2 nd 2015	n/a
New Regulation Effective	Date of publication in NM Register, unless otherwise provided by law ¹²	n/a

¹ The preferred deadline dates are realistic but optimistic and are driven by the best case scenario.

² The absolute deadline dates are the latest possible dates to complete the referenced events.

³ WQCC Guidelines, Section 301(A).

⁴ WQCC Guidelines, Section 301(B). Of course, this step and the steps that follow only apply if WQCC decides to hold a hearing

⁵ The WQCC currently does not have meeting scheduled for December. See Water Quality Control Commission Website: <http://www.nmenv.state.nm.us/wqcc/meetings.html>.

⁶ WQCC Guidelines, Section 302(A).

⁷ To be governed in accordance with WQCC Guidelines.

⁸ The WQCC currently does not have any potential hearing dates marked on its calendar for 2015. See Water Quality Control Commission Website: <http://www.nmenv.state.nm.us/wqcc/meetings.html>.

⁹ NMSA §14-4-4.

¹⁰ NMSA §§14-4-3; 14-4-7.1.

¹¹ The New Mexico Register has not yet indicated the submittal deadlines and publication dates for 2015, however since the publications are issued bi-monthly there is a strong likelihood that these dates will be accurate. See <http://www.nmcpr.state.nm.us/nmregister/> for the list of 2014 submittal deadlines and publication dates.

¹² NMSA §14-4-5.

NAVAJO REFINING COMPANY L.L.C.

UIC Class I Hazardous Waste Injection Well Proposed Rulemaking

STATES' CLASS I HAZARDOUS WASTE WELL REGULATIONS

STATE	RELATION TO FEDERAL REGS:	REGULATIONS:
AK	Alaska authorizes Class I hazardous waste wells without reference to federal regulations.	18 Alaska Admin. Code 63.100-63.130
AR	Arkansas authorizes Class I hazardous waste wells by incorporating federal regulations.	AR Reg. 17.301
CA	California authorizes Class I hazardous waste wells without reference to federal regulations.	22 CCR 66268.39.5
CO	Colorado authorizes Class I hazardous waste wells by incorporating federal regulations.	6 CCR 1007-3
DE	Delaware authorizes Class I hazardous waste wells by following the federal regulations.	7 Del.C. Ch. 60 DE Admin Code 7102, 38
FL	New UIC Class I hazardous waste injection wells are banned from construction; existing wells are regulated under federal guidelines.	62-528.400 F.A.C
IL	Illinois' authorizes Class I hazardous waste wells by incorporating federal regulations. It has additional state-specific requirements including state disposal fees and recordkeeping rules.	35 Ill. Adm. Code 704.101 to 704.289; 730.101 to 730.195
IN	Indiana authorizes Class I hazardous waste wells by incorporating federal regulations. It has some further requirements for underground injection well classifications for oil and gas facilities and for construction permits for underground wastewater disposal facilities.	329 IAC 3.1-10.3
KS	Kansas authorizes Class I hazardous waste wells by following the federal regulations, with additional requirements for modification and reissuance of permits.	K.A.R. § 28-46-1; §28-46-30
KY	Kentucky generally follows the federal permitting requirements for underground injection wells. A facility using an underground injection well for hazardous waste disposal must also comply with state standards for corrective action, closure, and groundwater monitoring.	401 KAR 38:060
LA	Louisiana's underground injection well rules incorporate the federal requirement, and add more stringent well disposal restrictions, permit-by-rule requirements, and facility fees.	La. Admin. Code. Title 43: XVII, §201-215
MI	Michigan authorizes Class I hazardous waste wells by following the federal regulations.	Mich. Admin. Code R 299.9502
MS	Mississippi prohibits Class I hazardous waste injection wells, except such wells located on the generation site of hazardous waste generated in the production of oil or gas or in a commercial or manufacturing operation.	11 Miss. Admin. Code Pt. 6, Ch. 1, Rule 1.1.4 (a)(1)
MT	Montana authorizes Class I hazardous waste wells by incorporating federal regulations.	Mont. Admin. R. 14.53.102
ND	North Dakota authorizes Class I hazardous waste wells by incorporating federal regulations.	N.D. Admin. Code 33-25-01

OH	Ohio is authorizes Class I hazardous waste wells with some reference to federal regulations.	OAC 3745-34-09; 3745-34-51 through 3745-34-63
OK	Oklahoma authorizes Class I hazardous waste wells without reference to federal regulations.	Okla. Admin. Code 252:652-1
TX	Texas permits Class I hazardous waste wells without reference to federal regulations.	30 TAC §331.61-.68
UT	Utah authorizes Class I hazardous waste wells by incorporating federal regulations.	UAC R. 317-7
WY	Wyoming authorizes Class I hazardous waste wells without reference to federal regulations.	WY Rules and Regulations Env WQ Chapter 13

PETITION TO AMEND 20.6.2.5000 NMAC
AND REQUEST FOR HEARING

Pursuant to the New Mexico Water Quality Act ("WQA"), NMSA 1978, §§ 76-6-1 to 76-6-17 (2009) and Section 301 of the *Guidelines for Water Quality Control Commission Hearings*, Navajo Refining Company, L.L.C. ("Navajo") petitions the Commission to adopt new rules authorizing Class I underground injection control wells for hazardous waste ("Class I hazardous waste injection wells") generated by the oil and gas industry, including refineries ("oil and gas industry"), 20.6.2.5300 to 20.6.2.5305. The new rules would incorporate existing federal regulations, promulgated under the authority of the Safe Drinking Water Act ("SWDA") for Class I hazardous waste injection wells. Navajo's proposed rule, attached as Attachment 1, would amend 20.6.2.5004 and add new text as 20.6.2.5300 through 20.6.2.5305.

I. Statement of Reasons for the Rule Change

Navajo operates an oil refinery in Artesia, New Mexico and, for the reasons stated in this petition, it desires to use an injection well to dispose of wastewaters generated in its refining process that may be classified as hazardous. To do so, it seeks by this petition to authorize and to implement a hazardous waste injection well permitting regime that adopt federal requirements for such wells.

Authorizing Class I hazardous waste injection wells and adopting a permitting regime for those wells used in the oil and gas industry will provide a number of benefits to both the State and to refineries and others in the oil and natural gas industry. These benefits include the following:

1. Water conservation: Allowing for permitting of Class I hazardous waste injection wells will promote water reuse and conservation by allowing for extraction and disposal of hazardous constituents in the waste streams generated by the oil and gas industry.

2. Waste minimization: The rulemaking would promote waste minimization. Through water reuse, the final effluent stream that would be sent to a Class I hazardous waste injection well could be materially smaller than a full effluent stream that is typically disposed of now in underground injection control wells for non-hazardous wastes. Wastes generated by those in the oil and gas industry would therefore be minimized.
3. Economic benefits: The proposed rule change would provide a number of economic benefits to communities supporting refineries and other oil and gas operations. Through reuse of water and reduction of fresh water usage in the oil and gas industry, more fresh water is available for use by the surrounding communities and businesses, including agriculture.
4. Preservation of disposal capacity: Because disposal capacity at existing oil and gas industry wells is finite, reducing effluent discharges to those wells preserves refining and disposal capacity. This capacity fosters oil and gas production by allowing for additional crude oil and recovered oil processing.
5. Improved oil and gas industry reliability: The rule will also allow those in the oil and gas industry to improve reliability in their systems and production by allowing the refineries they depend upon to manage any unexpected generation of hazardous waste in the wastewater stream. Currently, refineries must treat wastewaters before disposal so that the waters are not hazardous. This treatment process can curtail crude oil throughput. Creating disposal capacity for hazardous wastewaters will allow refineries to maintain greater crude oil throughput, avoiding adverse financial consequences to their suppliers and the State.

II. Oil and Gas Industry Waste Management in New Mexico

Oil production requires that companies in the oil and gas industry complete a number of processes in order to transform crude oil and recovered oil (i.e., oil recovered from oil-bearing residuals generated in the oil and gas industry, specifically refineries, as a waste minimization practice) into refined products. During these processes, the oil and gas industry, including refineries, uses significant quantities of water and generates wastewater streams that can be recycled, especially if certain chemical constituents can be removed from these streams before reuse. Some of these chemical constituents could be considered hazardous waste if present in sufficient concentrations. Class I hazardous waste injection wells provide a demonstrated means for safely disposing of such wastes in deep geologic formations that are isolated from aquifers suitable for use as water supplies. The deep formations used for injection would be substantially below aquifers used for fresh drinking and agricultural/industrial water supplies. The proposed rules would require that any injection of fluids by the well occur beneath the lowermost formation that contains 10,000 milligrams per liter or less of total dissolved solids ("TDS").

Since 2001, Class I hazardous waste injection wells have not been authorized in New Mexico, but elsewhere, under federal law, the United States Environmental Protection Agency ("EPA") allows disposal of hazardous waste by use of Class I hazardous waste injection wells. The federal regulations were promulgated in 1983 and have a demonstrated history of protection of human health and the environment. In 1984 New Mexico assumed primacy over the Safe Drinking Water Act program. After New Mexico assumed primacy the federal regulations changed to impose different requirement for Class I hazardous waste injection wells. New Mexico never amended its regulations to incorporate the changes made in the federal regulations. Therefore, the State's pre-2001 regulations did not impose different requirements for hazardous

waste wells. In 2001, New Mexico eliminated the regulation allowing this practice because it had not been used and no such wells had been drilled.

The proposed amendment does not alter the responsibilities of the New Mexico Environment Department ("NMED") or the Oil Conservation Division ("OCD") for administering the programs currently delegated to the State by the EPA under the SDWA. Since this proposed rule only applies to the oil and gas industry, the requirements of the proposed rule (adopting the federal EPA regulations) would be administered by OCD. OCD currently administers the Underground Injection Control well program for oil and gas related industries, and is authorized to administer the permitting regime for Class I hazardous waste injection wells pursuant to the EPA's delegation to New Mexico under the SDWA.

As described fully below, Class I wells are a safe and economical way to dispose of wastewater. Federal regulations are comprehensive, imposing exacting requirements for the selection of the site, well construction standards, and the day-to-day operations to ensure that the USDW is safe and secure. The proposed rulemaking seeks to adopt the stringent federal UIC standards. The probability of Class I well failures, both nonhazardous and hazardous, has been calculated and demonstrated to be very low. For these reasons, the Commission should adopt the proposed rules authorizing Class I underground injection control wells for hazardous wastewaters in New Mexico.

III. Background of Class I Injection Wells

Wastewater is an unavoidable byproduct of the manufacturing processes that create thousands of products we use every day. While industries continue to research and implement ways to reduce waste by recycling and improving the manufacturing processes, wastes are still generated and require disposal.

Class I underground injection wells represent a technically sound and safe disposal option for high-volume wastewaters. Class I underground injection wells present a low risk wastewater disposal option, as demonstrated by stringent design and operating requirements and a history of safe disposal that spans many decades.

(a) Regulatory Framework for UIC Wells

“Underground injection” refers to the placement of fluids, often wastewater, underground through a well bore. As the Environmental Protection Agency (“EPA”) Regional Office for Region 6 found, “some waste fluids are generated in such volumes as to make treatment economically impractical. If properly constructed, and operated, injection wells are by far the best way to dispose of these waste fluids.”¹ Not allowing underground injection wells “removes a safe, economically proven technology by which wastes can be effectively addressed.”²

As part of the federal Safe Drinking Water Act (“SDWA”) of 1974, a federal Underground Injection Control Program (“UIC Program”) was established.³ Since ground water is a major source of drinking water in the United States, the UIC Program requirements were designed to prevent ground water contamination. Most ground water used as drinking water today contains less than 3,000 milligrams per liter of total dissolved solids (“TDS”). The UIC

¹ ENVIRONMENTAL PROTECTION AGENCY, *Frequently Asked Questions About the Underground Injection Control Program*, <http://www.epa.gov/Region6/water/swp/uic/faq3.htm#banned>.

² *Id.*

³ 42 U.S.C. §300h.

Program protects waters with significantly higher mineral concentrations to ensure that all water with the potential to be treated and used as drinking water in the future is protected.

New Mexico, like other states and the federal government, has a reasonable objective to protect any underground source of drinking water ("USDW"). A USDW is defined by EPA as an "aquifer or its portion which supplies any public water system or contains a sufficient quantity of ground water to supply a public water system, and either currently supplies a public water system, or contains less than 10,000 milligrams per liter of [TDS] and is not an exempted aquifer."⁴ In essence, a USDW is a collection of clean water large enough that it could potentially serve the public.

(b) Class I Wells

There are six classes of underground injection wells. These classes are based on the types of fluids injected, and the technical standards for well design and construction, injection depth, and operating and monitoring techniques in order to ensure that wells that serve the same function are designed in a way to protect USDWs.

Class I wells, further classified as hazardous and non-hazardous wells, inject industrial or municipal wastewater far beneath the lowermost source of drinking water. Class I wells are used mainly by the following industries: petroleum refining, metal production, chemical production, pharmaceutical production, commercial waste disposal, food production, and municipal wastewater treatment.⁵

Class I wells inject wastewater into formations without suitable water to extract as a source of drinking water and that are located thousands of feet below the land surface. The geological formation into which the wastewater is injected, known as the injection zone, must be

⁴ 40 C.F.R. § 144.3

⁵ ENVIRONMENTAL PROTECTION AGENCY, *Industrial & Municipal Waste Disposal Wells (Class I)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

demonstrated to be sufficiently porous and permeable so that the wastewater can enter the rock formation without an excessive buildup of pressure. The injection zone is typically beneath a large, relatively non-permeable layer of rock, known as the confining zone, which along with the natural force of gravity, will hold injected fluids in place and restrict them from moving upward toward a USDW. A diagram depicting the general schematic of a Class I well is attached to this rulemaking petition as Attachment 2.

There are currently approximately 550 Class I injection wells in the United States, approximately 121 of these wells (22%) are Class I hazardous waste injection wells.⁶ Most Class I wells are located in EPA Region 6 (comprised of Arkansas, Louisiana, New Mexico, Oklahoma, Texas, and 66 Native American Tribes).⁷ At least 21 states currently have Class I injection wells.⁸ Texas has the greatest number of Class I wells, including hazardous waste wells, followed by Louisiana.⁹ Florida and Kansas also have a large number of Class I wells.¹⁰

(c) Federal Regulations Regarding Class I Wells

Federal regulations strictly regulate the creation and maintenance of Class I wells. EPA requires that Class I wells be located in geologically stable areas that are free of fractures or faults through which injected fluids could travel to drinking water sources.¹¹ Well operators must also show that there are no wells or other artificial pathways between the injection zone and USDWs through which fluids can travel. The site-specific geologic properties of the subsurface around the well offer another safeguard against the movement of injected wastewaters to a USDW.

⁶ *Id.*

⁷ ENVIRONMENTAL PROTECTION AGENCY, *EPA Region 6 (South Central)*, http://water.epa.gov/type/groundwater/uic/wells_class1.cfm.

⁸ EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 3(March 2001).

⁹ *Id.*

¹⁰ *Id.*

¹¹ 40 CFR §146.62.

All Class I wells are designed and constructed to prevent the movement of injected wastewaters into USDWs. Their stringent, multi-layer construction¹² has many redundant safety features. One of these features is the well's casing, which prevents the borehole from caving in. The casing is made out of a corrosion-resistant material such as steel or fiberglass-reinforced plastic. It consists of an outer surface casing, that extends the entire depth of the well, and an inner "long string" casing that extends from the surface to or through the injection zone. The innermost layer of the well, the injection tubing, brings injected wastewater from the surface to the injection zone.

All of the materials that injection wells are made of are corrosion-resistant and compatible with the wastewater and the formation rocks and fluids into which they come in contact. A constant pressure is maintained in the space and is continuously monitored to verify the well's mechanical integrity and proper operational conditions.¹³ Trained operators are responsible for day-to-day injection well operation, maintenance, monitoring, and testing.¹⁴ In addition to monitoring the well operation, operators of hazardous waste wells are required to develop and follow a waste analysis plan for monitoring the physical and chemical properties of the injected wastewater.¹⁵

(d) Safety Factors and Safety Record

Because these Class I wells inject waste far below the deepest possible USDW, there is very little chance of any negative effects on potentially usable ground water. In fact, in its March 2001 Study of Class I wells the, EPA said that "the probability of loss of waste confinement due to Class I injection has been demonstrated to be low" and "existing Class I

¹² Wells typically consist of three or more concentric layers of pipe: surface casing, long string casing, and injection tubing. Class I hazardous wells must have 3 layers of casing. [40 CFR 146.65(c)].

¹³ 40 CFR §146.67.

¹⁴ 40 CFR § 146.13(b).

¹⁵ 40 CFR §146.68 (a).

regulatory controls are strong, adequately protective, and provide an extremely low-risk option in managing the wastewaters of concern.”¹⁶ In other words, the deep geologic formations that receive the waste (“the injection zone”), the related confining layers above the injection zone, and the many layers of protection required in the construction, operation, and monitoring of wells, provide many safeguards against upward fluid movement, effectively protecting USDWs.

Class I injection wells that meet EPA’s design and operating requirements are well studied and pose minimal risks. In 1998, scientists quantitatively estimated the risk of waste containment loss as a result of various sets of events associated with Class I hazardous waste wells.¹⁷ According to the study, because of the redundant safety systems in a typical Class I well, loss of containment would require a series of improbable events to occur in sequence. As a result, the calculated probability of containment loss resulting from each of the scenarios examined ranges from one-in-one-million to one-in-ten-quadrillion.¹⁸

In the field, the probability of Class I well failures, both non-hazardous and hazardous, has also been demonstrated to be very low. Many early Class I failures were a result of historic practices that are no longer permissible under the federal UIC regulations, such as improper well construction or improper well closure upon cessation of operations. Class I wells have redundant safety systems and several protective layers; an injection well would fail only when multiple systems fail in sequence without detection. In the unlikely event that a well would fail, the geology of the injection and confining zones serves as a final safety mechanism to prevent movement of wastewaters to USDWs. Injection well operators invest millions of dollars in the

¹⁶ EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS xiii (March 2001) (emphasis supplied).

¹⁷ Rish, W.A., T. Ijaz, and T.F. Long, *A Probabilistic Risk Assessment of Class I Hazardous Waste Injection Wells*, 1998.

¹⁸ *Id.*

permitting, construction, and operation of wells and even in the absence of UIC regulations would carefully monitor the integrity of the injection operation to safeguard their investments.

