1991
Underground Storage Tank Regulations
Title 23, Waters
Division 3, Water Resources Control Board
Chapter 16, Underground Storage Tank Regulations

I. Submittal of underground storage tank regulations to Office of Administrative Law (OAL), May 31, 1991

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

a. Form 400: Notice Publication/Regulations Submission; transmittal memo; Form 399: Fiscal Impact Statement, and text of Fiscal Impact Statement

ATE OF CALIFORNIA--OFFICE OF ADMINISTRATIVE LAW

OTICE PUBLICATION/REGULATIONS SUBMISSION

EMERGENCY

(See Instructions on reverse)

For use by Secretary of State only

D. 400 (REV. 7-80)

OAL FILE NUMBERS	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER	PREVIOUS REGULATION ACTION NUMBER
			91-0605-01E	

For use by Office of Administrative Law (OAL) only

1991 JUN -5 AM 10: 20

OFFICE OF ADMINISTRATIVE LAW

NOTICE REGULATIONS

SENCY	AGENCY FILE NUMBER *(if any)*
State Water Resources Control Board	

. PUBLICATION OF NOTICE *(Complete for publication in Notice Register)*

SUBJECT OF NOTICE	TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE

NOTICE TYPE	4. AGENCY CONTACT PERSON	TELEPHONE NUMBER
☐ Notice re Proposed Regulatory Action ☐ Other		

OAL USE ONLY	ACTION ON PROPOSED NOTICE	NOTICE REGISTER NUMBER	PUBLICATION DATE
	☐ Approved as Submitted ☐ Approved as Modified ☐ Disapproved/ Withdrawn		

. SUBMISSION OF REGULATIONS *(Complete when submitting regulations)*

. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) *(Including title 26, if toxics-related)*

	ADOPT	
SECTIONS AFFECTED	Sections 2610 through 2714	
	AMEND	
TLE(S) 23	REPEAL	

. TYPE OF FILING

☐ Regular Rulemaking (Gov. Code, § 11346) ☐ Resubmittal ☐ Changes Without Regulatory Effect (Cal. Code Regs., title 1, § 100) ☒ Emergency (Gov. Code, § 11346.1(b))

☐ Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Government Code §§ 11346.4 - 11346.8 prior to, or within 120 days of, the effective date of the regulations listed above.

☐ Print Only ☐ Other (specify)

DATE(S) OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE *(Cal. Code Regs. title 1, §§ 44 and 45)*

May 16, 1991

EFFECTIVE DATE OF REGULATORY CHANGES *(Gov. Code § 11346.2)*

☐ *Effective 30th day after filing with Secretary of State* ☒ *Effective on filing with Secretary of State* ☐ *Effective other (Specify)*

CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

☐ Department of Finance (Form STD. 399) ☐ Fair Political Practices Commission ☐ State Fire Marshal

☐ Other (Specify)

. CONTACT PERSON	TELEPHONE NUMBER
David Holtry	(916) 739-2421

I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

TI 25 OF AGENCY HEAD OR DESIGNEE	DATE
Walt Pettit	5/31/91

YPED NAME AND TITLE OF SIGNATORY

Walt Pettit, Executive Director

State of California

Memorandum

To : John Smith
Deputy Director
Office of Administrative Law
555 Capitol Mall, Suite 1290
Sacramento, CA 95812

Date: JUN 03 1991

1991 JUN -5 AM 10 20

OFFICE OF
ADMINISTRATIVE LAW

Walt Pettit
Executive Director
From : STATE WATER RESOURCES CONTROL BOARD

Subject: TRANSMITTAL OF UNDERGROUND STORAGE TANK EMERGENCY REGULATIONS

The California Underground Storage Tank regulations were originally adopted by the State Water Resources Control Board (State Board) in 1985 in conformance with Chapter 6.7 of the Health and Safety Code. Subsequently, the California Legislature enacted legislation amending Chapter 6.7 to bring Underground Storage Tank laws into a "no less stringent than" status with the Federal Underground Storage Tank regulations. The proposed amendments bring State Underground Storage Tank regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code. Section 25299.7(c) directs the State Board to adopt these regulations as emergency regulations. Once adopted by the State Board the regulations are to be filed with the Office of Administrative Law and are to remain in effect until revised by the State Board.

The Underground Storage Tank regulations protect soil and beneficial uses of waters of the State from pollution problems resulting from leaking and/or overfilled underground storage tanks. Adoption of the amended regulations is necessary for increased protection of public health and welfare.

The regulations, along with the fiscal impact statement, were approved by the Department of Finance. A copy of that approval is enclosed. The amended regulations were adopted by the State Board at the May 16, 1991 meeting and we are transmitting them to you for review.

If you have any questions, please call Harry Schueller at (916) 739-4332.

Attachments

cc: Brian Runkel, Executive Officer
Office of Environmental Protection
555 Capitol Mall, Suite 235
Sacramento, CA 95812

91-0605-01E

State of California

Memorandum

To : Ann Starr
Office of Administrative Law
555 Capitol Mall, Suite 1290
Sacramento, CA 95812

Date: 06/05/91

1991 JUN -7 PM 2:22

OFFICE OF
ADMINISTRATIVE LAW

David Holtry

From : David Holtry
STATE WATER RESOURCES CONTROL BOARD

Subject: CORRECTION OF FORM 400, RULEMAKING ON UST REGULATIONS

In accordance with our conversation today, please make the effective date of the regulatory changes on filing with the Secretary of State. Also, please check the appropriate box on Form 400.

FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD 399 (5/86)

STATE OF CALIFORNIA

SEE SAM SECTION 6055 FOR INSTRUCTIONS

DEPARTMENT	CONTACT PERSON	PHONE NUMBER
State Water Resources Control Board	David Holtry	739-4436

TITLE/DESCRIPTION OF REGULATION/ORDER

Underground Storage of Hazardous Substances Regulation, CCR Title 23, Division 3, Chapter 16

A. FISCAL EFFECT ON LOCAL GOVERNMENT (Indicate appropriate boxes 1 through 6 and complete if necessary)

☐ 1. Additional expenditures of approximately $ _____ annually which are reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code. Funding for this reimbursement:

- ☐ a. is provided in (Item _____, Budget Act of _____, ____) or (Chapter _____, Statutes of _____)
- ☐ b. will be requested in the _____ (FISCAL YEAR) Governor's Budget for appropriation in Budget Act of _____.

☒ 2. Additional expenditures of approximately $ 15,640,000* annually which are not reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code because this regulation:

- ☒ a. implements the Federal mandate contained in 40 CFR Section 280.21;
- ☐ b. implements the court mandate set forth by the _____ court in the case of _____ vs. _____;
- ☐ c. implements a mandate of the people of this State expressed in their approval of Proposition No. _____ at the _____ (DATE) election;
- ☐ d. is issued only in response to a specific request from the _____, which is/are the only local entity(s) affected;
- ☒ e. is more appropriately financed from the fees (FEES, REVENUE, ETC.) of the Health & Safety Code; authorized by Section 25287
- ☐ f. provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each such unit.

☐ 3. Savings of approximately $ _____ annually.

☐ 4. No additional costs or savings because this regulation makes only technical, nonsubstantive or clarifying changes to current law and regulations.

☐ 5. No fiscal impact exists because this regulation does not affect any local entity or program.

☐ 6. Other

B. FISCAL EFFECT ON STATE GOVERNMENT (Indicate appropriate boxes 1 through 4 and complete if necessary)

☒ 1. Additional expenditures of approximately $ 5,935,000* annually. It is anticipated that State agencies will:

- ☐ a. be able to absorb these additional costs within their existing budgets and resources.
- ☒ b. request supplemental funding by means of "Budget Change Proposals" for the 1991-92, OR SUBSEQUENT YEARS fiscal year.

☐ 2. Savings of approximately $ _____ annually.

☐ 3. No fiscal impact exists because this regulation does not affect any State agency or program.

☐ 4. Other

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS (Indicate appropriate boxes 1 through 4 and complete if necessary)

☐ 1. Additional expenditures of approximately $ _____ annually.

☐ 2. Savings of approximately $ _____ annually.

☐ 3. No fiscal impact exists because this regulation does not affect any federally funded State program or agency.

☐ 4. Other

SIGNATURE	TITLE	
James M. Bartley	Executive Director	2/26/91
AGENCY SECRETARY APPROVAL/CONCURRENCE: John T. Doyle		DATE: 3-1-91
DEPARTMENT OF FINANCE APPROVAL/CONCURRENCE: Theresa J. Parker	PROGRAM BUDGET MANAGER - DOF	DATE: 4-25-91

*Cost to upgrade single walled tanks with secondary containment as required by statutes [Health and Safety Code Section 25292(d)].

RECEIVED
MAR 12 1991
SWRCB
EXECUTIVE

FISCAL IMPACT

In 1985 the State Board promulgated regulations that became effective on August 13, 1985. These regulations were based on the provisions of the original Underground Storage Tank Law (Statutes of 1983, Chapter 1046) as well as the 1984 amendments, Which were within the scope of the Notice of Proposed Rulemaking published by the State Board in August 1984. Since 1984 Chapter 6.7 has been amended a total of 17 times and the U.S. Environmental Protection Agency promulgated new UST regulations. The proposed amendments are intended to bring State UST regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code.

The proposed amendments to the underground storage tank regulations also include a number of minor changes made for clarification purposes only. These are editorial changes (rewording, renumbering, or relettering) and are not intended to alter the substance of the regulations.