Failures of Class I wells are rare. Most failures of mechanical integrity are internal failures, detected by continuous pressure monitoring systems or integrity tests. Any wells that fail are shut down until they are repaired to the satisfaction of the regulatory agency. EPA's study of more than 500 Class I nonhazardous and hazardous wells showed that loss of mechanical integrity contributed to only 4 cases of significant wastewater migration (none of which affected a drinking water source) over several decades of operation.¹⁹ This safety record can be attributed to the rigorous requirements for monitoring and for ensuring that the well materials are compatible with the wastewater injected.

(e) Monitoring Requirements

Finally, Class I injection wells are continuously monitored and controlled, usually with sophisticated computers and digital equipment, which provide real-time data and information to the well operator. Thousands of data points about the pumping pressure for fluid disposal, the pressure in the space between the injection tubing and the well casing (that shows there are no leaks in the well), and data on the fluid being disposed of, such as its temperature and flow rate, are monitored and recorded each day.²⁰

Alarms are connected to sound if anything out of the ordinary happens, and if unusual pressures are sensed by the monitoring equipment, the well pump automatically shuts off.²¹ Disposal in the well does not resume until the cause of the unusual event is investigated, and the

¹⁹ EPA, CLASS I UNDERGROUND INJECTION CONTROL PROGRAM: STUDY OF THE RISKS ASSOCIATED WITH CLASS I UNDERGROUND INJECTION WELLS 41 (March 2001).

²⁰ 40 CFR §146.67(a).

²¹ 40 CFR §146.67(f).

people responsible for operating the well and the regulatory agencies both are sure that no environmental harm has been or will be done by well operations.²²

The wells are also tested regularly, using special tools that are inserted into the well to record data about the well and surrounding rock formations. Regulators review all the data about the well operations, monitoring and testing frequently, and inspecting the well site to make sure everything is operating according to the requirements put in place to protect drinking water sources.

IV. Summary of Amendments

1. Navajo proposes the following change to 20.6.2.5004(A)(3) NMAC:

Delete the words “hazardous or” from the regulation. This would authorize the use of Class I hazardous waste injection wells.

2. Navajo proposes the addition of 20.6.2.5300

This new section sets forth the requirements for all Class I hazardous waste injection wells. It specifies that Class I hazardous waste injection wells are subject to the same permitting procedures as Class I non-hazardous waste injection wells. It limits Class I hazardous waste injection wells to use in the oil and gas industry. Additionally, it incorporates by reference the subsequent sections (20.6.2.5301 NMAC through 20.2.6.5305 NMAC) that set forth specific requirements for Class I hazardous waste injection wells.

3. Navajo proposes the addition of 20.6.2.5301

This new section incorporates by reference the federal regulations that set forth the general requirements for Class I hazardous waste injection wells, 40 C.F.R. Section 144.14. This federal regulation sets forth specific notification, recordation, reporting and training requirements for operators of Class I hazardous waste injection wells.

²² 40 CFR 146.67(h).

4. Navajo proposes the addition of 20.6.2.5302

This new section incorporates by reference 40 C.F.R. Sections 144.60 through 144.70, the federal regulations that set forth the requirements for financial responsibility for owners and operators of Class I hazardous waste injection wells. These regulations include financial assurance for plugging and abandonment.

5. Navajo proposes the addition of 20.6.2.5303

This new section incorporates by reference 40 C.F.R. 146.61 through 146.73, the federal regulations that set forth the specific requirements and conditions for Class I hazardous waste injection wells. These regulations include construction requirements, testing requirements, operating requirements, monitoring requirements, reporting requirements, closure requirements, and post-closure requirements for Class I hazardous waste injection wells.

6. Navajo proposes the addition of 20.6.2.5304

This new section incorporates by reference 40 C.F.R. Part 148, the federal regulations that set forth the restrictions on Class I hazardous waste injection wells, including the specific substances that are prohibited from being injected in Class I hazardous waste injection wells.

7. Navajo proposes the addition of 20.6.2.5305

This new section clarifies the terms, references, and definitions used in the federal regulations. These are clarified in order to vest authority into the relevant state agency that has been delegated primacy by the federal program.

V. Request for Hearing

Navajo requests that the Commission schedule a rulemaking hearing to consider the proposed rule. Navajo requests that the rulemaking hearing to be scheduled to begin on April __,

2015. This hearing date will allow the Commission to conduct the hearing in conjunction with the Commission's April 2015 meeting.

It is anticipated that the rulemaking hearing will take approximately one day or less.

Respectfully Submitted,

Navajo Refining Company, L.L.C.

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 1

NAVAJO REFINING COMPANY'S
PROPOSED HAZARDOUS WASTE INJECTION WELL RULE

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 2 GROUND AND SURFACE WATER PROTECTION

20.6.2.5000 UNDERGROUND INJECTION CONTROL:
[12-1-95; 20.6.2.5000 NMAC - Rn, 20 NMAC 6.2.V, 1-15-01]

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:
A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any radioactive waste into a well is prohibited, except as provided in this Subsection.

(a) Class I radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.
[20.6.2.5004 NMAC - N, 12-1-01]

20.6.2.5300 REQUIREMENTS FOR CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided for in 20.6.2.5301 through 20.6.2.5305, all Class I hazardous waste wells are subject to the permit requirements for all Class I non-hazardous waste wells, including the notification and general operation requirements set forth in 20.6.2.5003 NMAC, the discharge permit requirements for Class I non-hazardous waste wells set forth in 20.6.2.5101 NMAC, the pre-construction requirements for Class I non-hazardous waste wells set forth in 20.6.2.5102 NMAC, and the designated aquifer requirements set forth in 20.6.2.5103 NMAC.

B. Class I hazardous waste wells are only authorized for use in the oil and gas industry.

C. Class I hazardous waste injection wells must meet the requirements of Sections 20.6.2.5300 through 20.6.2.5305.

D. The New Mexico Oil Conservation Division will administer and oversee all permitting requirements required in Sections 20.6.2.5300 through 20.6.2.5305.

20.6.2.5301 GENERAL PROGRAM REQUIREMENTS FOR WELLS INJECTING HAZARDOUS WASTE:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Section 144.14 through July 1, 2014 are hereby incorporated by reference.

20.6.2.5302 FINANCIAL RESPONSIBILITY: CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 144.60 through 144.70, through July 1, 2014, are hereby incorporated by reference.

20.6.2.5303 CONDITIONS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 144.51, through 144.55, through July 1, 2014 that pertain to Class I hazardous waste injection wells are hereby incorporated by reference.

20.6.2.5303 CRITERIA AND STANDARDS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Sections 146.61, through 146.73 through July 1, 2014 are hereby incorporated by reference.

20.6.2.5304 HAZARDOUS WASTE INJECTION RESTRICTIONS:

A. Except as otherwise provided, the federal regulations set forth by the Environmental Protection Agency in 40 C.F.R. Part 148 through July 1, 2014 are hereby incorporated by reference.

20.6.2.5305 MODIFICATIONS, EXCEPTIONS AND OMISSIONS:

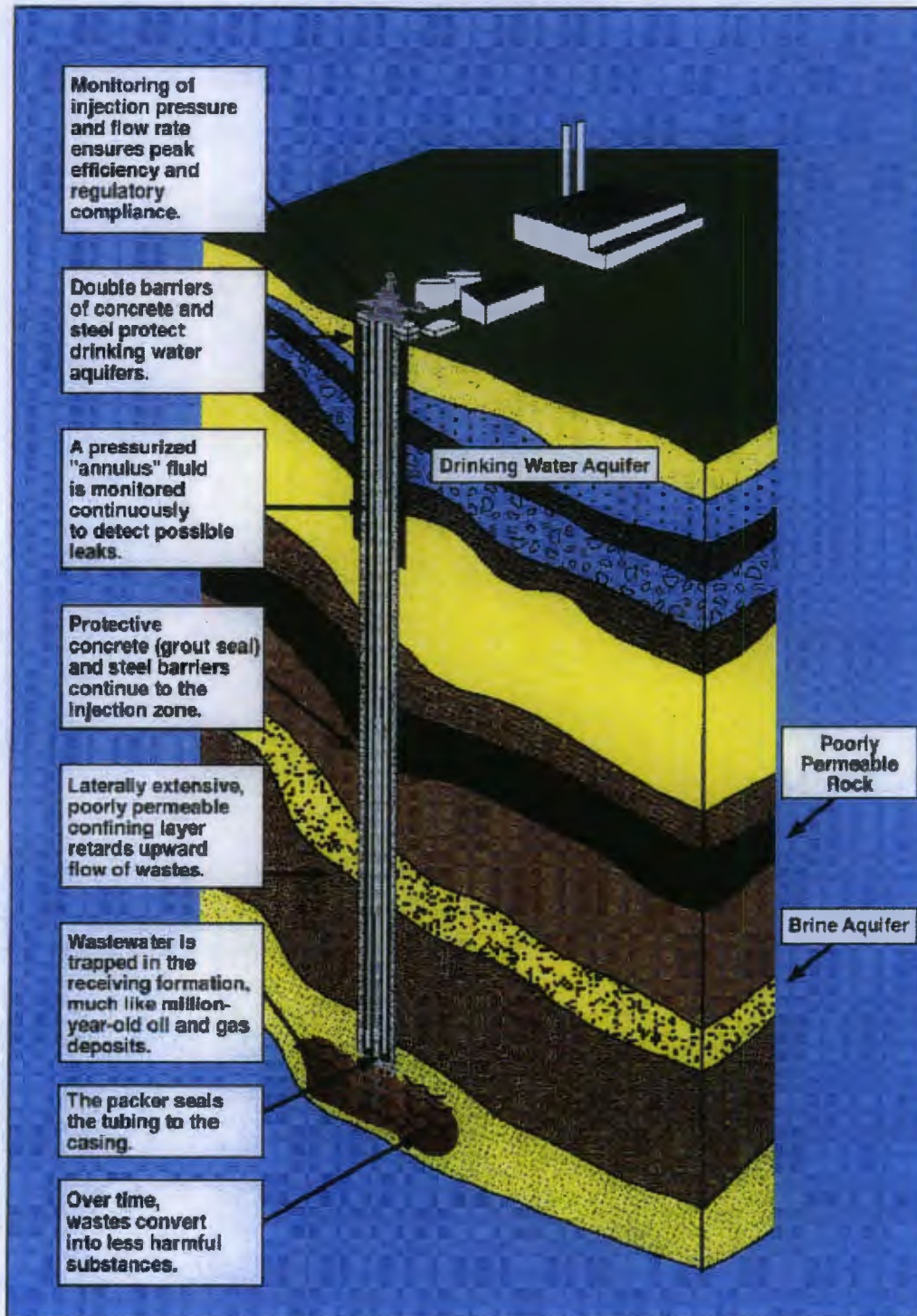
A. Except as otherwise provided, the following modifications, exceptions and omissions are made to the incorporated federal regulations:

- (1) "Director" or "regional administrator means the Director of the Oil Conservation Division or his/her designee.
- (2) "RCRA" (Resource Conservation and Recovery Act, as amended) means the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 through 74-4-14 (as amended).
- (3) "SDWA" (Safe Drinking Water Act, as amended) 42 U.S.C. 300f *et seq.* means the Safe Drinking Water Act, the implementation of which is delegated to the New Mexico Environment Department.

B. Wherever there is a requirement in any of the federal regulations incorporated into this Section to report an emergency situation, the requirement shall be construed to mean that the party required to report shall report the incident to the Oil Conservation Division's emergency response number.

WATER QUALITY CONTROL COMMISSION HEARING PETITION
ATTACHMENT 2

CLASS I INJECTION WELL DIAGRAM



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(d) Whenever the Director learns that a Class V well may be otherwise adversely affecting the health of persons, he or she may prescribe such actions as may be necessary to prevent the adverse effect, including any action authorized under paragraph (c) of this section.

(e) Notwithstanding any other provision of this section, the Director may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water system or underground source of drinking water may present an imminent and substantial endangerment to the health of persons. If the Director is an EPA official, he must first determine that the appropriate State and local authorities have not taken appropriate action to protect the health of such persons, before taking emergency action.

[48 FR 14189, Apr. 1, 1983, as amended at 52 FR 20676, June 2, 1987; 75 FR 77288, Dec. 10, 2010]

§ 144.13 Prohibition of Class IV wells.

(a) The following are prohibited, except as provided in paragraph (c) of this section:

(1) The construction of any Class IV well.

(2) The operation or maintenance of any Class IV well not in operation prior to July 18, 1980.

(3) The operation or maintenance of any Class IV well that was in operation prior to July 18, 1980, after six months following the effective date of a UIC program approved or promulgated for the state.

(4) Any increase in the amount of hazardous waste or change in the type of hazardous waste injected into a Class IV well.

(b) The owner or operator of a Class IV well shall comply with the requirements of § 144.14, and with the requirements of § 144.23 regarding closure of Class IV wells.

(c) Wells used to inject contaminated ground water that has been treated and is being reinjected into the same formation from which it was drawn are not prohibited by this section if such injection is approved by EPA, or a State, pursuant to provisions for clean-up of releases under the Comprehensive

Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601-9657, or pursuant to requirements and provisions under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 through 6987.

(d) *Clarification.* The following wells are not prohibited by this action:

(1) Wells used to inject hazardous waste into aquifers or portions thereof that have been exempted pursuant to § 146.4, if the exempted aquifer into which waste is injected underlies the lowermost formation containing a USDW. Such wells are Class I wells as specified in § 144.6(a)(1), and the owner or operator must comply with the requirements applicable to Class I wells.

(2) Wells used to inject hazardous waste where no USDW exists within one quarter mile of the well bore in any underground formation, provided that the Director determines that such injection is into a formation sufficiently isolated to ensure that injected fluids do not migrate from the injection zone. Such wells are Class I wells as specified in § 144.6(a)(1), and the owner or operator must comply with the requirements applicable to Class I wells.

[49 FR 20181, May 11, 1984, as amended at 67 FR 39593, June 7, 2002]

§ 144.14 Requirements for wells injecting hazardous waste.

(a) *Applicability.* The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest. (See also § 144.13.)

(b) *Authorization.* The owner or operator of any well that is used to inject hazardous waste required to be accompanied by a manifest or delivery document shall apply for authorization to inject as specified in § 144.31 within 6 months after the approval or promulgation of the State UIC program.

(c) *Requirements.* In addition to complying with the applicable requirements of this part and 40 CFR part 146, the owner or operator of each facility meeting the requirements of paragraph (b) of this section, shall comply with the following:

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(1) *Notification.* The owner or operator shall comply with the notification requirements of section 3010 of Public Law 94-580.

(2) *Identification number.* The owner or operator shall comply with the requirements of 40 CFR 264.11.

(3) *Manifest system.* The owner or operator shall comply with the applicable recordkeeping and reporting requirements for manifested wastes in 40 CFR 264.71.

(4) *Manifest discrepancies.* The owner or operator shall comply with 40 CFR 264.72.

(5) *Operating record.* The owner or operator shall comply with 40 CFR 264.73(a), (b)(1), and (b)(2).

(6) *Annual report.* The owner or operator shall comply with 40 CFR 264.75.

(7) *Unmanifested waste report.* The owner or operator shall comply with 40 CFR 264.75.

(8) *Personnel training.* The owner or operator shall comply with the applicable personnel training requirements of 40 CFR 264.16.

(9) *Certification of closure.* When abandonment is completed, the owner or operator must submit to the Director certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in § 144.52(a)(6).

(d) *Additional requirements for Class IV wells.* [Reserved]

§ 144.15 Prohibition of non-experimental Class V wells for geologic sequestration.

The construction, operation or maintenance of any non-experimental Class V geologic sequestration well is prohibited.

[75 FR 77288, Dec. 10, 2010]

§ 144.16 Waiver of requirement by Director.

(a) *When injection does not occur into, through or above an underground source of drinking water,* the Director may authorize a well or project with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required in 40 CFR part 146 or § 144.52 to the extent that the reduction in requirements will not result

in an increased risk of movement of fluids into an underground source of drinking water.

(b) When injection occurs through or above an underground source of drinking water, but the radius of endangering influence when computed under § 146.06(a) is smaller or equal to the radius of the well, the Director may authorize a well or project with less stringent requirements for operation, monitoring, and reporting than required in 40 CFR part 146 or § 144.52 to the extent that the reduction in requirements will not result in an increased risk of movement of fluids into an underground source of drinking water.

(c) When reducing requirements under paragraph (a) or (b) of this section, the Director shall prepare a fact sheet under § 124.8 explaining the reasons for the action.

§ 144.17 Records.

The Director or the Administrator may require, by written notice on a selective well-by-well basis, an owner or operator of an injection well to establish and maintain records, make reports, conduct monitoring, and provide other information as is deemed necessary to determine whether the owner or operator has acted or is acting in compliance with Part C of the SDWA or its implementing regulations.

[58 FR 63895, Dec. 3, 1993]

§ 144.18 Requirements for Class VI wells.

Owners or operators of Class VI wells must obtain a permit. Class VI wells cannot be authorized by rule to inject carbon dioxide.

[75 FR 77288, Dec. 10, 2010]

§ 144.19 Transitioning from Class II to Class VI.

(a) Owners or operators that are injecting carbon dioxide for the primary purpose of long-term storage into an oil and gas reservoir must apply for and obtain a Class VI geologic sequestration permit when there is an increased risk to USDWs compared to Class II operations. In determining if there is an increased risk to USDWs,

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of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in § 146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of § 146.06 (Area of Review) and § 146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.

(b) *Requirements*—(1) *Existing injection wells*. Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.

(2) *New injection wells*. No owner or operator of a new injection well may begin injection until all required corrective action has been taken.

(3) *Injection pressure limitation*. The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.

(4) *Class III wells only*. When setting corrective action requirements the Director shall consider the overall effect of the project on the hydraulic gra-

dient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in § 146.83(b) shall be designed to verify the validity of such determinations.

Subpart F—Financial Responsibility: Class I Hazardous Waste Injection Wells

SOURCE: 49 FR 20186, May 11, 1984, unless otherwise noted.

§ 144.60 Applicability.

(a) The requirements of §§ 144.62, 144.63, and 144.70 apply to owners and operators of all existing and new Class I Hazardous waste injection wells, except as provided otherwise in this section.

§ 144.61 Definitions of terms as used in this subpart.

(a) *Plugging and abandonment plan* means the plan for plugging and abandonment prepared in accordance with the requirements of §§ 144.28 and 144.51.