The major fiscal impact from the amended regulations arises from the requirement that all underground storage tanks installed on or before January 1, 1984 shall be upgraded or replaced by December 22, 1998. Amended regulations also prohibit manual tank gauging as non-visual monitoring after December 22, 1998 for underground storage tanks with capacity of 1,001 gallons or greater, therefore, these tanks shall be equipped with Tank Level Monitors. This fiscal impact statement analyzes the impact on State agencies, local agencies and school districts who own underground storage tanks. All these agencies are subject to compliance with these regulations and need to anticipate the required funding for the implementation.

Fiscal Impact on State Government Agencies

The fiscal impact on state government stems mainly from the cost to upgrade UST in accordance with both State [Section 25292(d) of the Health and Safety Code] and Federal (Section 40 CFR 280.21) statutes. Therefore, the tank upgrade requirements in the State regulations are not arbitrary but carry out the mandate set forth in the statutes. These tank upgrade requirements have to be met by December 22, 1998 as set forth in both the State and Federal statutes. Most state agencies plan to upgrade or replace a certain number of tanks each year starting with older tanks first and/or with other high risk tanks. Many of the agencies have started evaluating their tanks and also installing Tank Level Monitors.

There is an estimated total of 1,706 active tanks owned by State Government. Office of State Architect (OSA) handles all the state owned tanks and performs the required tasks to maintain the state underground storage tanks in compliance with the regulations. The Department of Cal Trans, Food & Agriculture, Fish & Game, and California Highway Patrol obtain and manage funding for their underground storage tank programs and have OSA assist in planning and implementing the program tasks, and they transfer funding to OSA for implementation as needed. However, all the other agency tank programs are managed and funded by OSA. Table 1 shows a listing of the State agencies which own underground storage tanks and will be affected by the amended upgrade requirement. The Department of Water Resources (DWR) manage, fund, and perform all the tasks for their underground storage tank program, and OSA does not oversee their underground storage tank programs.

The estimated fiscal impact on OSA and the other above mentioned state agencies is summarized in Table 2. The upgrade cost of each tank is assumed to be 25,000 Dollars. This is a rule of thumb industry estimate (It is based on the upgrade cost per tank for a gas station with three 8000 gallon tanks). This cost includes the labor and material cost of installation of the following:

Tank lining
Line Leak Detectors
Splash/spill/overfill prevention system
Cathodic Protection
Tank Level Monitor

The agencies will either upgrade the tanks, or replace them with above ground tanks or new underground storage tanks. The estimated number of tank upgrades or replacements is presented in Table 2 and it is based on the communications with the underground storage tank program coordinators of Cal Trans, Food & Agriculture Dept., Fish & Game, California Highway Patrol (CHP), Department of Water Resources (DWR), and Office of State Architect (OSA). Generally the tanks with capacities exceeding 1000 gallons will be upgraded if they are not very old, and the older tanks will be replaced by new underground storage tanks. However, Many of the tanks which have capacities of 1000 gallons or less will be replaced by above ground tanks if permitted to do so by the Air Resources Board and local fire prevention agencies.

For the purposes of this fiscal impact analysis it is assumed that removal of an existing tank and replacement by an above ground storage tank will cost $20,000, and replacement by an underground storage tank on the average will cost $45,000. It is also anticipated that OSA will require two additional PY's for implementation of this program. It is assumed that the State cost for the PY will be $100,000/PY. These costs are estimated average values and have not been adjusted for rate of inflation. The actual costs over the eight year period may go up or down

respectively due to cost of living increase or competitive pricing.

Based on all the above stated assumptions it is estimated that total of 72% of state tanks will be upgraded, 14.5% will be replaced by above ground tanks, and 13.5% will be replaced by underground Storage tanks. The total cost to bring State owned tanks in compliance will be $47,480,000. The cost per year ($47,480,000/8) will be 5,935,000 Dollars.

The state agencies which will be impacted by the upgrade requirement costs were contacted regarding their funding status for compliance. The Department of Cal trans indicated that they have not included this as an item in their 1992-1993 budget which they are preparing. However, Cal Trans plans to use the 5.6 million Dollars maintenance program budget which they received in 1985-1986 to finance the tank upgrades or replacements. The estimated total program cost for Cal Trans based on our assumptions will be $14,750,000, which will result in an annual expenditure of approximately 1.8 million Dollars.

The Department of Food & Agriculture based on our assumptions will have to spend a total of $600,000 to bring their underground storage tanks in compliance with the upgrade requirements, which will result in an annual expenditure of approximately $75,000.