(b) *Current plugging cost estimate* means the most recent of the estimates prepared in accordance with § 144.62 (a), (b) and (c).

(c) *Parent corporation* means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the injection well owner or operator; the latter corporation is deemed a *subsidiary* of the parent corporation.

(d) The following terms are used in the specifications for the financial test for plugging and abandonment. The definitions are intended to represent the common meanings of the terms as they are generally used by the business community.

Assets means all existing and all probable future economic benefits obtained or controlled by a particular entity.

Current assets means cash or other assets or resources commonly identified as those which are reasonably expected

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to be realized in cash or sold or consumed during the normal operating cycle of the business.

Current liabilities means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

Independently audited refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

Liabilities means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

Net working capital means current assets minus current liabilities.

Net worth means total assets minus total liabilities and is equivalent to owner's equity.

Tangible net worth means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

§ 144.62 Cost estimate for plugging and abandonment.

(a) The owner or operator must prepare a written estimate, in current dollars, of the cost of plugging the injection well in accordance with the plugging and abandonment plan as specified in §§ 144.28 and 144.51. The plugging and abandonment cost estimate must equal the cost of plugging and abandonment at the point in the facility's operating life when the extent and manner of its operation would make plugging and abandonment the most expensive, as indicated by its plugging and abandonment plan.

(b) The owner or operator must adjust the plugging and abandonment cost estimate for inflation within 30 days after each anniversary of the date on which the first plugging and abandonment cost estimate was prepared. The adjustment must be made as specified in paragraphs (b) (1) and (2) of this section, using an inflation factor derived from the annual Oil and Gas Field Equipment Cost Index. The inflation factor is the result of dividing the

latest published annual Index by the Index for the previous year.

(1) The first adjustment is made by multiplying the plugging and abandonment cost estimate by the inflation factor. The result is the adjusted plugging and abandonment cost estimate.

(2) Subsequent adjustments are made by multiplying the latest adjusted plugging and abandonment cost estimate by the latest inflation factor.

(c) The owner or operator must revise the plugging and abandonment cost estimate whenever a change in the plugging and abandonment plan increases the cost of plugging and abandonment. The revised plugging and abandonment cost estimate must be adjusted for inflation as specified in § 144.62(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: the latest plugging and abandonment cost estimate prepared in accordance with § 144.62 (a) and (c) and, when this estimate has been adjusted in accordance with § 144.62(b), the latest adjusted plugging and abandonment cost estimate.

§ 144.63 Financial assurance for plugging and abandonment.

An owner or operator of each facility must establish financial assurance for the plugging and abandonment of each existing and new Class I hazardous waste injection well. He must choose from the options as specified in paragraphs (a) through (f) of this section.

(a) *Plugging and abandonment trust fund.* (1) An owner or operator may satisfy the requirements of this section by establishing a plugging and abandonment trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator. An owner or operator of a Class I well injecting hazardous waste must submit the originally signed duplicate of the trust agreement to the Regional Administrator with the permit application or for approval to operate under rule. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in § 144.70(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see § 144.70(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current plugging and abandonment cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial permit or over the remaining operating life of the injection well as estimated in the plugging and abandonment plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the plugging and abandonment trust fund must be made as follows:

(1) For a new well, the first payment must be made before the initial injection of hazardous waste. A receipt from the trustee for this payment must be submitted by the owner or operator to the Regional Administrator before this initial injection of hazardous waste. The first payment must be at least equal to the current plugging and abandonment cost estimate, except as provided in § 144.70(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{\text{PE} - \text{CV}}{\text{Y}}$$

where PE is the current plugging and abandonment cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(11) If an owner or operator establishes a trust fund as specified in § 144.63(a) of this chapter, and the value of that trust fund is less than the current plugging and abandonment cost estimate when a permit is awarded for the injection well, the amount of the current plugging and abandonment cost estimate still to be paid into the trust fund must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must

continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to part 144 of this chapter. The amount of each payment must be determined by this formula:

$$\text{Next payment} = \frac{\text{PE} - \text{CV}}{\text{Y}}$$

where PE is the current plugging and abandonment cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current plugging and abandonment cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in paragraph (a)(3) of this section.

(5) If the owner or operator establishes a plugging and abandonment trust fund after having used one or more alternate mechanisms specified in this section or in § 144.63 of this chapter, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this paragraph.

(6) After the pay-in period is completed, whenever the current plugging and abandonment cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current plugging and abandonment cost estimate, or obtain other financial assurance as specified in this section to cover the difference.

(7) If the value of the trust fund is greater than the total amount of the current plugging and abandonment cost estimate, the owner or operator may submit a written request to the Regional Administrator for release of

the amount in excess of the current plugging and abandonment cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this section for all or part of the trust fund, he may submit a written request to the Regional Administrator for release of the amount in excess of the current plugging and abandonment cost estimate covered by the trust fund.

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a) (7) or (8) of this section, the Regional Administrator will instruct the trustee to release to the owner or operator such funds as the Regional Administrator specifies in writing.

(10) After beginning final plugging and abandonment, an owner or operator or any other person authorized to perform plugging and abandonment may request reimbursement for plugging and abandonment expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for plugging and abandonment activities, the Regional Administrator will determine whether the plugging and abandonment expenditures are in accordance with the plugging and abandonment plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Regional Administrator specifies in writing. If the Regional Administrator has reason to believe that the cost of plugging and abandonment will be significantly greater than the value of the trust fund, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with § 144.63(i), that the owner or operator is no longer required to maintain financial assurance for plugging and abandonment.

(11) The Regional Administrator will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(i).

(b) *Surety bond guaranteeing payment into a plugging and abandonment trust fund.* (1) An owner or operator must satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator with the application for a permit or for approval to operate under rule. The bond must be effective before the initial injection of hazardous waste. The surety company issuing the trust must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording in § 144.70(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements specified in § 144.63(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these requirements:

(A) Payments into the trust fund as specified in § 144.63(a);

(B) Updating of Schedule A of the trust agreement [see § 144.70(a)] to show current plugging and abandonment cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before beginning of plugging and abandonment of the injection well; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an order to begin plugging

and abandonment is issued by the Regional Administrator or a U.S. district court or other court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(6) The penal sum of the bond must be in amount at least equal to the current plugging and abandonment cost estimate, except as provided in §144.63(g).

(7) Whenever the current plugging and abandonment cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current plugging and abandonment cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current plugging and abandonment cost estimate decreases, the penal sum may be reduced to the amount of the current plugging and abandonment cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during 120 days beginning on the date of the receipt of the notice of cancellation by both owner or operator and the Regional Administrator as evidenced by the returned receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) *Surety bond guaranteeing performance of plugging and abandonment.* (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Regional Administrator. An owner or operator of a new facility must submit the bond to the Regional Administrator with the permit application or for approval to operate under rule. The bond must be effective before injection of hazardous waste is started. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in §144.70(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Regional Administrator. The standby trust must meet the requirements specified in §144.63(a), except that:

(i) An original signed duplicate of the trust agreement must be submitted to the Regional Administrator with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §144.63(a);

(B) Updating of Schedule A of the trust agreement [see §144.70(a)] to show current plugging and abandonment cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The bond must guarantee that the owner or operator will:

(i) Perform plugging and abandonment in accordance with the plugging and abandonment plan and other requirements of the permit for the injection well whenever required to do so; or

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(1) Provide alternate financial assurance as specified in this section, and obtain the Regional Administrator's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination that the owner or operator has failed to perform plugging and abandonment in accordance with the plugging and abandonment plan and other permit requirements when required to do so, under terms of the bond the surety will perform plugging and abandonment as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond must be in an amount at least equal to the current plugging and abandonment cost estimate.

(7) Whenever the current plugging and abandonment cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current plugging and abandonment cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section. Whenever the plugging and abandonment cost estimate decreases, the penal sum may be reduced to the amount of the current plugging and abandonment cost estimate following written approval by the Regional Administrator.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Regional Administrator. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Regional Administrator

has given prior written consent. The Regional Administrator will provide such written consent when:

(1) An owner or operator substitute alternate financial assurance as specified in this section; or

(11) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(1).

(10) The surety will not be liable for deficiencies in the performance of plugging and abandonment by the owner or operator after the Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(1).

(d) *Plugging and abandonment letter of credit.* (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Regional Administrator. An owner or operator of an injection well must submit the letter of credit to the Regional Administrator during submission of the permit application or for approval to operate under rule. The letter of credit must be effective before initial injection of hazardous waste. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(2) The wording of the letter of credit must be identical to the wording specified in § 144.70(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Regional Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Regional Administrator. This standby trust fund must meet the requirements of the trust fund specified in § 144.63(a), except that:

(1) An originally signed duplicate of the trust agreement must be submitted to the Regional Administrator with the letter of credit; and

(1) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in § 144.63(a);

(B) Updating of Schedule A of the trust agreement (see § 144.70(a)) to show current plugging and abandonment cost estimates;

(C) Annual valuations as required by the trust agreement; and

(D) Notices of nonpayment as required by the trust agreement.

(4) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for plugging and abandonment of the well by the letter of credit.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Regional Administrator by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Regional Administrator have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current plugging and abandonment cost estimate, except as provided in § 144.63(g).

(7) Whenever the current plugging and abandonment cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current plugging and abandonment cost estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase.

Whenever the current plugging and abandonment cost estimate decreases, the amount of the credit may be reduced to the amount of the current plugging and abandonment cost estimate following written approval by the Regional Administrator.

(8) Following a determination that the owner or operator has failed to perform final plugging and abandonment in accordance with the plugging and abandonment plan and other permit requirements when required to do so, the Regional Administrator may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in this section and obtain written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Regional Administrator will draw on the letter of credit. The Regional Administrator may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Regional Administrator will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this section and obtain written approval of such assurance from the Regional Administrator.

(10) The Regional Administrator will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(i).

(e) *Plugging and abandonment insurance.* (1) An owner or operator may satisfy the requirements of this section by obtaining plugging and abandonment insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Regional Administrator. An owner or operator of a new injection

well must submit the certificate of insurance to the Regional Administrator with the permit application or for approval operate under rule. The insurance must be effective before injection starts. At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in § 144.70(e).

(3) The plugging and abandonment insurance policy must be issued for a face amount at least equal to the current plugging and abandonment estimate, except as provided in § 144.63(g). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurers future liability will be lowered by the amount of the payments.

(4) The plugging and abandonment insurance policy must guarantee that funds will be available whenever final plugging and abandonment occurs. The policy must also guarantee that once plugging and abandonment begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Regional Administrator, to such party or parties as the Regional Administrator specifies.

(5) After beginning plugging and abandonment, an owner or operator or any other person authorized to perform plugging and abandonment may request reimbursement for plugging and abandonment expenditures by submitting itemized bills to the Regional Administrator. Within 60 days after receiving bills for plugging and abandonment activities, the Regional Administrator will determine whether the plugging and abandonment expenditures are in accordance with the plugging and abandonment plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Regional Administrator specifies in writing. If the Regional Administrator has reason to believe that the cost of plugging and abandonment will be significantly greater than the face amount of the

policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with § 144.63(i), that the owner or operator is no longer required to maintain financial assurance for plugging and abandonment of the injection well.

(6) The owner or operator must maintain the policy in full force and effect until the Regional Administrator consents to termination of the policy by the owner or operator as specified in paragraph (e)(10) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Regional Administrator deems necessary. Such violation will be deemed to begin upon receipt by the Regional Administrator of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy must contain provisions allowing assignment to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Regional Administrator. Cancellation, termination, or failure to renew may not occur, however, during 120 days beginning with the date of receipt of the notice by both the Regional Administrator and the owner or operator, as evidenced by the return of receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Regional Administrator deems the injection well abandoned; or

(ii) The permit is terminated or revoked or a new permit is denied; or

(iii) Plugging and abandonment is ordered by the Regional Administrator or a U.S. district court or other court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

(9) Whenever the current plugging and abandonment cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current plugging and abandonment estimate and submit evidence of such increase to the Regional Administrator, or obtain other financial assurance as specified in this section to cover the increase. Whenever the current plugging and abandonment cost estimate decreases, the face amount may be reduced to the amount of the current plugging and abandonment cost estimate following written approval by the Regional Administrator.

(10) The Regional Administrator will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(d).

(f) *Financial test and corporate guarantee for plugging and abandonment.* (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (f)(1)(i) or (f)(1)(ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: A ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current

assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current plugging and abandonment cost estimate; and

(C) Tangible net worth of at least \$10 million; and

(D) Assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current plugging and abandonment cost estimate.

(ii) The owner or operator must have:

(A) A current rating for his most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current plugging and abandonment cost estimate; and

(C) Tangible net worth of at least \$10 million; and

(D) Assets located in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current plugging and abandonment cost estimates.

(2) The phrase "current plugging and abandonment cost estimate" as used in paragraph (f)(1) of this section refers to the cost estimate required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer § 144.70(f).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Regional Administrator:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in § 144.70(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(A) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(B) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(4) An owner or operator of a new injection well must submit the items specified in paragraph (f)(3) of this section to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Regional Administrator within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Regional Administrator of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Regional Administrator may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Regional Administrator finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Regional Administrator may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination

of the owner's or operator's financial statements [see paragraph (f)(3)(ii) of this section]. An adverse opinion or disclaimer of opinion will be cause for disallowance. The Regional Administrator will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Regional Administrator releases the owner or operator from the requirements of this section in accordance with § 144.63(i).

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantee must be the parent corporation of the owner or operator. The guarantee must meet the requirements for owners or operators in paragraphs (f)(1) through (f)(8) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in § 144.70(h). The corporate guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) If the owner or operator fails to perform plugging and abandonment of the injection well covered by the corporate guarantee in accordance with the plugging and abandonment plan and other permit requirements whenever required to do so, the guarantee will do so or establish a trust fund as specified in § 144.63(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and the Regional Administrator, as evidenced by the return receipts. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation

by both the owner or operator and the Regional Administrator, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Regional Administrator within 90 days after receipt by both the owner or operator and the Regional Administrator of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

(g) *Use of multiple financial mechanisms.* An owner or operator may satisfy the requirements of this section by establishing more than one financial mechanism per injection well. These mechanisms are limited to trust funds, surety bonds, guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the adjusted plugging and abandonment cost. If an owner or operator uses a trust fund in combination with a surety bond or letter of credit, he may use that trust fund as the standby trust fund for the other mechanisms. A single standby trust may be established for two or more mechanisms. The Regional Administrator may invoke any or all of the mechanisms to provide for plugging and abandonment of the injection well.

(h) *Use of a financial mechanism for multiple facilities.* An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one injection well. Evidence of financial assurance submitted to the Regional Administrator must include a list showing, for each injection well, the EPA Identification Number, name, address, and the amount of funds for plugging and abandonment assured by the mechanism. If the injection wells covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted

to and maintained with the Regional Administrators of all such Regions. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each injection well. In directing funds available through the mechanism for plugging and abandonment of any of the injection wells covered by the mechanism, the Regional Administrator may direct only the amount of funds designated for that injection well, unless the owner or operator agrees to use additional funds available under the mechanism.

(i) *Release of the owner or operator from the requirements of this section.* Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that plugging and abandonment has been accomplished in accordance with the plugging and abandonment plan, the Regional Administrator will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for plugging and abandonment of the injection well, unless the Regional Administrator has reason to believe that plugging and abandonment has not been in accordance with the plugging and abandonment plan.

§ 144.64 Incapacity of owners or operators, guarantors, or financial institutions.

(a) An owner or operator must notify the Regional Administrator by certified mail of the commencement of a voluntary or involuntary proceeding under title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 business days after the commencement of the proceeding. A guarantor of a corporate guarantee as specified in § 144.63(f) must make such a notification if he is named as debtor, as required under the terms of the guarantee (§ 144.70(f)).

(b) An owner or operator who fulfills the requirements of § 144.63 by obtaining a letter of credit, surety bond, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event

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of bankruptcy, insolvency, or a suspension or revocation of the license or charter of the issuing institution. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

§ 144.65 Use of State-required mechanisms.

(a) For a facility located in a State where EPA is administering the requirements of this subpart but where the State has plugging and abandonment regulations that include requirements for financial assurance of plugging and abandonment, an owner or operator may use State-required financial mechanisms to meet the requirements of this subpart if the Regional Administrator determines that the State mechanisms are at least equivalent to the mechanisms specified in this subpart. The Regional Administrator will evaluate the equivalency of the mechanisms mainly in terms of (1) certainty of the availability of funds for the required plugging and abandonment activities and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors. The owner or operator must submit to the Regional Administrator evidence of the establishment of the mechanism together with a letter requesting that the State-required mechanism be considered acceptable for meeting the requirements of this subpart. The submittal must include the following information: The facility's EPA Identification Number, name and address, and the amounts of funds for plugging and abandonment coverage assured by the mechanism. The Regional Administrator will notify the owner or operator of his determination regarding the mechanism's acceptability. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary for making this determination.

(b) If a State-required mechanism is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by increasing the funds available through the State-re-

quired mechanism or using additional mechanisms as specified in this subpart. The amounts of funds available through the State and Federal mechanisms must at least equal the amounts required by this subpart.

§ 144.66 State assumption of responsibility.

(a) If a State either assumes legal responsibility for an owner's or operator's compliance with the plugging and abandonment requirements of these regulations or assures that funds will be available from State sources to cover these requirements, the owner or operator will be in compliance with the requirements of this subpart if the Regional Administrator determines that the State's assumption of responsibility is at least equivalent to the mechanisms specified in this subpart. The Regional Administrator will evaluate the equivalency of State guarantees mainly in terms of (1) certainty of the availability of funds for the required plugging and abandonment coverage and (2) the amount of funds that will be made available. The Regional Administrator may also consider other factors. The owner or operator must submit to the Regional Administrator a letter from the State describing the nature of the State's assumption of responsibility together with a letter from the owner or operator requesting that the State's assumption of responsibility be considered acceptable for meeting the requirements of this subpart. The letter from the State must include, or have attached to it, the following information: the facility's EPA Identification Number, name and address, and the amounts of funds for plugging and abandonment coverage that are guaranteed by the State. The Regional Administrator will notify the owner or operator of his determination regarding the acceptability of the State's guarantee in lieu of mechanisms specified in this subpart. The Regional Administrator may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with § 144.63.

(b) If a State's assumption of responsibility is found acceptable as specified in paragraph (a) of this section except for the amount of funds available, the owner or operator may satisfy the requirements of this subpart by use of both the State's assurance and additional financial mechanisms as specified in this subpart. The amount of funds available through the State and Federal mechanisms must at least equal the amount required by this subpart.

§ 144.70 Wording of the instruments.

(a)(1) A trust agreement for a trust fund, as specified in § 144.63(a) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

TRUST AGREEMENT, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of _____" or "a national bank"], the "Trustee,"

Whereas, the United States Environmental Protection Agency, "EPA," an agency of the United States Government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of an injection well shall provide assurance that funds will be available when needed for plugging and abandonment of the injection well,

Whereas, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facility(ies) identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

(c) Facility or activity means any "underground injection well" or any other facility or activity that is subject to regulation under the Underground Injection Control Program.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A, for each facility list the EPA Identification Number, name, address, and the current plugging and abandonment cost estimate, or portions thereof, for which financial assurance is demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of EPA. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Plugging and Abandonment. The Trustee shall make payments from the Fund as the EPA Regional Administrator shall direct, in writing, to provide for the payment of the costs of plugging and abandonment of the injection wells covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the EPA Regional Administrator from the Fund for plugging and abandonment expenditures in such amounts as the EPA Regional Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the EPA Regional Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill,

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prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit

or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the appropriate EPA Regional Administrator a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EPA Regional Administrator shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the

Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the EPA Regional Administrator to the Trustee shall be in writing, signed by the EPA Regional Administrators of the Regions in which the facilities are located, or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the appropriate EPA Regional Administrator, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the appropriate EPA Regional Administrator, or by the Trustee and the ap-

propriate EPA Regional Administrator if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA Regional Administrator issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of [insert name of State].

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 144.70(a)(1) as such regulations were constituted on the date first above written.

[Signature of Grantor]

By [Title]
Attest:

[TITLE]

[SEAL]

[Signature of Trustee]

By
Attest:

Environmental Protection Agency

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[TITLE]

[SEAL]

(2) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in §144.63(a). State requirements may differ on the proper content of this acknowledgment.

State of _____
County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order to the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

(b) A surety bond guaranteeing payment into a trust fund, as specified in §144.63 of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

FINANCIAL GUARANTEE BOND

Dated bond executed: _____

Effective date: _____

Principal: [legal name and business address of owner or operator].

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"].

State of incorporation: _____

Surety(ies): [name(s) and business address(es)].

EPA Identification Number, name, address, and plugging and abandonment amount(s) for each facility guaranteed by this bond [indicate plugging and abandonment amounts separately]: _____

Total penal sum of bond: \$ _____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the U.S. Environmental Protection Agency (hereinafter called EPA), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or ac-

tions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the Underground Injection Control Regulations (UIC), to have a permit or comply with requirements to operate under rule in order to own or operate each injection well identified above, and

Whereas said Principal is required to provide financial assurance for plugging and abandonment as a condition of the permit or provisions to operate under rule, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of plugging and abandonment of each injection well identified above, fund the standby trust fund in the amount(s) identified above for the injection well,

Or if the Principal shall fund the standby trust fund in such amount(s) within 15 days after an order to begin plugging and abandonment is issued by an EPA Regional Administrator or a U.S. district court or other court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in subpart F of 40 CFR part 144, as applicable, and obtain the EPA Regional Administrator's written approval of such assurance, within 90 days after the date of notice of cancellation is received by both the Principal and the EPA Regional Administrator(s) from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by an EPA Regional Administrator that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the injection well(s) into the standby trust funds as directed by the EPA Regional Administrator.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified

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mail to the Principal and to the EPA Regional Administrator(s) for the Region(s) in which the injection well(s) is (are) located, provided, however, that that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator(s), as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receives written authorization for termination of the bond by the EPA Regional Administrator(s) of the Region(s) in which the bonded facility(ies) is (are) located.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new plugging and abandonment amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the EPA Regional Administrator(s).

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 40 CFR 144.70(b) as such regulations were constituted on the date this bond was executed.

PRINCIPAL

[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

CORPORATE SURETY(IES)

[Name and address]
State of incorporation: _____.
Liability limit: \$ _____.
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]
[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]
Bond premium: \$ _____.

(c) A surety bond guaranteeing performance of plugging and abandonment, as specified in § 144.63(c), must be worded as follows, except that the instructions in brackets are to be re-

placed with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed: _____.
Effective date: _____.
Principal: [legal name and business address of owner or operator].
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"].
State of incorporation: _____.
Surety(ies): [name(s) and business address(es)]

EPA Identification Number, name, address, and plugging and abandonment amounts(s) for each injection well guaranteed by this bond [indicate plugging and abandonment amounts for each well]:

Total penal sum of bond: \$ _____.

Surety's bond number: _____.

Know All Persons By These Presents, That We, the Principal and Surety(ies) hereto are firmly bound to the U.S. Environmental Protection Agency [hereinafter called EPA], in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the Underground Injection Control Regulations, as amended, to have a permit or comply with provisions to operate under rule for each injection well identified above, and

Whereas said Principal is required to provide financial assurance for plugging and abandonment as a condition of the permit or approval to operate under rule, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal shall faithfully perform plugging and abandonment, whenever required to do so, of each injection well for which this bond guarantees plugging and abandonment, in accordance with the plugging and abandonment plan and other requirements of the permit or provisions for operating under rule and other requirements of the permit or provisions for

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operating under rule as may be amended, pursuant to all applicable laws, statutes, rules and regulations, as such laws, statutes, rules, and regulations may be amended.

Or, if the Principal shall provide alternate financial assurance as specified in subpart F of 40 CFR part 144, and obtain the EPA Regional Administrator's written approval of such assurance, within 90 days after the date of notice of cancellation is received by both the Principal and the EPA Regional Administrator(s) from the Surety(ies), then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by an EPA Regional Administrator that the Principal has been found in violation of the plugging and abandonment requirements of 40 CFR part 144, for an injection well which this bond guarantees performances of plugging and abandonment, the Surety(ies) shall either perform plugging and abandonment in accordance with the plugging and abandonment plan and other permit requirements or provisions for operating under rule and other requirements or place the amount for plugging and abandonment into a standby trust fund as directed by the EPA Regional Administrator.

Upon notification by an EPA Regional Administrator that the Principal has failed to provide alternate financial assurance as specified in subpart F of 40 CFR part 144, and obtain written approval of such assurance from the EPA Regional Administrator(s) during the 90 days following receipt by both the Principal and the EPA Regional Administrator(s) of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the injection well(s) into the standby trust fund as directed by the EPA Regional Administrator.

The surety(ies) hereby waive(s) notification of amendments to plugging and abandonment plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice by certified mail to the owner or operator and to the EPA Regional Administrator(s) for the Region(s) in which the injection well(s) is (are) located, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both

the Principal and the EPA Regional Administrator(s), as evidenced by the return receipts.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded injection well(s) is (are) located.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new plugging and abandonment amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the EPA Regional Administrator(s).

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording on this surety bond is identical to the wording specified in 40 CFR 144.70(o) as such regulation was constituted on the date this bond was executed.

Principal.
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]
[Corporate Surety(ies)]
[Name and address]
State of incorporation: _____

Liability limit: \$ _____.
[Signature(s)]
[Name(s) and title(s)]
Corporate seal:
[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]
Bond premium: \$ _____

(d) A letter of credit, as specified in § 144.63(d) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT
Regional Administrator(s)
Region(s) _____
U.S. Environmental Protection Agency.
Dear Sir or Madam:
We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor,

at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars \$_____, available upon presentation [insert, if more than one Regional Administrator is a beneficiary, "by any one of you"] of

(1) Your sight draft, bearing reference to this letter of credit No. _____, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Safe Drinking Water Act."

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 40 CFR 144.70(d) as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(e) A certificate of insurance, as specified in § 144.63(e) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certificate of Insurance for Plugging and Abandonment
Name and Address of Insurer (herein called the "Insurer"):

Name and Address of Insurer (herein called the "Insurer"):

Injection Wells covered: [list for each well: The EPA Identification Number, name, address, and the amount of insurance for plugging and abandonment (these amounts for all injection wells covered must total the face amount shown below).]

Face Amount: _____

Policy Number: _____

Effective Date: _____

The insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for plugging and abandonment for the injection wells identified above. The Insurer further warrants that such policy conforms in all respects with the requirements of 40 CFR 144.63(e), as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the EPA Regional Administrator(s) of the U.S. Environmental Protection Agency, the Insurer agrees to furnish to the EPA Regional Administrator(s) a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in 40 CFR 144.70(e) as such regulations were constituted on the date shown immediately below.

[Authorized signature of Insurer]

[Name of person signing]

[Title of person signing]

[Signature of witness or notary:]

[Date]

(f) A letter from the chief financial officer, as specified in § 144.63(f) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to Regional Administrator of every Region in which injection wells for which financial responsibility is to be demonstrated through the financial test are located.]

I am the chief financial officer of [name and address of firm.] This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in subpart F of 40 CFR part 144.

[Fill out the following four paragraphs regarding injection wells and associated cost estimates. If your firm has no injection wells that belong in a particular paragraph, write "None" in the space indicated. For each injection well, include its EPA Identification

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Number, name, address, and current plugging and abandonment cost estimate.]

1. This firm is the owner or operator of the following injection wells for which financial assurance for plugging and abandonment is demonstrated through the financial test specified in subpart F of 40 CFR part 144. The current plugging and abandonment cost estimate covered by the test is shown for each injection well: _____.

2. This firm guarantees, through the corporate guarantee specified in subpart F of 40 CFR part 144, the plugging and abandonment of the following injection wells owned or operated by subsidiaries of this firm. The current cost estimate for plugging and abandonment so guaranteed is shown for each injection well: _____.

3. In States where EPA is not administering the financial requirements of subpart F of 40 CFR part 144, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the plugging and abandonment of the following injection wells through the use of a test equivalent or substantially equivalent to the financial test specified in subpart F of 40 CFR part 144. The current plugging and abandonment cost estimate covered by such a test is shown for each injection well: _____.

4. This firm is the owner or operator of the following injection wells for which financial assurance for plugging and abandonment is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanism specified in subpart F of 40 CFR part 144 or equivalent or substantially equivalent State mechanisms. The current plugging and abandonment cost estimate not covered by such financial assurance is shown for each injection well: _____.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of paragraph (f)(1)(i) of §144.63 of this chapter are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of §144.63 of this chapter are used.]

ALTERNATIVE I

1. (a) Current plugging and abandonment cost \$ _____
- (b) Sum of the company's financial responsibilities under 40 CFR Parts 264 and 265, Subpart H, currently met using the financial test or corporate guarantee _____
- (c) Total of lines a and b _____

ALTERNATIVE I—Continued

- *2. Total liabilities (if any portion of the plugging and abandonment cost is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4) _____
- *3. Tangible net worth _____
- *4. Net worth _____
- *5. Current assets _____
- *6. Current liabilities _____
- *7. Net working capital [line 5 minus line 6] _____
- *8. The sum of net income plus depreciation, depletion and amortization _____
- *9. Total assets in U.S. (required only if less than 90% of firm's assets are located in U.S.) _____

	Yes	No
10. Is line 3 at least \$10 million? ..	_____	_____
11. Is line 3 at least 6 times line 1(c)? ..	_____	_____
12. Is line 7 at least 6 times line 1(c)? ..	_____	_____
*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14.	_____	_____
14. Is line 9 at least 6 times line 1(c)? ..	_____	_____
15. Is line 2 divided by line 4 less than 2.0? ..	_____	_____
16. Is line 8 divided by line 2 greater than 0.1? ..	_____	_____
17. Is line 5 divided by line 6 greater than 1.5? ..	_____	_____

ALTERNATIVE II

1. (a) Current plugging and abandonment cost \$ _____
- (b) Sum of the company's financial responsibilities under 40 CFR Parts 264 and 265, Subpart H, currently met using the financial test or corporate guarantee _____
- (c) Total of lines a and b _____
2. Current bond rating of most recent issuance of this firm and name of rating service _____
3. Date of issuance of bond _____
4. Date of maturity of bond _____
- *5. Tangible net worth (if any portion of the plugging and abandonment cost estimate is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line) _____
- *6. Total assets in U.S. (required only if less than 90% of firm's assets are located in U.S.) _____

	Yes	No
7. Is line 5 at least \$10 million?	_____	_____
8. Is line 5 at least 6 times line 1(c)? ..	_____	_____
*9. Are at least 90% of the firm's assets located in the U.S.? If not, complete line 10.	_____	_____
10. Is line 6 at least 6 times line 1(c)? ..	_____	_____

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 144.70(f) as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]

[Date]

(g) A corporate guarantee as specified in § 144.63(e) must be worded as follows except that instructions in brackets are to be replaced with the relevant information and the bracketed material deleted:

GUARANTEE FOR PLUGGING AND ABANDONMENT

Guarantee made this ____ day of ____, 19 ____, by [name of guaranteeing entity], a business corporation organized under the laws of the State of ____, herein referred to as guarantor, to the United States Environmental Protection Agency (EPA), obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 144.63(e).

2. [Owner or operator] owns or operates the following Class I hazardous waste injection well covered by this guarantee: [List for each facility: EPA Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.]

3. "Plugging and abandonment plan" as used below refers to the plans maintained as required by 40 CFR part 144 for the plugging and abandonment of injection wells as identified above.

4. For value received from [owner or operator], guarantor guarantees to EPA that in the event that [owner or operator] fails to perform ["plugging and abandonment"] of the above facility(ies) in accordance with the plugging and abandonment plan and other requirements when required to do so, the guarantor will do so or fund a trust fund as specified in 40 CFR 144.63 in the name of [owner or operator] in the amount of the adjusted plugging and abandonment cost estimates prepared as specified in 40 CFR 144.62.

5. Guarantor agrees that, if at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor will send within 90 days, by certified mail, notice to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located and to [owner or operator] that he intends to provide alternate financial assurance as specified in 40 CFR 144.63 in the name of [owner or operator]. Within 30 days after sending such notice, the guarantor will establish such financial assurance if [owner or operator] has not done so.

6. The guarantor agrees to notify the Regional Administrator, by certified mail, of a voluntary or involuntary case under Title 11, U.S. Code, naming guarantor as debtor, within 10 days after its commencement.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of plugging and abandonment, he will establish alternate financial assurance, as specified in 40 CFR 144.63, in the name of [owner or operator] if [owner or operator] has not done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the plugging and abandonment plan, the extension or reduction of the time of performance of plugging and abandonment or any other modification or alteration of an obligation of [owner or operator] pursuant to 40 CFR part 144.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of 40 CFR part 144 for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail, to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located and to [owner or operator], such cancellation to become effective no earlier than 120 days after actual receipt of such notice by both EPA and [owner or operator] as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance and obtain written approval of such assurance from the EPA Regional Administrator(s) within 90 days after a notice of cancellation by the guarantor is received by both the EPA Regional Administrator(s) and [owner or operator], guarantor will provide alternate financial assurance as specified in 40 CFR 144.63 in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the EPA or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the plugging and abandonment plan.

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 144.70(f).

Effective date: ____.

[Name of guarantor]

[Authorized signature for guarantor]

[Type name of person signing]

[Title of person signing]

Signature of witness or notary: ____

[40 FR 14189, Apr. 1, 1983, as amended at 59 FR 29959, June 10, 1994]

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transfer except upon the request of the new permittee.

(3) A determination that the waste being injected is a hazardous waste as defined in § 261.3 either because the definition has been revised, or because a previous determination has been changed.

(c) *Facility siting.* Suitability of the facility location will not be considered at the time of permit modification or revocation and reissuance unless new information or standards indicate that a threat to human health or the environment exists which was unknown at the time of permit issuance.

[48 FR 14189, Apr. 1, 1983, as amended at 53 FR 28147, July 26, 1988; 76 FR 77288, Dec. 10, 2010]

§ 144.40 Termination of permits.

(a) The Director may terminate a permit during its term, or deny a permit renewal application for the following causes:

(1) Noncompliance by the permittee with any condition of the permit;

(2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;

(b) The Director shall follow the applicable procedures in part 124 in terminating any permit under this section.

§ 144.41 Minor modifications of permits.

Upon the consent of the permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following the procedures of part 124. Any permit modification not processed as a minor modification under this section must be made for cause and with part 124 draft permit and public notice as required in § 144.39. Minor modifications may only:

(a) Correct typographical errors;

(b) Require more frequent monitoring or reporting by the permittee;

(c) Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement; or

(d) Allow for a change in ownership or operational control of a facility where the Director determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Director.

(e) Change quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the Director, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.

(f) Change construction requirements approved by the Director pursuant to § 144.52(a)(1) (establishing UIC permit conditions), provided that any such alteration shall comply with the requirements of this part and part 146.

(g) Amend a plugging and abandonment plan which has been updated under § 144.52(a)(6).

(h) Amend a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan where the modifications merely clarify or correct the plan, as determined by the Director.

[48 FR 14189, Apr. 1, 1983, as amended at 76 FR 77289, Dec. 10, 2010]

Subpart E—Permit Conditions

§ 144.51 Conditions applicable to all permits.

The following conditions apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.

(a) *Duty to comply.* The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application; except that the permittee need not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit under § 144.34.

(b) *Duty to reapply.* If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

(c) *Need to halt or reduce activity not a defense.* It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) *Duty to mitigate.* The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

(e) *Proper operation and maintenance.* The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

(f) *Permit actions.* This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(g) *Property rights.* This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) *Duty to provide information.* The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) *Inspection and entry.* The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

(1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.

(j) *Monitoring and records.* (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under § 144.52(a)(6), or under part 146 subpart G as appropriate. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period. For EPA administered programs, the owner or operator shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.

(3) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(4) Owners or operators of Class VI wells shall retain records as specified in subpart H of part 146, including §§ 146.84(g), 146.91(f), 146.92(d), 146.93(f), and 146.93(h) of this chapter.

(k) *Signatory requirement.* All applications, reports, or information submitted to the Administrator shall be signed and certified. (See § 144.32.)

(l) *Reporting requirements.*—(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See § 144.38; in some cases,

modification or revocation and reissuance is mandatory.)

(4) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(6) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(7) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under paragraphs (1) (4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (1)(6) of this section.

(8) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

(m) *Requirements prior to commencing injection.* Except for all new wells authorized by an area permit under

§ 144.33(c), a new injection well may not commence injection until construction is complete, and

(1) The permittee has submitted notice of completion of construction to the Director; and

(2)(1) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(1) The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well within 18 days of the date of the notice in paragraph (m)(1) of this section, in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

(n) The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project.

(o) A Class I, II or III permit shall include and a Class V permit may include conditions which meet the applicable requirements of § 146.10 of this chapter to ensure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of § 146.10 of this chapter, the Director shall incorporate the plan into the permit as a permit condition. Where the Director's review of an application indicates that the permittee's plan is inadequate, the Director may require the applicant to revise the plan, prescribe conditions meeting the requirements of this paragraph, or deny the permit. A Class VI permit shall include conditions which meet the requirements set forth in § 146.92 of this chapter. Where the plan meets the requirements of § 146.92 of this chapter, the Director shall incorporate it into the permit as a permit condition. For purposes of this paragraph, temporary or intermittent cessation of injection operations is not abandonment.

(p) *Plugging and abandonment report.* For EPA-administered programs, within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a report to the Re-

gional Administrator. If the quarterly report is due less than 15 days before completion of plugging, then the report shall be submitted within 60 days. The report shall be certified as accurate by the person who performed the plugging operation. Such report shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to the Regional Administrator; or

(2) Where actual plugging differed from the plan previously submitted, and updated version of the plan on the form supplied by the regional administrator, specifying the differences.

(q) *Duty to establish and maintain mechanical integrity.* (1) The owner or operator of a Class I, II, III or VI well permitted under this part shall establish mechanical integrity prior to commencing injection or on a schedule determined by the Director. Thereafter the owner or operator of Class I, II, and III wells must maintain mechanical integrity as defined in § 146.8 of this chapter and the owner or operator of Class VI wells must maintain mechanical integrity as defined in § 146.89 of this chapter. For EPA-administered programs, the Regional Administrator may require by written notice that the owner or operator comply with a schedule describing when mechanical integrity demonstrations shall be made.

(2) When the Director determines that a Class I, II, III or VI well lacks mechanical integrity pursuant to § 146.8 or § 146.89 of this chapter for Class VI of this chapter, he/she shall give written notice of his/her determination to the owner or operator. Unless the Director requires immediate cessation, the owner or operator shall cease injection into the well within 48 hours of receipt of the Director's determination. The Director may allow plugging of the well pursuant to the requirements of § 146.10 of this chapter or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Director that the owner or operator

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has demonstrated mechanical integrity pursuant to § 146.8 of this chapter.

(3) The Director may allow the owner or operator of a well which lacks mechanical integrity pursuant to § 146.8(a)(1) of this chapter to continue or resume injection, if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.

[46 FR 14189, Apr. 1, 1983, as amended at 49 FR 20186, May 11, 1984; 53 FR 28147, July 26, 1988; 53 FR 63698, Dec. 3, 1988; 75 FR 77269, Dec. 10, 2010]

§ 144.52 Establishing permit conditions.

(a) In addition to conditions required in § 144.51, the Director shall establish conditions, as required on a case-by-case basis under § 144.36 (duration of permits), § 144.53(a) (schedules of compliance), § 144.54 (monitoring), and for EPA permits only § 144.53(b) (alternate schedules of compliance), and § 144.4 (considerations under Federal law). Permits for owners or operators of hazardous waste injection wells shall include conditions meeting the requirements of § 144.14 (requirements for wells injecting hazardous waste), paragraphs (a)(7) and (a)(9) of this section, and subpart G of part 146. Permits for owners or operators of Class VI injection wells shall include conditions meeting the requirements of subpart H of part 146. Permits for other wells shall contain the following requirements, when applicable.

(1) *Construction requirements* as set forth in part 146. Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling, and construction as part of the permit application. Except as authorized by an area permit, no construction may commence until a permit has been issued containing construction requirements (see § 144.11). New wells shall be in compliance with these requirements prior to commencing injection operations. Changes in construction plans during construction may be approved by the Administrator as minor modifications (§ 144.41). No such changes may be phys-

ically incorporated into construction of the well prior to approval of the modification by the Director.

(2) *Corrective action* as set forth in §§ 144.55, 146.7, and 146.84 of this chapter.

(3) *Operation requirements* as set forth in 40 CFR part 146; the permit shall establish any maximum injection volumes and/or pressures necessary to assure that fractures are not initiated in the confining zone, that injected fluids do not migrate into any underground source of drinking water, that formation fluids are not displaced into any underground source of drinking water, and to assure compliance with the part 146 operating requirements.

(4) *Requirements for wells managing hazardous waste*, as set forth in § 144.14.

(5) *Monitoring and reporting requirements* as set forth in 40 CFR part 146. The permittee shall be required to identify types of tests and methods used to generate the monitoring data. For EPA administered programs, monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in table I of 40 CFR 136.3 or in appendix III of 40 CFR part 261 or in certain circumstances by other methods that have been approved by the Regional Administrator.

(6) After a cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the plan unless he:

(1) Provides notice to the Regional Administrator;

(ii) Describes actions or procedures, satisfactory to the Regional Administrator, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.

(7) *Financial responsibility*. (1) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Director until:

(A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to §§144.51(o), 146.10, and 146.92 of this chapter, and submitted a plugging and abandonment report pursuant to §144.51(p); or

(B) The well has been converted in compliance with the requirements of §144.51(n); or

(C) The transferor of a permit has received notice from the Director that the owner or operator receiving transfer of the permit, the new permittee, has demonstrated financial responsibility for the well.

(1) The permittee shall show evidence of such financial responsibility to the Director by the submission of a surety bond, or other adequate assurance, such as a financial statement or other materials acceptable to the Director. For EPA administered programs, the Regional Administrator may on a periodic basis require the holder of a lifetime permit to submit an estimate of the resources needed to plug and abandon the well revised to reflect inflation of such costs, and a revised demonstration of financial responsibility, if necessary. The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of subpart F of this part. For Class VI wells, the permittee shall show evidence of such financial responsibility to the Director by the submission of a qualifying instrument (see §146.85(a) of this chapter), such as a financial statement or other materials acceptable to the Director. The owner or operator of a Class VI well must comply with the financial responsibility requirements set forth in §146.85 of this chapter.

(8) *Mechanical integrity.* A permit for any Class I, II, III or VI well or injection project which lacks mechanical integrity shall include, and for any Class V well may include, a condition prohibiting injection operations until the permittee shows to the satisfaction of the Director under §146.8; or §146.89 of this chapter for Class VI, that the well has mechanical integrity.

(9) *Additional conditions.* The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of

fluids into underground sources of drinking water.

(b)(1) In addition to conditions required in all permits the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the SDWA and parts 144, 145, 146 and 124.

(2) For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. For a permit issued by EPA, an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect prior to the issuance of the permit. Section 124.14 (reopening of comment period) provides a means for reopening EPA permit proceedings at the discretion of the Director where new requirements become effective during the permitting process and are of sufficient magnitude to make additional proceedings desirable. For State and EPA administered programs, an applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in §144.39.

(3) New or reissued permits, and to the extent allowed under §144.39 modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in §144.52.

(c) *Incorporation.* All permit conditions shall be incorporated either expressly or by reference. If incorporated by reference, a specific citation to the applicable regulations or requirements must be given in the permit.

[48 FR 14189, Apr. 1, 1983, as amended at 49 FR 20185, May 11, 1984; 53 FR 28147, July 26, 1988; 58 FR 63898, Dec. 3, 1993; 65 FR 30913, May 15, 2000; 75 FR 77289, Dec. 10, 2010]

§ 144.53 Schedule of compliance.

(a) *General.* The permit may, when appropriate, specify a schedule of compliance leading to compliance with the SDWA and parts 144, 145, 146, and 124.

(1) *Time for compliance.* Any schedules of compliance shall require compliance as soon as possible, and in no case later than 3 years after the effective date of the permit.

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(2) *Interim dates.* Except as provided in paragraph (b)(1)(ii) of this section, if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(i) The time between interim dates shall not exceed 1 year.

(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(3) *Reporting.* The permit shall be written to require that if paragraph (a)(1) of this section is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

(b) *Alternative schedules of compliance.* A permit applicant or permittee may cease conducting regulated activities (by plugging and abandonment) rather than continue to operate and meet permit requirements as follows:

(1) If the permittee decides to cease conducting regulated activities at a given time within the term of a permit which has already been issued:

(i) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or

(ii) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.

(2) If the decision to cease conducting regulated activities is made before issuance of a permit whose term will include the termination date, the permit shall contain a schedule leading to termination which will ensure timely compliance with applicable requirements.

(3) If the permittee is undecided whether to cease conducting regulated activities, the Director may issue or modify a permit to contain two schedules as follows:

(i) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease con-

ducting regulated activities no later than a date which ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;

(ii) One schedule shall lead to timely compliance with applicable requirements;

(iii) The second schedule shall lead to cessation of regulated activities by a date which will ensure timely compliance with applicable requirements;

(iv) Each permit containing two schedules shall include a requirement that after the permittee has made a final decision under paragraph (b)(3)(i) of this section it shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.

(4) The applicant's or permittee's decision to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the Director, such as a resolution of the board of directors of a corporation.

§ 144.54 Requirements for recording and reporting of monitoring results.

All permits shall specify:

(a) Requirements concerning the proper use, maintenance, and installation, when appropriate, of monitoring equipment or methods (including biological monitoring methods when appropriate);

(b) Required monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring;

(c) Applicable reporting requirements based upon the impact of the regulated activity and as specified in part 146. Reporting shall be no less frequent than specified in the above regulations.

§ 144.55 Corrective action.

(a) *Coverage.* Applicants for Class I, II, (other than existing), or III injection well permits shall identify the location of all known wells within the injection well's area of review which penetrate the injection zone, or in the case

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of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review penetrating formations affected by the increase in pressure. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water ("corrective action"). Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based on the factors in §146.07), the Director shall require the applicant to revise the plan, prescribe a plan for corrective action as a condition of the permit under paragraph (b) of this section, or deny the application. The Director may disregard the provisions of §146.06 (Area of Review) and §146.07 (Corrective Action) when reviewing an application to permit an existing Class II well.

(b) *Requirements*—(1) *Existing injection wells*. Any permit issued for an existing injection well (other than Class II) requiring corrective action shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (a) of this section to be completed as soon as possible.

(2) *New injection wells*. No owner or operator of a new injection well may begin injection until all required corrective action has been taken.

(3) *Injection pressure limitation*. The Director may require as a permit condition that injection pressure be so limited that pressure in the injection zone does not exceed hydrostatic pressure at the site of any improperly completed or abandoned well within the area of review. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation can be part of a compliance schedule and last until all other required corrective action has been taken.

(4) *Class III wells only*. When setting corrective action requirements the Director shall consider the overall effect of the project on the hydraulic gra-

dient in potentially affected USDWs, and the corresponding changes in potentiometric surface(s) and flow direction(s) rather than the discrete effect of each well. If a decision is made that corrective action is not necessary based on the determinations above, the monitoring program required in §146.33(b) shall be designed to verify the validity of such determinations.

Subpart F—Financial Responsibility: Class I Hazardous Waste Injection Wells

SOURCE: 49 FR 20188, May 11, 1984, unless otherwise noted.

§ 144.60 Applicability.

(a) The requirements of §§144.62, 144.63, and 144.70 apply to owners and operators of all existing and new Class I Hazardous waste injection wells, except as provided otherwise in this section.

§ 144.61 Definitions of terms as used in this subpart.

(a) *Plugging and abandonment plan* means the plan for plugging and abandonment prepared in accordance with the requirements of §§144.28 and 144.51.

(b) *Current plugging cost estimate* means the most recent of the estimates prepared in accordance with §144.62 (a), (b) and (c).

(c) *Parent corporation* means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the injection well owner or operator; the latter corporation is deemed a *subsidiary* of the parent corporation.

(d) The following terms are used in the specifications for the financial test for plugging and abandonment. The definitions are intended to represent the common meanings of the terms as they are generally used by the business community.

Assets means all existing and all probable future economic benefits obtained or controlled by a particular entity.

Current assets means cash or other assets or resources commonly identified as those which are reasonably expected

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(11) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(12) Plans (including maps) for meeting the monitoring requirements of § 146.33(b);

(13) Expected changes in pressure, native fluid displacement, direction of movement of injection fluid;

(14) Contingency plans to cope with all shut-ins or well failures so as to prevent the migration of contaminating fluids into underground sources of drinking water;

(15) A certificate that the applicant has assured, through a performance bond, or other appropriate means, the resources necessary to close, plug, or abandon the well as required by 40 CFR 144.52(a)(7) and

(16) The corrective action proposed to be taken under 40 CFR 144.55.

(b) Prior to granting approval for the operation of a Class III well the Director shall consider the following information:

(1) All available logging and testing data on the well;

(2) A satisfactory demonstration of mechanical integrity for all new wells and for all existing salt solution wells pursuant to § 146.08;

(3) The anticipated maximum pressure and flow rate at which the permittee will operate;

(4) The results of the formation testing program;

(5) The actual injection procedures; and

(6) The status of corrective action on defective wells in the area of review.

(c) Prior to granting approval for the plugging and abandonment of a Class III well the Director shall consider the following information:

(1) The type and number of plugs to be used;

(2) The placement of each plug including the elevation of the top and bottom;

(3) The type, grade, and quantity of cement to be used;

(4) The method of placement of the plugs; and

(5) The procedure to be used to meet the requirements of § 146.10(c).

(Clean Water Act, Safe Drinking Water Act, Clean Air Act, Resource Conservation and Recovery Act: 42 U.S.C. 6905, 6912, 6925, 6927, 6974)

[45 FR 42500, June 24, 1980, as amended at 46 FR 43163, Aug. 27, 1981; 47 FR 5001, Feb. 3, 1982; 48 FR 14293, Apr. 1, 1983]

Subpart E—Criteria and Standards Applicable to Class IV Injection Wells [Reserved]

Subpart F—Criteria and Standards Applicable to Class V Injection Wells

§ 146.51 Applicability.

This subpart sets forth criteria and standards for underground injection control programs to regulate all injection not regulated in subparts B, C, D, and E.

(a) Generally, wells covered by this subpart inject non-hazardous fluids into or above formations that contain underground sources of drinking water. It includes all wells listed in § 146.5(e) but is not limited to those types of injection wells.

(b) It also includes wells not covered in Class IV that inject radioactive material listed in 10 CFR part 20, appendix B, table II, column 2.

[45 FR 42500, June 24, 1980, as amended at 47 FR 5001, Feb. 3, 1982]

Subpart G—Criteria and Standards Applicable to Class I Hazardous Waste Injection Wells

SOURCE: 53 FR 28148, July 26, 1988, unless otherwise noted.

§ 146.61 Applicability

(a) This subpart establishes criteria and standards for underground injection control programs to regulate Class I hazardous waste injection wells. Unless otherwise noted this subpart supplements the requirements of subpart A and applies instead of subpart B to Class I hazardous waste injection wells.

(b) *Definitions.*

Cone of influence means that area around the well within which increased

injection zone pressures caused by injection into the hazardous waste injection well would be sufficient to drive fluids into an underground source of drinking water (USDW).

Existing well means a Class I well which was authorized prior to August 25, 1988, by an approved State program, or an EPA-administered program or a well which has become a Class I well as a result of a change in the definition of the injected waste which would render the waste hazardous under § 261.3 of this part.

Injection interval means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

New well means any Class I hazardous waste injection well which is not an existing well.

Transmissive fault or fracture is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

§ 146.62 Minimum criteria for siting.

(a) All Class I hazardous waste injection wells shall be sited such that they inject into a formation that is beneath the lowermost formation containing within one quarter mile of the well bore an underground source of drinking water.

(b) The siting of Class I hazardous waste injection wells shall be limited to areas that are geologically suitable. The Director shall determine geologic suitability based upon:

(1) An analysis of the structural and stratigraphic geology, the hydrogeology, and the seismicity of the region;

(2) An analysis of the local geology and hydrogeology of the well site, including, at a minimum, detailed information regarding stratigraphy, structure and rock properties, aquifer hydrodynamics and mineral resources; and

(3) A determination that the geology of the area can be described confidently and that limits of waste fate and transport can be accurately predicted through the use of models.

(c) Class I hazardous waste injection wells shall be sited such that:

(1) The injection zone has sufficient permeability, porosity, thickness and

areal extent to prevent migration of fluids into USDWs.

(2) The confining zone:

(i) Is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into a USDW; and

(ii) Contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.

(d) The owner or operator shall demonstrate to the satisfaction of the Director that:

(1) The confining zone is separated from the base of the lowermost USDW by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW in the event of fluid movement in an unlocated borehole or transmissive fault; or

(2) Within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost USDW, considering density effects, injection pressures and any significant pumping in the overlying USDW; or

(3) There is no USDW present.

(4) The Director may approve a site which does not meet the requirements in paragraphs (d) (1), (2), or (3) of this section if the owner or operator can demonstrate to the Director that because of the geology, nature of the waste, or other considerations, abandoned boreholes or other conduits would not cause endangerment of USDWs.

§ 146.63 Area of review.

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of § 146.6. The area of review for Class I hazardous waste injection wells shall be a 2-mile radius around the well bore. The Director may specify a larger area of review based on the calculated cone of influence of the well.

§ 146.64 Corrective action for wells in the area of review.

For the purposes of Class I hazardous waste wells, this section shall apply to the exclusion of §§ 144.55 and 146.07.

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(a) The owner or operator of a Class I hazardous waste well shall as part of the permit application submit a plan to the Director outlining the protocol used to:

(1) Identify all wells penetrating the confining zone or injection zone within the area of review; and

(2) Determine whether wells are adequately completed or plugged.

(b) The owner or operator of a Class I hazardous waste well shall identify the location of all wells within the area of review that penetrate the injection zone or the confining zone and shall submit as required in § 146.70(a):

(1) A tabulation of all wells within the area of review that penetrate the injection zone or the confining zone; and

(2) A description of each well or type of well and any records of its plugging or completion.

(c) For wells that the Director determines are improperly plugged, completed, or abandoned, or for which plugging or completion information is unavailable, the applicant shall also submit a plan consisting of such steps or modification as are necessary to prevent movement of fluids into or between USDWs. Where the plan is adequate, the Director shall incorporate it into the permit as a condition. Where the Director's review of an application indicates that the permittee's plan is inadequate (based at a minimum on the factors in paragraph (e) of this section), the Director shall:

(1) Require the applicant to revise the plan;

(2) Prescribe a plan for corrective action as a condition of the permit; or

(3) Deny the application.

(d) Requirements:

(1) Existing injection wells. Any permit issued for an existing Class I hazardous waste injection well requiring corrective action other than pressure limitations shall include a compliance schedule requiring any corrective action accepted or prescribed under paragraph (c) of this section. Any such compliance schedule shall provide for compliance no later than 2 years following issuance of the permit and shall require observance of appropriate pressure limitations under paragraph (d)(3)

until all other corrective action measures have been implemented.

(2) New injection wells. No owner or operator of a new Class I hazardous waste injection well may begin injection until all corrective actions required under this section have been taken.

(3) The Director may require pressure limitations in lieu of plugging. If pressure limitations are used in lieu of plugging, the Director shall require as a permit condition that injection pressure be so limited that pressure in the injection zone at the site of any improperly completed or abandoned well within the area of review would not be sufficient to drive fluids into or between USDWs. This pressure limitation shall satisfy the corrective action requirement. Alternatively, such injection pressure limitation may be made part of a compliance schedule and may be required to be maintained until all other required corrective actions have been implemented.

(e) In determining the adequacy of corrective action proposed by the applicant under paragraph (c) of this section and in determining the additional steps needed to prevent fluid movement into and between USDWs, the following criteria and factors shall be considered by the Director:

(1) Nature and volume of injected fluid;

(2) Nature of native fluids or byproducts of injection;

(3) Geology;

(4) Hydrology;

(5) History of the injection operation;

(6) Completion and plugging records;

(7) Closure procedures in effect at the time the well was closed;

(8) Hydraulic connections with USDWs;

(9) Reliability of the procedures used to identify abandoned wells; and

(10) Any other factors which might affect the movement of fluids into or between USDWs.

§ 146.65 Construction requirements.

(a) *General.* All existing and new Class I hazardous waste injection wells shall be constructed and completed to:

(1) Prevent the movement of fluids into or between USDWs or into any unauthorized zones;

(2) Permit the use of appropriate testing devices and workover tools; and

(3) Permit continuous monitoring of injection tubing and long string casing as required pursuant to § 146.67(f).

(b) *Compatibility.* All well materials must be compatible with fluids with which the materials may be expected to come into contact. A well shall be deemed to have compatibility as long as the materials used in the construction of the well meet or exceed standards developed for such materials by the American Petroleum Institute, The American Society for Testing Materials, or comparable standards acceptable to the Director.

(c) *Casing and Cementing of New Wells.*

(1) Casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well, including the post-closure care period. The casing and cementing program shall be designed to prevent the movement of fluids into or between USDWs, and to prevent potential leaks of fluids from the well. In determining and specifying casing and cementing requirements, the Director shall consider the following information as required by § 146.70:

(i) Depth to the injection zone;

(ii) Injection pressure, external pressure, internal pressure and axial loading;

(iii) Hole size;

(iv) Size and grade of all casing strings (well thickness, diameter, nominal weight, length, joint specification and construction material);

(v) Corrosiveness of injected fluid, formation fluids and temperature;

(vi) Lithology of injection and confining zones;

(vii) Type or grade of cement; and

(viii) Quantity and chemical composition of the injected fluid.

(2) One surface casing string shall, at a minimum, extend into the confining bed below the lowest formation that contains a USDW and be cemented by circulating cement from the base of the casing to the surface, using a minimum of 120% of the calculated annual volume. The Director may require more than 120% when the geology or other circumstances warrant it.

(3) At least one long string casing, using a sufficient number of

centralizers, shall extend to the injection zone and shall be cemented by circulating cement to the surface in one or more stages:

(i) Of sufficient quantity and quality to withstand the maximum operating pressure; and

(ii) In a quantity no less than 120% of the calculated volume necessary to fill the annular space. The Director may require more than 120% when the geology or other circumstances warrant it.

(4) Circulation of cement may be accomplished by staging. The Director may approve an alternative method of cementing in cases where the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate by using logs that the cement is continuous and does not allow fluid movement behind the well bore.

(5) Casings, including any casing connections, must be rated to have sufficient structural strength to withstand, for the design life of the well:

(i) The maximum burst and collapse pressures which may be experienced during the construction, operation and closure of the well; and

(ii) The maximum tensile stress which may be experienced at any point along the length of the casing during the construction, operation, and closure of the well.

(6) At a minimum, cement and cement additives must be of sufficient quality and quantity to maintain integrity over the design life of the well.

(d) *Tubing and packer.* (1) All Class I hazardous waste injection wells shall inject fluids through tubing with a packer set at a point specified by the Director.

(2) In determining and specifying requirements for tubing and packer, the following factors shall be considered:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical content, corrosiveness, temperature and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate (intermittent or continuous), temperature and volume of injected fluid;

(vi) Size of casing; and

(vii) Tubing tensile, burst, and collapse strengths.

(3) The Director may approve the use of a fluid seal if he determines that the following conditions are met:

(i) The operator demonstrates that the seal will provide a level of protection comparable to a packer;

(ii) The operator demonstrates that the staff is, and will remain, adequately trained to operate and maintain the well and to identify and interpret variations in parameters of concern;

(iii) The permit contains specific limitations on variations in annular pressure and loss of annular fluid;

(iv) The design and construction of the well allows continuous monitoring of the annular pressure and mass balance of annular fluid; and

(v) A secondary system is used to monitor the interface between the annulus fluid and the injection fluid and the permit contains requirements for testing the system every three months and recording the results.

§ 146.66 Logging, sampling, and testing prior to new well operation.

(a) During the drilling and construction of a new Class I hazardous waste injection well, appropriate logs and tests shall be run to determine or verify the depth, thickness, porosity, permeability, and rock type of, and the salinity of any entrained fluids in, all relevant geologic units to assure conformance with performance standards in § 146.65, and to establish accurate baseline data against which future measurements may be compared. A descriptive report interpreting results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the Director. At a minimum, such logs and tests shall include:

(1) Deviation checks during drilling on all holes constructed by drilling a pilot hole which are enlarged by reaming or another method. Such checks shall be at sufficiently frequent intervals to determine the location of the borehole and to assure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling; and

(2) Such other logs and tests as may be needed after taking into account the availability of similar data in the area of the drilling site, the construction

plan, and the need for additional information that may arise from time to time as the construction of the well progresses. At a minimum, the following logs shall be required in the following situations:

(i) Upon installation of the surface casing:

(A) Resistivity, spontaneous potential, and caliper logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(ii) Upon installation of the long string casing:

(A) Resistivity, spontaneous potential, porosity, caliper, gamma ray, and fracture finder logs before the casing is installed; and

(B) A cement bond and variable density log, and a temperature log after the casing is set and cemented.

(iii) The Director may allow the use of an alternative to the above logs when an alternative will provide equivalent or better information; and

(3) A mechanical integrity test consisting of:

(i) A pressure test with liquid or gas;

(ii) A radioactive tracer survey;

(iii) A temperature or noise log;

(iv) A casing inspection log, if required by the Director; and

(v) Any other test required by the Director.

(b) Whole cores or sidewall cores of the confining and injection zones and formation fluid samples from the injection zone shall be taken. The Director may accept cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The Director may require the owner or operator to core other formations in the borehole.

(c) The fluid temperature, pH, conductivity, pressure and the static fluid level of the injection zone must be recorded.

(d) At a minimum, the following information concerning the injection and confining zones shall be determined or calculated for Class I hazardous waste injection wells:

(1) Fracture pressure;

(2) Other physical and chemical characteristics of the injection and confining zones; and

(3) Physical and chemical characteristics of the formation fluids in the injection zone.

(e) Upon completion, but prior to operation, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

- (1) A pump test; or
- (2) Injectivity tests.

(f) The Director shall have the opportunity to witness all logging and testing by this subpart. The owner or operator shall submit a schedule of such activities to the Director 30 days prior to conducting the first test.

§ 146.67 Operating requirements.

(a) Except during stimulation, the owner or operator shall assure that injection pressure at the wellhead does not exceed a maximum which shall be calculated so as to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. The owner or operator shall assure that the injection pressure does not initiate fractures or propagate existing fractures in the confining zone, nor cause the movement of injection or formation fluids into a USDW.

(b) Injection between the outermost casing protecting USDWs and the well bore is prohibited.

(c) The owner or operator shall maintain an annulus pressure that exceeds the operating injection pressure, unless the Director determines that such a requirement might harm the integrity of the well. The fluid in the annulus shall be noncorrosive, or shall contain a corrosion inhibitor.

(d) The owner or operator shall maintain mechanical integrity of the injection well at all times.

(e) Permit requirements for owners or operators of hazardous waste wells which inject wastes which have the potential to react with the injection formation to generate gases shall include:

(1) Conditions limiting the temperature, pH or acidity of the injected waste; and

(2) Procedures necessary to assure that pressure imbalances which might cause a backflow or blowout do not occur.

(f) The owner or operator shall install and use continuous recording devices to monitor: the injection pressure; the flow rate, volume, and temperature of injected fluids; and the pressure on the annulus between the tubing and the long string casing, and shall install and use:

(1) Automatic alarm and automatic shut-off systems, designed to sound and shut-in the well when pressures and flow rates or other parameters approved by the Director exceed a range and/or gradient specified in the permit; or

(2) Automatic alarms, designed to sound when the pressures and flow rates or other parameters approved by the Director exceed a rate and/or gradient specified in the permit, in cases where the owner or operator certifies that a trained operator will be on-site at all times when the well is operating.

(g) If an automatic alarm or shutdown is triggered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the alarm or shutoff. If, upon such investigation, the well appears to be lacking mechanical integrity, or if monitoring required under paragraph (f) of this section otherwise indicates that the well may be lacking mechanical integrity, the owner or operator shall:

(1) Cease injection of waste fluids unless authorized by the Director to continue or resume injection.

(2) Take all necessary steps to determine the presence or absence of a leak; and

(3) Notify the Director within 24 hours after the alarm or shutdown.

(h) If a loss of mechanical integrity is discovered pursuant to paragraph (g) of this section or during periodic mechanical integrity testing, the owner or operator shall:

(1) Immediately cease injection of waste fluids;

(2) Take all steps reasonably necessary to determine whether there may have been a release of hazardous wastes or hazardous waste constituents into any unauthorized zone;

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(3) Notify the Director within 24 hours after loss of mechanical integrity is discovered;

(4) Notify the Director when injection can be expected to resume; and

(5) Restore and demonstrate mechanical integrity to the satisfaction of the Director prior to resuming injection of waste fluids.

(1) Whenever the owner or operator obtains evidence that there may have been a release of injected wastes into an unauthorized zone:

(i) The owner or operator shall immediately cease injection of waste fluids, and:

(1) Notify the Director within 24 hours of obtaining such evidence;

(ii) Take all necessary steps to identify and characterize the extent of any release;

(iii) Comply with any remediation plan specified by the Director;

(iv) Implement any remediation plan approved by the Director; and

(v) Where such release is into a USDW currently serving as a water supply, place a notice in a newspaper of general circulation.

(2) The Director may allow the operator to resume injection prior to completing cleanup action if the owner or operator demonstrates that the injection operation will not endanger USDWs.

(j) The owner or operator shall notify the Director and obtain his approval prior to conducting any well workover.

§ 146.68 Testing and monitoring requirements.

Testing and monitoring requirements shall at a minimum include:

(a) Monitoring of the injected wastes.

(1) The owner or operator shall develop and follow an approved written waste analysis plan that describes the procedures to be carried out to obtain a detailed chemical and physical analysis of a representative sample of the waste, including the quality assurance procedures used. At a minimum, the plan shall specify:

(i) The parameters for which the waste will be analyzed and the rationale for the selection of these parameters;

(ii) The test methods that will be used to test for these parameters; and

(iii) The sampling method that will be used to obtain a representative sample of the waste to be analyzed.

(2) The owner or operator shall repeat the analysis of the injected wastes as described in the waste analysis plan at frequencies specified in the waste analysis plan and when process or operating changes occur that may significantly alter the characteristics of the waste stream.

(3) The owner or operator shall conduct continuous or periodic monitoring of selected parameters as required by the Director.

(4) The owner or operator shall assure that the plan remains accurate and the analyses remain representative.

(b) Hydrogeologic compatibility determination. The owner or operator shall submit information demonstrating to the satisfaction of the Director that the waste stream and its anticipated reaction products will not alter the permeability, thickness or other relevant characteristics of the confining or injection zones such that they would no longer meet the requirements specified in § 146.62.

(c) Compatibility of well materials.

(1) The owner or operator shall demonstrate that the waste stream will be compatible with the well materials with which the waste is expected to come into contact, and submit to the Director a description of the methodology used to make that determination. Compatibility for purposes of this requirement is established if contact with injected fluids will not cause the well materials to fail to satisfy any design requirement imposed under § 146.65(b).

(2) The Director shall require continuous corrosion monitoring of the construction materials used in the well for wells injecting corrosive waste, and may require such monitoring for other waste, by:

(i) Placing coupons of the well construction materials in contact with the waste stream; or

(ii) Routing the waste stream through a loop constructed with the material used in the well; or

(iii) Using an alternative method approved by the Director.

(3) If a corrosion monitoring program is required:

(i) The test shall use materials identical to those used in the construction of the well, and such materials must be continuously exposed to the operating pressures and temperatures (measured at the well head) and flow rates of the injection operation; and

(ii) The owner or operator shall monitor the materials for loss of mass, thickness, cracking, pitting and other signs of corrosion on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in § 146.65(b).

(d) *Periodic mechanical integrity testing.* In fulfilling the requirements of § 146.8, the owner or operator of a Class I hazardous waste injection well shall conduct the mechanical integrity testing as follows:

(1) The long string casing, injection tube, and annular seal shall be tested by means of an approved pressure test with a liquid or gas annually and whenever there has been a well workover;

(2) The bottom-hole cement shall be tested by means of an approved radioactive tracer survey annually;

(3) An approved temperature, noise, or other approved log shall be run at least once every five years to test for movement of fluid along the borehole. The Director may require such tests whenever the well is worked over;

(4) Casing inspection logs shall be run whenever the owner or operator conducts a workover in which the injection string is pulled, unless the Director waives this requirement due to well construction or other factors which limit the test's reliability, or based upon the satisfactory results of a casing inspection log run within the previous five years. The Director may require that a casing inspection log be run every five years, if he has reason to believe that the integrity of the long string casing of the well may be adversely affected by naturally-occurring or man-made events;

(5) Any other test approved by the Director in accordance with the procedures in § 146.8(d) may also be used.

(e) *Ambient monitoring.* (1) Based on a site-specific assessment of the potential for fluid movement from the well

or injection zone, and on the potential value of monitoring wells to detect such movement, the Director shall require the owner or operator to develop a monitoring program. At a minimum, the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

(2) When prescribing a monitoring system the Director may also require:

(i) Continuous monitoring for pressure changes in the first aquifer overlying the confining zone. When such a well is installed, the owner or operator shall, on a quarterly basis, sample the aquifer and analyze for constituents specified by the Director;

(ii) The use of indirect, geophysical techniques to determine the position of the waste front, the water quality in a formation designated by the Director, or to provide other site specific data;

(iii) Periodic monitoring of the ground water quality in the first aquifer overlying the injection zone;

(iv) Periodic monitoring of the ground water quality in the lowermost USDW; and

(v) Any additional monitoring necessary to determine whether fluids are moving into or between USDWs.

(f) The Director may require seismicity monitoring when he has reason to believe that the injection activity may have the capacity to cause seismic disturbances.

[53 FR 28148, July 26, 1988, as amended at 57 FR 46294, Oct. 7, 1992]

§ 146.69 Reporting requirements.

Reporting requirements shall, at a minimum, include:

(a) Quarterly reports to the Director containing:

(1) The maximum injection pressure;

(2) A description of any event that exceeds operating parameters for annulus pressure or injection pressure as specified in the permit;

(3) A description of any event which triggers an alarm or shutdown device required pursuant to § 146.67(f) and the response taken;

(4) The total volume of fluid injected;

(5) Any change in the annular fluid volume;

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(6) The physical, chemical and other relevant characteristics of injected fluids; and

(7) The results of monitoring prescribed under § 146.68.

(b) Reporting, within 30 days or with the next quarterly report whichever comes later, the results of:

(1) Periodic tests of mechanical integrity;

(2) Any other test of the injection well conducted by the permittee if required by the Director; and

(3) Any well workover.

§ 146.70 Information to be evaluated by the Director.

This section sets forth the information which must be evaluated by the Director in authorizing Class I hazardous waste injection wells. For a new Class I hazardous waste injection well, the owner or operator shall submit all the information listed below as part of the permit application. For an existing or converted Class I hazardous waste injection well, the owner or operator shall submit all information listed below as part of the permit application except for those items of information which are current, accurate, and available in the existing permit file. For both existing and new Class I hazardous waste injection wells, certain maps, cross-sections, tabulations of wells within the area of review and other data may be included in the application by reference provided they are current and readily available to the Director (for example, in the permitting agency's files) and sufficiently identifiable to be retrieved. In cases where EPA issues the permit, all the information in this section must be submitted to the Administrator or his designee.

(a) Prior to the issuance of a permit for an existing Class I hazardous waste injection well to operate or the construction or conversion of a new Class I hazardous waste injection well, the Director shall review the following to assure that the requirements of this part and part 144 are met:

(1) Information required in § 144.31;

(2) A map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show 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, water wells and other pertinent surface features, including residences and roads. The map should also show faults, if known or suspected;

(3) A tabulation of all wells within the area of review which penetrate the proposed injection zone or confining zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion and any additional information the Director may require;

(4) The protocol followed to identify, locate and ascertain the condition of abandoned wells within the area of review which penetrate the injection or the confining zones;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all underground sources of drinking water within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection;

(6) Maps and cross-sections detailing the geologic structure of the local area;

(7) Maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data;

(i) Average and maximum daily rate and volume of the fluid to be injected; and

(ii) Average and maximum injection pressure;

(9) Proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and the confining zone;

(10) Proposed stimulation program;

(11) Proposed injection procedure;

(12) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(13) Contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any USDW;

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(14) Plans (including maps) for meeting monitoring requirements of § 146.68;

(15) For wells within the area of review which penetrate the injection zone or the confining zone but are not properly completed or plugged, the corrective action to be taken under § 146.64;

(16) Construction procedures including a cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program; and

(17) A demonstration pursuant to part 144, subpart F, that the applicant has the resources necessary to close, plug or abandon the well and for post-closure care.

(b) Prior to the Director's granting approval for the operation of a Class I hazardous waste injection well, the owner or operator shall submit and the Director shall review the following information, which shall be included in the completion report:

(1) All available logging and testing program data on the well;

(2) A demonstration of mechanical integrity pursuant to § 146.68;

(3) The anticipated maximum pressure and flow rate at which the permittee will operate;

(4) The results of the injection zone and confining zone testing program as required in § 146.70(a)(9);

(5) The actual injection procedure;

(6) The compatibility of injected waste with fluids in the injection zone and minerals in both the injection zone and the confining zone and with the materials used to construct the well;

(7) The calculated area of review based on data obtained during logging and testing of the well and the formation, and where necessary revisions to the information submitted under § 146.70(a)(2) and (3).

(8) The status of corrective action on wells identified in § 146.70(a)(15).

(c) Prior to granting approval for the plugging and abandonment (*i.e.*, closure) of a Class I hazardous waste injection well, the Director shall review the information required in §§ 146.71(a)(4) and 146.72(a).

(d) Any permit issued for a Class I hazardous waste injection well for disposal on the premises where the waste

is generated shall contain a certification by the owner or operator that:

(1) The generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable; and

(2) Injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

§ 146.71 Closure.

(a) *Closure Plan.* The owner or operator of a Class I hazardous waste injection well shall prepare, maintain, and comply with a plan for closure of the well that meets the requirements of paragraph (d) of this section and is acceptable to the Director. The obligation to implement the closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the method of closure reflected in the plan for approval by the Director no later than the date on which notice of closure is required to be submitted to the Director under paragraph (b) of this section.

(3) The plan shall assure financial responsibility as required in § 144.52(a)(7).

(4) The plan shall include the following information:

(i) The type and number of plugs to be used;

(ii) The placement of each plug including the elevation of the top and bottom of each plug;

(iii) The type and grade and quantity of material to be used in plugging;

(iv) The method of placement of the plugs;

(v) Any proposed test or measure to be made;

(vi) The amount, size, and location (by depth) of casing and any other materials to be left in the well;

(vii) The method and location where casing is to be parted, if applicable;

(viii) The procedure to be used to meet the requirements of paragraph (d)(5) of this section;

(ix) The estimated cost of closure; and

(x) Any proposed test or measure to be made.

(5) The Director may modify a closure plan following the procedures of § 124.5.

(6) An owner or operator of a Class I hazardous waste injection well who ceases injection temporarily, may keep the well open provided he:

(i) Has received authorization from the Director; and

(ii) Has described actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary disuse. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

(7) The owner or operator of a well that has ceased operations for more than two years shall notify the Director 30 days prior to resuming operation of the well.

(b) *Notice of intent to close.* The owner or operator shall notify the Director at least 60 days before closure of a well. At the discretion of the Director, a shorter notice period may be allowed.

(c) *Closure report.* Within 60 days after closure or at the time of the next quarterly report (whichever is less) the owner or operator shall submit a closure report to the Director. If the quarterly report is due less than 15 days after completion of closure, then the report shall be submitted within 60 days after closure. The report shall be certified as accurate by the owner or operator and by the person who performed the closure operation (if other than the owner or operator). Such report shall consist of either:

(1) A statement that the well was closed in accordance with the closure plan previously submitted and approved by the Director; or

(2) Where actual closure differed from the plan previously submitted, a written statement specifying the differences between the previous plan and the actual closure.

(d) *Standards for well closure.* (1) Prior to closing the well, the owner or operator shall observe and record the pressure decay for a time specified by the Director. The Director shall analyze the pressure decay and the transient pressure observations conducted pursuant to § 146.68(e)(1)(i) and determine whether the injection activity has conformed with predicted values.

(2) Prior to well closure, appropriate mechanical integrity testing shall be conducted to ensure the integrity of that portion of the long string casing and cement that will be left in the ground after closure. Testing methods may include:

(i) Pressure tests with liquid or gas;

(ii) Radioactive tracer surveys;

(iii) Noise, temperature, pipe evaluation, or cement bond logs; and

(iv) Any other test required by the Director.

(3) Prior to well closure, the well shall be flushed with a buffer fluid.

(4) Upon closure, a Class I hazardous waste well shall be plugged with cement in a manner that will not allow the movement of fluids into or between USDWs.

(5) 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 alternate method, approved by the Director, that will reliably provide a comparable level of protection.

(6) Each plug used shall be appropriately tagged and tested for seal and stability before closure is completed.

(7) The well to be closed 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).

§ 146.72 Post-closure care.

(a) The owner or operator of a Class I hazardous waste well shall prepare,

maintain, and comply with a plan for post-closure care that meets the requirements of paragraph (b) of this section and is acceptable to the Director. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall submit the plan as a part of the permit application and, upon approval by the Director, such plan shall be a condition of any permit issued.

(2) The owner or operator shall submit any proposed significant revision to the plan as appropriate over the life of the well, but no later than the date of the closure report required under § 146.71(c).

(3) The plan shall assure financial responsibility as required in § 146.73.

(4) The plan shall include the following information:

(i) The pressure in the injection zone before injection began;

(ii) The anticipated pressure in the injection zone at the time of closure;

(iii) The predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW;

(iv) Predicted position of the waste front at closure;

(v) The status of any cleanups required under § 146.64; and

(vi) The estimated cost of proposed post-closure care.

(5) At the request of the owner or operator, or on his own initiative, the Director may modify the post-closure plan after submission of the closure report following the procedures in § 124.5.

(b) The owner or operator shall:

(1) Continue and complete any cleanup action required under § 146.64, if applicable;

(2) Continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW. The Director may extend the period of post-

closure monitoring if he determines that the well may endanger a USDW.

(3) Submit a survey plat to the local zoning authority designated by the Director. The plat shall indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat shall be submitted to the Regional Administrator of the appropriate EPA Regional Office.

(4) Provide appropriate notification and information to such State and local authorities as have cognizance over drilling activities to enable such State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the well's confining or injection zone.

(5) Retain, for a period of three years following well closure, records reflecting the nature, composition and volume of all injected fluids. The Director shall require the owner or operator to deliver the records to the Director at the conclusion of the retention period, and the records shall thereafter be retained at a location designated by the Director for that purpose.

(c) Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument which is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(1) The fact that land has been used to manage hazardous waste;

(2) The name of the State agency or local authority with which the plat was filed, as well as the address of the Regional Environmental Protection Agency Office to which it was submitted;

(3) The type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.

§ 146.73 Financial responsibility for post-closure care.

The owner or operator shall demonstrate and maintain financial responsibility for post-closure by using a

trust fund, surety bond, letter of credit, financial test, insurance or corporate guarantee that meets the specifications for the mechanisms and instruments revised as appropriate to cover closure and post-closure care in 40 CFR part 144, subpart F. The amount of the funds available shall be no less than the amount identified in § 146.72(a)(4)(vi). The obligation to maintain financial responsibility for post-closure care survives the termination of a permit or the cessation of injection. The requirement to maintain financial responsibility is enforceable regardless of whether the requirement is a condition of the permit.

Subpart H—Criteria and Standards Applicable to Class VI Wells

SOURCE: 76 FR 77291, Dec. 10, 2010, unless otherwise noted.

§ 146.81 Applicability.

(a) This subpart establishes criteria and standards for underground injection control programs to regulate any Class VI carbon dioxide geologic sequestration injection wells.

(b) This subpart applies to any wells used to inject carbon dioxide specifically for the purpose of geologic sequestration, i.e., the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations.

(c) This subpart also applies to owners or operators of permit- or rule-authorized Class I, Class II, or Class V experimental carbon dioxide injection projects who seek to apply for a Class VI geologic sequestration permit for their well or wells. Owners or operators seeking to convert existing Class I, Class II, or Class V experimental wells to Class VI geologic sequestration wells must demonstrate to the Director that the wells were engineered and constructed to meet the requirements at § 146.86(a) and ensure protection of USDWs, in lieu of requirements at §§ 146.86(b) and 146.87(a). By December 10, 2011, owners or operators of either Class I wells previously permitted for the purpose of geologic sequestration or Class V experimental technology wells no longer being used for experimental purposes that will continue in-

jection of carbon dioxide for the purpose of GS must apply for a Class VI permit. A converted well must still meet all other requirements under part 146.

(d) *Definitions.* The following definitions apply to this subpart. To the extent that these definitions conflict with those in § 144.3 or § 146.3 of this chapter these definitions govern for Class VI wells:

Area of review means the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and displaced fluids, and is based on available site characterization, monitoring, and operational data as set forth in § 146.84.

Carbon dioxide plume means the extent underground, in three dimensions, of an injected carbon dioxide stream.

Carbon dioxide stream means carbon dioxide that has been captured from an emission source (e.g., a power plant), plus incidental associated substances derived from the source materials and the capture process, and any substances added to the stream to enable or improve the injection process. This subpart does not apply to any carbon dioxide stream that meets the definition of a hazardous waste under 40 CFR part 261.

Confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying the injection zone(s) that acts as barrier to fluid movement. For Class VI wells operating under an injection depth waiver, confining zone means a geologic formation, group of formations, or part of a formation stratigraphically overlying and underlying the injection zone(s).

Corrective action means the use of Director-approved methods to ensure that wells within the area of review do not serve as conduits for the movement of fluids into underground sources of drinking water (USDW).

Geologic sequestration means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This

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boundaries of the formal Navajo Reservation, including the three satellite reservations (Alamo, Canoncito and Ramah), but excluding the former Bennett Freeze Area, the Four Corners Power Plant and the Navajo Generating Station; and on Navajo Nation tribal trust lands and trust allotments outside those exterior boundaries (collectively referred to as "Navajo Indian lands for which EPA has granted the Navajo Nation primacy for the SDWA Class II UIC program"), is the program administered by the Navajo Nation approved by EPA pursuant to section 1425 of the SDWA. Notice of this approval was published in the *FEDERAL REGISTER* on November 4, 2008; the effective date of this program is December 4, 2008. This program consists of the following elements as submitted to EPA in the Navajo Nation's program application:

(a) *Incorporation by reference.* The requirements set forth in the Navajo Nation Statutes, Regulations and Resolution notebook, dated October 2008, are hereby incorporated by reference and made part of the applicable UIC program under the SDWA for Class II injection wells on Navajo Indian lands for which EPA has granted the Navajo Nation primacy for the SDWA Class II UIC program (as defined in this section). This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained or inspected at the Navajo Nation Environmental Protection Agency UIC Office, Old NAPA Auto Parts Building (Tribal Bldg. #S009-080), Highway 64, Shiprock, New Mexico 87420 (505-368-1040), at the Environmental Protection Agency, Region 9, 75 Hawthorne Street, San Francisco, California 94105-3920 (415-972-3533), or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) *Memorandum of Agreement (MOA).* The MOA between EPA Region 9 and the Navajo Nation, signed by the EPA Regional Administrator on August 21, 2001. The Criminal Enforcement MOA

between EPA Region 9 and the Navajo Nation, signed by EPA on October 30, 2006.

(c) *Statement of legal authority.* (1) "Statement of the Attorney General of the Navajo Nation Pursuant to 40 CFR 145.24", August 27, 2001.

(2) "Statement of the Attorney General of the Navajo Nation Regarding the Regulatory Authority and Jurisdiction of the Navajo Nation with Respect To Its Underground Injection Control Program", July 3, 2002.

(3) "Supplemental Statement of the Navajo Nation Attorney General Regarding the Regulatory Authority and Jurisdiction of the Navajo Nation to Operate an Underground Injection Control Program under the Safe Drinking Water Act", October 11, 2006.

(d) *Program Description.* The Program Description submitted as part of the Navajo Nation's application, and any other materials submitted as part of this application or as a supplement thereto.

[73 FR 65565, Nov. 4, 2008]

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

Subpart A—General

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AUTHORITY: Secs. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

SOURCE: 53 FR 28154, July 26, 1988, unless otherwise noted.

Subpart A—General

§ 148.1 Purpose, scope and applicability.

(a) This part identifies wastes that are restricted from disposal into Class I wells and defines those circumstances under which a waste, otherwise prohibited from injection, may be injected.

(b) The requirements of this part apply to owners or operators of Class I hazardous waste injection wells used to inject hazardous waste.

(c) Wastes otherwise prohibited from injection may continue to be injected:

(1) If an extension from the effective date of a prohibition has been granted pursuant to § 148.4 with respect to such wastes; or

(2) If an exemption from a prohibition has been granted in response to a petition filed under § 148.20 to allow injection of restricted wastes with respect to those wastes and wells covered by the exemption; or

(3) If the waste is generated by a conditionally exempt small quantity generator, as defined in § 261.5; or

(d) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this part, or part 268 of this chapter, are not prohibited if the wastes:

(1) Are disposed into a nonhazardous or hazardous injection well as defined under 40 CFR § 146.6(a); and

(2) Do not exhibit any prohibited characteristic of hazardous waste identified

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in 40 CFR part 261, subpart C at the point of injection.

[53 FR 28154, July 26, 1988, as amended at 55 FR 22683, June 1, 1990; 57 FR 8088, Mar. 6, 1992; 57 FR 31783, July 20, 1992; 60 FR 33932, June 29, 1995; 61 FR 15596, Apr. 8, 1996; 61 FR 33682, June 28, 1996]

§ 148.2 Definitions.

Injection interval means that part of the injection zone in which the well is screened, or in which the waste is otherwise directly emplaced.

Transmissive fault or fracture is a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

§ 148.3 Dilution prohibited as a substitute for treatment.

The prohibition of § 268.3 shall apply to owners or operators of Class I hazardous waste injection wells.

§ 148.4 Procedures for case-by-case extensions to an effective date.

The owner or operator of a Class I hazardous waste injection well may submit an application to the Administrator for an extension of the effective date of any applicable prohibition established under subpart B of this part according to the procedures of § 268.5.

§ 148.5 Waste analysis.

Generators of hazardous wastes that are disposed of into Class I injection wells must comply with the applicable requirements of § 268.7 (a) and (b). Owners or operators of Class I hazardous waste injection wells must comply with the applicable requirements of § 268.7(c).

Subpart B—Prohibitions on Injection

§ 148.10 Waste specific prohibitions—solvent wastes.

(a) Effective August 8, 1988, the spent solvent wastes specified in § 261.31 as EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005 are prohibited from underground injection unless the solvent waste is a solvent-water mixture or solvent-containing sludge containing less than 1 percent total F001-F005 solvent constituents listed in Table A of this section.

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(b) Effective August 8, 1990, all spent F001-F005 solvent wastes containing less than 1 percent total F001-F005 solvent constituents listed in Table A of this section are prohibited from injection.

(c) Effective August 8, 1990, all spent F002 and F005 wastes containing solvent constituents listed in Table B of this section are prohibited from underground injection at off-site injection facilities.

(d) Effective November 8, 1990, the wastes specified in paragraph (c) of this section are prohibited from underground injection at on-site injection facilities.

(e) The requirements of paragraphs (a) and (b) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

TABLE A

Acetone
n-Butyl alcohol
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Cresols and cresylic acid
Cyclohexanone
1,2-dichlorobenzene
Ethyl acetate
Ethyl benzene
Ethyl ether
Isobutanol
Methanol
Methylene chloride
Methylene chloride (from the pharmaceutical industry)
Methyl ethyl ketone
Methyl isobutyl ketone
Nitrobenzene
Pyridine
Tetrachloroethylene
Toulene
1,1,1-Trichloroethane
1,2,2-Trichloro-1,2,2-trifluoroethane
Trichloroethylene
Trichlorofluoromethane
Xylene

TABLE B

Benzene
2-Ethoxyethanol

2-Nitropropane
1,1,2-Trichloroethane

[53 FR 28154, July 26, 1988, as amended at 54 FR 25422, June 14, 1989; 56 FR 3876, Jan. 31, 1991; 57 FR 8088, Mar. 6, 1992]

§ 148.11 Waste specific prohibitions—dioxin-containing wastes.

(a) Effective August 8, 1988, the dioxin-containing wastes specified in § 261.31 as EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, F027, and F028, and prohibited from underground injection.

(b) The requirements of paragraph (a) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

[53 FR 28154, July 26, 1988, as amended at 54 FR 25422, June 14, 1989]

§ 148.12 Waste specific prohibitions—California list wastes.

(a) Effective August 8, 1988, the hazardous wastes listed in 40 CFR 268.32 containing polychlorinated biphenyls at concentrations greater than or equal to 50 ppm or halogenated organic compounds at concentrations greater than or equal to 10,000 mg/kg are prohibited from underground injection.

(b) Effective August 8, 1990, the following hazardous wastes are prohibited from underground injection:

(1) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/l;

(2) Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing the following metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:

(i) Arsenic and/or compounds (as As) 500 mg/l;

(ii) Cadmium and/or compounds (as Cd) 100 mg/l;

(iii) Chromium (VI) and/or compounds (as Cr VI) 500 mg/l;

(iv) Lead and/or compounds (as Pb) 500 mg/l;

(v) Mercury and/or compounds (as Hg) 20 mg/l;

(vi) Nickel and/or compounds (as Ni) 134 mg/l;

(vii) Selenium and/or compounds (as Se) 100 mg/l; and

(viii) Thallium and/or compounds (as Tl) 130 mg/l;

(3) Liquid hazardous waste having a pH less than or equal to two (2.0); and

(4) Hazardous wastes containing halogenated organic compounds in total concentration less than 10,000 mg/kg but greater than or equal to 1,000 mg/kg.

(c) The requirements of paragraphs (a) and (b) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension is granted under § 148.4 of this part.

[53 FR 30918, Aug. 16, 1988, as amended at 53 FR 41602, Oct. 24, 1988]

§ 148.14 Waste specific prohibitions—first third wastes.

(a) Effective June 7, 1989, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F006 (nonwastewaters) and the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K001, K015 (wastewaters), K016 (at concentrations greater than or equal to 1%), K018, K019, K020, K021 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K022 (nonwastewaters), K024, K030, K036 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K037, K044, K045, non-explosive K046 (nonwastewaters), K047,

K048, K060 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K061 (nonwastewaters), noncalcium sulfate K069 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes), K086 solvent washes, K087, K099, K101 (all wastewaters and less than 1% total arsenic nonwastewaters), K102 (all wastewaters and less than 1% total arsenic nonwastewaters), and K103 are prohibited from underground injection.

(b) Effective June 8, 1989, the waste specified in 40 CFR 261.32 as EPA Hazardous Waste number K036 (wastewaters); and the wastes specified in 40 CFR 261.33 as P030, P039, P041, P063, P071, P089, P094, P097, U221, and U223 are prohibited from underground injection.

(c) Effective July 8, 1989, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F008 and F009 are prohibited from underground injection.

(d) Effective August 8, 1990, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Number F006 (wastewaters) and F019; the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K004, K008, K015 (nonwastewaters), K017, K021 (wastewaters), K022 (wastewaters), K031, K035, K046 (reactive nonwastewaters and all wastewaters), K060 (wastewaters), K061 (wastewaters), K069 (calcium sulfate nonwastewaters and all wastewaters), K073, K083, K084, K085, K086 (all but solvent washes), K101 (high arsenic nonwastewaters), K102 (high arsenic nonwastewaters), and K106; and the wastes specified in 40 CFR part 261.33 as EPA Hazardous Waste Numbers P001, P004, P005, P010, P011, P012, P015, P016, P018, P020, P036, P037, P048, P050, P058, P059, P068, P069, P070, P081, P082, P084, P087, P092, P102, P105, P108, P110, P115, P120, P122, P123, U007, U009, U010, U012, U016, U018, U019, U022, U029, U031, U036, U037, U041, U043, U044, U046, U050, U051, U053, U061, U063, U064, U066, U067, U074, U077, U078, U086,

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U089, U103, U105, U108, U115, U122, U124, U129, U130, U133, U134, U137, U151, U154, U155, U157, U158, U159, U171, U177, U180, U185, U188, U192, U200, U209, U210, U211, U219, U220, U226, U227, U228, U237, U238, U248, and U249 are prohibited from underground injection at off-site injection facilities.

(e) Effective August 8, 1990, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K049, K050, K051, K052, K062, K071, and K104 are prohibited from underground injection.

(f) Effective November 8, 1990, the wastes specified in paragraph (d) of this section are prohibited from underground injection at on-site injection facilities.

(g) Effective June 7, 1991, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K016 (at concentrations less than 1%) are prohibited from underground injection.

(h) Effective June 8, 1991, the waste specified in 40 CFR 261.31 as EPA Hazardous Waste number F007; and the wastes specified in 40 CFR 261.32 as K011 (nonwastewaters) and K013 (nonwastewaters) are prohibited from underground injection.

(i) Effective May 8, 1992, the wastes specified in 40 CFR 261.32 and 261.33 as EPA Hazardous Waste Numbers K011 (wastewaters), K013 (wastewaters), and K014 are prohibited from underground injection.

(j) The requirements of paragraphs (a) through (i) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

[54 FR 25423, June 14, 1989, as amended at 54 FR 26647, June 23, 1989; 54 FR 35328, Aug. 25, 1989; 55 FR 22683, June 1, 1990]

§ 148.15 Waste specific prohibitions—second third wastes.

(a) Effective June 7, 1989, the wastes specified in 40 CFR 261.32 as EPA Haz-

ardous Waste numbers K025 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes) are prohibited from underground injection.

(b) Effective June 8, 1989, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F010, F024; the wastes specified in 40 CFR 261.32 as K009 (nonwastewaters), K010, K027, K028, K029 (nonwastewaters), K038, K039, K040, K043, K095 (nonwastewaters), K096 (nonwastewaters), K113, K114, K115, K116; and wastes specified in 40 CFR 261.33 as P029, P040, P043, P044, P062, P074, P085, P098, P104, P106, P111, U028, U058, U107, and U235 are prohibited from underground injection.

(c) Effective July 8, 1989, and continuing until December 8, 1989, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste numbers F011 and F012 are prohibited from underground injection pursuant to the treatment standards specified in §§ 268.41 and 268.43 applicable to F007, F008, and F009 wastewaters and nonwastewaters. Effective December 8, 1989, F011 (nonwastewaters) and F012 (nonwastewaters) are prohibited pursuant to the treatment standards specified in §§ 268.41 and 268.43 applicable to F011 and F012 wastewaters and nonwastewaters.

(d) Effective August 8, 1990, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Number K025 (wastewaters), K029 (wastewaters), K041, K042, K095 (wastewaters), K096 (wastewaters), K097, K098, and K105; and the wastes specified in 40 CFR part 261.33 as P002, P003, P007, P008, P014, P026, P027, P049, P054, P057, P060, P066, P067, P072, P107, P112, P113, P114, U002, U003, U005, U008, U011, U014, U015, U020, U021, U023, U025, U026, U032, U035, U047, U049, U057, U059, U060, U062, U070, U073, U080, U083, U092, U093, U094, U095, U097, U098, U099, U101, U106, U109, U110, U111, U114, U116, U119, U127, U128, U131, U135, U138, U140, U142, U143, U144, U146, U147, U149, U150, U161, U162, U163, U164, U165, U168, U169, U170, U172, U173, U174, U176, U178, U179, U189, U193, U196, U203, U205, U206, U208, U213, U214, U215, U216, U217,

U218, U239, and U244 are prohibited from underground injection at off-site injection facilities.

(e) Effective June 8, 1991, the waste specified in 40 CFR 261.32 as EPA Hazardous Waste number K009 (wastewaters) is prohibited from underground injection.

(f) Effective November 8, 1990, the wastes specified in paragraph (d) of this section are prohibited from underground injection at on-site injection facilities.

(g) The requirements of paragraphs (a) through (f) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

[54 FR 25423, June 14, 1989, as amended at 54 FR 26647, June 23, 1989; 55 FR 22683, June 1, 1990]

§ 148.16 Waste specific prohibitions—third third wastes.

(a) Effective June 7, 1989, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K100 (nonwastewaters generated by the process described in the waste listing description and disposed after August 17, 1988, and not generated in the course of treating wastewater forms of these wastes) are prohibited from underground injection.

(b) Effective June 8, 1989, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K005 (nonwastewaters), K007 (nonwastewaters), K023, K093, K094; and the wastes specified in 40 CFR 261.33 as P013, P021, P099, P109, P121, U069, U087, U088, U102, and U190 are prohibited from underground injection.

(c) Effective August 8, 1990, the wastes identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (nonwastewaters); the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K002, K003, K005 (wastewaters), K006, K007

(wastewaters), K026, K032, K033, K034, and K100 (wastewaters); the wastes specified in 40 CFR 261.33 as P006, P009, P017, P022, P023, P024, P028, P031, P033, P034, P038, P042, P045, P046, P047, P051, P056, P064, P065, P073, P075, P076, P077, P078, P088, P093, P095, P096, P101, P103, P116, P118, P119, U001, U004, U006, U017, U024, U027, U030, U033, U034, U038, U039, U042, U045, U048, U052, U055, U056, U068, U071, U072, U075, U076, U079, U081, U082, U084, U085, U090, U091, U096, U112, U113, U117, U118, U120, U121, U123, U125, U126, U132, U136, U141, U145, U148, U152, U153, U156, U160, U166, U167, U181, U182, U183, U184, U186, U187, U191, U194, U197, U201, U202, U204, U207, U222, U225, U234, U236, U240, U243, U246, and U247; and the wastes identified in 40 CFR 261.21, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D001, D004, D005, D006, D008, D009 (wastewaters), D010, D011, D012, D013, D014, D015, D016, D017, and newly listed waste F025 are prohibited from underground injection at off-site injection facilities.

(d) Effective August 8, 1990, mixed radioactive/hazardous waste in 40 CFR 268.10, 268.11, and 268.12, that are mixed radioactive and hazardous wastes, are prohibited from underground injection.

(e) Effective November 8, 1990, the wastes specified in paragraph (c) of this section are prohibited from underground injection at on-site injection facilities. These effective dates do not apply to the wastes listed in 40 CFR 148.12(b) which are prohibited from underground injection on August 8, 1990.

(f) Effective May 8, 1992, the waste identified in 40 CFR 261.31 as EPA Hazardous Waste Number F039 (wastewaters); the wastes identified in 40 CFR 261.22, 261.23 or 261.24 as hazardous based on a characteristic alone, designated as D002 (wastewaters and nonwastewaters), D003 (wastewaters and nonwastewaters), D007 (wastewaters and nonwastewaters), and D009 (nonwastewaters) are prohibited from underground injection. These effective dates do not apply to the wastes listed in 40 CFR 148.12(b) which are prohibited from underground injection on August 8, 1990.

(g) The requirements of paragraphs (a) through (f) of this section do not apply:

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(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

[54 FR 25423, June 14, 1989, as amended at 54 FR 26647, June 23, 1989; 55 FR 22683, June 1, 1990; 55 FR 83694, Aug. 17, 1990; 56 FR 3876, Jan. 31, 1991]

§ 148.17 Waste specific prohibitions; newly listed wastes.

(a) Effective November 9, 1992, the wastes specified in 40 CFR part 261 as EPA hazardous waste numbers F037, F038, K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K136, U328, U353, and U359 are prohibited from underground injection.

(b) Effective December 19, 1994 the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151, are prohibited from underground injection.

(c) [Reserved]

(d) Effective June 30, 1995, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers K117, K118, K131, and K132 are prohibited from underground injection.

(e) The requirements of paragraphs (a) and (b) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

[57 FR 37263, Aug. 18, 1992, as amended at 59 FR 48041, Sept. 19, 1994; 61 FR 15662, Apr. 8, 1996]

§ 148.18 Waste specific prohibitions—newly listed and identified wastes.

(a) Effective August 24, 1998, all newly identified D004–D011 wastes and characteristic mineral processing

wastes, except those identified in paragraph (b) of this section, are prohibited from underground injection.

(b) Effective May 26, 2000, characteristic hazardous wastes from titanium dioxide mineral processing, and radioactive wastes mixed with newly identified D004–D011 or mixed with newly identified characteristic mineral processing wastes, are prohibited from underground injection.

(c) Effective August 11, 1997, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers F032, F034, F035 are prohibited from underground injection.

(d) Effective May 12, 1999, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers F032, F034, F035 that are mixed with radioactive wastes are prohibited from underground injection.

(e) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from underground injection.

(f) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

(g) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D018–043, and Mixed TC/Radioactive wastes, are prohibited from underground injection.

(h) [Reserved]

(i) Effective February 8, 1999, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K169, K170, K171, and K172 are prohibited from underground injection.

(j) Effective May 8, 2001, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K174 and K175 are prohibited from underground injection.

(k) Effective May 20, 2002, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K176, K177, and K178 are prohibited from underground injection.

(l) Effective August 23, 2005, the waste specified in 40 CFR 261.32 as EPA Hazardous Waste Number K181 is prohibited from underground injection.

(m) The requirements of paragraphs (a) through (l) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4.

[61 FR 15662, Apr. 8, 1996, as amended at 62 FR 26018, May 12, 1997; 63 FR 24624, May 4, 1998; 63 FR 28636, May 26, 1998; 63 FR 35149, June 29, 1998; 63 FR 42184, Aug. 6, 1998; 65 FR 14474, Mar. 17, 2000; 65 FR 36366, June 8, 2000; 65 FR 67126, Nov. 8, 2000; 66 FR 58297, Nov. 20, 2001; 70 FR 9174, Feb. 24, 2005]

Subpart C—Petition Standards and Procedures

§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.

(a) Any person seeking an exemption from a prohibition under subpart B of this part for the injection of a restricted hazardous waste into an injection well or wells shall submit a petition to the Director demonstrating that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This demonstration requires a showing that:

(1) The hydrogeological and geochemical conditions at the sites and the physiochemical nature of the waste stream(s) are such that reliable predictions can be made that:

(i) Fluid movement conditions are such that the injected fluids will not migrate within 10,000 years:

(A) Vertically upward out of the injection zone; or

(B) Laterally within the injection zone to a point of discharge or interface with an Underground Source of Drinking Water (USDW) as defined in 40 CFR part 146; or

(ii) Before the injected fluids migrate out of the injection zone or to a point of discharge or interface with USDW, the fluid will no longer be hazardous because of attenuation, trans-

formation, or immobilization of hazardous constituents within the injection zone by hydrolysis, chemical interactions or other means; and

(2) For each well the petition has:

(i) Demonstrated that the injection well's area of review complies with the substantive requirements of § 146.63;

(ii) Located, identified, and ascertained the condition of all wells within the injection well's area of review (as specified in § 146.63) that penetrate the injection zone or the confining zone by use of a protocol acceptable to the Director that meets the substantive requirements of § 146.64;

(iii) Submitted a corrective action plan that meets the substantive requirements of § 146.64, the implementation of which shall become a condition of petition approval; and

(iv) Submitted the results of pressure and radioactive tracer tests performed within one year prior to submission of the petition demonstrating the mechanical integrity of the well's long string casing, injection tube, annular seal, and bottom hole cement. In cases where the petition has not been approved or denied within one year after the initial demonstration of mechanical integrity, the Director may require the owner or operator to perform the tests again and submit the results of the new tests.

NOTE: The requirements of § 148.20(a)(2) need not be incorporated in a permit at the time of petition approval.

(b) A demonstration under § 148.20(a)(1)(i) shall identify the strata within the injection zone which will confine fluid movement above the injection interval and include a showing that this strata is free of known transmissive faults or fractures and that there is a confining zone above the injection zone.

(c) A demonstration under § 148.20(a)(1)(ii) shall identify the strata within the injection zone where waste transformation will be accomplished and include a showing that this strata is free of known transmissive faults or fractures and that there is a confining zone above the injection zone.

(d) A demonstration may include a showing that:

(1) Treatment methods, the implementation of which shall become a

condition of petition approval, will be utilized that reduce the toxicity or mobility of the wastes; or

(2) A monitoring plan, the implementation of which shall become a condition of petition approval, will be utilized to enhance confidence in one or more aspects of the demonstration.

(e) Any person who has been granted an exemption pursuant to this section may submit a petition for reissuance of the exemption to include an additional restricted waste or wastes or to modify any conditions placed on the exemption by the Director. The Director shall reissue the petition if the petitioner complies with the requirements of paragraphs (a), (b) and (c) of this section.

(f) Any person who has been granted an exemption pursuant to this section may submit a petition to modify an exemption to include an additional (hazardous) waste or wastes. The Director may grant the modification if he determines, to a reasonable degree of certainty, that the additional waste or wastes will behave hydraulically and chemically in a manner similar to previously included wastes and that it will not interfere with the containment capability of the injection zone.

§ 148.21 Information to be submitted in support of petitions.

(a) Information submitted in support of § 148.20 must meet the following criteria:

(1) All waste analysis and any new testing performed by the petitioner shall be accurate and reproducible and performed in accordance with quality assurance standards;

(2) Estimation techniques shall be appropriate, and EPA-certified test protocols shall be used where available and appropriate;

(3) Predictive models shall have been verified and validated, shall be appropriate for the specific site, waste streams, and injection conditions of the operation, and shall be calibrated for existing sites where sufficient data are available;

(4) An approved quality assurance and quality control plan shall address all aspects of the demonstration;

(5) Reasonably conservative values shall be used whenever values taken

from the literature or estimated on the basis of known information are used instead of site-specific measurements; and

(6) An analysis shall be performed to identify and assess aspects of the demonstration that contribute significantly to uncertainty. The petitioner shall conduct a sensitivity analysis to determine the effect that significant uncertainty may contribute to the demonstration. The demonstration shall then be based on conservative assumptions identified in the analysis.

(b) Any petitioner under § 148.20(a)(1)(i) shall provide sufficient site-specific information to support the demonstration, such as:

(1) Thickness, porosity, permeability and extent of the various strata in the injection zone;

(2) Thickness, porosity, permeability, extent, and continuity of the confining zone;

(3) Hydraulic gradient in the injection zone;

(4) Hydrostatic pressure in the injection zone; and

(5) Geochemical conditions of the site.

(c) In addition to the information in § 148.21(b), any petitioner under § 148.20(a)(1)(ii) shall provide sufficient waste-specific information to ensure reasonably reliable predictions about the waste transformation. The petitioner shall provide the information necessary to support the demonstration, such as:

(1) Description of the chemical processes or other means that will lead to waste transformation; and

(2) Results of laboratory experiments verifying the waste transformation.

§ 148.22 Requirements for petition submission, review and approval or denial.

(a) Any petition submitted to the Director pursuant to § 148.20(a) shall include the following components:

(1) An identification of the specific waste or wastes and the specific injection well or wells for which the demonstration will be made;

(2) A waste analysis to describe fully the chemical and physical characteristics of the subject wastes;

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(3) Such additional information as is required by the Director to support the petition under §§148.20 and 148.21; and

(4) This statement signed by the petitioner or an authorized representative:

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

(b) The Director shall provide public notice and an opportunity for public comment in accordance with the procedures in §124.10 of the intent to approve or deny a petition. The final decision on a petition will be published in the **FEDERAL REGISTER**.

(c) If an exemption is granted it will apply only to the underground injection of the specific restricted waste or wastes identified in the petition into a Class I hazardous waste injection well or wells specifically identified in the petition (unless the exemption is modified or reissued pursuant to §148.20(e) or (f).

(d) Upon request by any petitioner who obtains an exemption for a well under this subpart, the Director shall initiate and reasonably expedite the necessary procedures to issue or re-issue a permit or permits for the hazardous waste well or wells covered by the exemption for a term not to exceed ten years.

§ 148.23 Review of exemptions granted pursuant to a petition.

(a) When considering whether to re-issue a permit for the operation of a Class I hazardous waste injection well, the Director shall review any petition filed pursuant to §148.20 and require a new demonstration if information shows that the basis for granting the exemption may no longer be valid.

(b) Whenever the Director determines that the basis for approval of a petition may no longer be valid, the Director shall require a new demonstration in accordance with §148.20.

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§ 148.24 Termination of approved petition.

(a) The Director may terminate an exemption granted under §148.20 for the following causes:

(1) Noncompliance by the petitioner with any condition of the exemption;

(2) The petitioner's failure in the petition or during the review and approval to disclose fully all relevant facts, or the petitioner's misrepresentation of any relevant facts at any time; or

(3) A determination that new information shows that the basis for approval of the petition is no longer valid.

(b) The Director shall terminate an exemption granted under §148.20 for the following causes:

(1) The petitioner's willful withholding during the review and approval of the petition of facts directly and materially relevant to the Director's decision on the petition;

(2) A determination that there has been migration from the injection zone or the well that is not in accordance with the terms of the exemption, except that the Director may at his discretion decide not to terminate where:

(i) The migration resulted from a mechanical failure of the well that can be corrected promptly through a repair to the injection well itself or from an undetected well or conduit that can be plugged promptly; and

(ii) The requirements of §146.67(i) are satisfied.

(c) The Director shall follow the procedures in §124.5 in terminating any exemption under this section.

PART 149—SOLE SOURCE AQUIFERS

Subpart A—Criteria for Identifying Critical Aquifer Protection Areas

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149.1 Purpose.

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