The Department of Fish & Game indicated they do not have the funds required for this program, they have initiated an evaluation of their tanks and will attempt to close as many tanks as they can. However, Department of Fish & Game has closed many of their tanks recently and it is not definite they will be able to close more tanks. For the purposes of our cost estimate it is assumed the tanks will either be upgraded or replaced and the estimated total program cost for Fish & Game based on our assumptions will be $695,000, which will result in an annual expenditure of approximately $87,000.

California Highway Patrol (CHP) indicated their 1989-1990 tank removal budget has $300,000 remaining with OSA and they plan to use this until there is need for additional funding. They have already initiated a tank evaluation program and installation of tank level monitors which will be done by OSA. The estimated total program cost for CHP tanks based on our assumptions will be $3,110,000, which will result in an annual expenditure of approximately $390,000.

Office of State Architect indicated that their 1990-1991 BCP has budget for tank level monitor installations. They have also sent in a request to the Department of General Services for $1,000,000 and 1 PY. They have not submitted any funding request for this to the Department of Finance. The estimated total program cost for

OSA based on our assumptions will be $27,115,000, which will result in an annual expenditure of approximately $3,390,000.

The Department of Water Resources will have an estimated total expenditure of $1,120,000 to upgrade or replace their tanks, which will result in an annual expenditure of approximately $140,000.

Fiscal Impact on Local Agencies and School Districts

Local agencies and school districts have the authority to levy service charges, fees, or assessments sufficient to pay for administering the program or level of service mandated by the regulations or else it is recognized, that a local agency or school district may pursue any remedies to obtain reimbursement available to it under Chapter 3 (commencing with Section 2201) of Part 4 of Division 1 of the Revenue and Taxation Code. Costs incurred by local governments to comply with the subject regulations are incidental costs not involving increased level of government service.

Section 25 of AB 1030 (Statutes of 1989) states: "No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution for those costs which may be incurred by a local agency or school district because this act creates a new crime or infraction, changes the definition of a crime or infraction, or eliminates a crime or infraction, or because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act."

There is a total of 6,345 underground storage tanks identified as belonging to state and local agencies and school districts as estimated in SWEEPS data base (December 1990). Therefore, we will estimate that 4,639 (6,345-1,706) tanks are owned by local agencies and school districts. The number of tanks which need to be upgraded or replaced is calculated based on the same total percentage ratios obtained (Table 2) for state government owned tank upgrades and replacements. Total of 3,340 (4,639 X .72) tanks will be upgraded, total of 673 (4,639 X .145) tanks will be replaced by above ground tanks, and the remaining 626 will be replaced by new underground tanks. The unit costs are assumed to be the same as the ones estimated for state tanks (Table 2). Total upgrade requirement cost for local agencies and school districts will add up to 125,130,000 Dollars (3,340 X $25,000 + 673 X $20,000 + 626 X $45,000). The upgrade cost per year ($125,130,000/8) will be approximately $15,640,000 for the local agencies and school districts.

Fiscal Impact Statement, Form 399, for proposed amendments to Chapter 16, Underground Storage Tank regulations is attached.

Table 1. List of State Agencies which own Underground Storage Tanks

I. Agencies which administer their underground storage tank program, and use OSA for planning consultation and implementation:

Agency	No. of Tanks
Cal Trans	501
Food & Agriculture Department	23
Department of Fish & Game	27
California Highway Patrol	92

II. Agencies which OSA administers their underground storage tank programs:

Agency	No of Tanks
Air Resources Board	2
Conservation Corp.	2
Department of Corrections	58
California State University System	152
Developmental Services	37
Dept. of Education	5
Emergency Services	5
Cal Expo & State Fair	3
Dept. of Forestry	384
General Services	30
Health Services	1
Lands Commission	3
Mental Health	11
Military	57
Motor vehicles	1
Parks & recreation	113
University of California System	162
Veterans Affairs	4
Youth Authority	33

III. Agencies which administer and fund their own underground storage tank program:

Department of Water Resources	45

Source of Data: Office of State Architect (OSA)data base.

Table 2. Tank Upgrade Estimated Cost Impact on State Agencies

State Agency	No. Tanks	No. of Upgrades	No. replaced Above ground	No. replaced Underground	Total Cost $
Cal Trans	501	351	31	119	14,750,000
Food & Ag.	23	8	11	4	600,000
Fish & Game	27	16	8	3	695,000
CHP	92	49	2	41	3,110,000
OSA	1,063	801	196	66	27,115,000
DWR	45	32	7	6	1,210,000
Total	1,751	1,257	255	239	47,480,000

Annual State Agencies Cost: ($47,480,000/8) $5,935,000

Overall percent of state tanks to be upgraded: 72%
Overall percent of state tanks to be replaced by above ground tanks: 14.5%
Overall percent of state tanks to be replaced by underground tanks: 13.5%

Assumed Unit Costs:

Tank upgrade cost,	$25,000/Tank
Replacement by above ground tank	$20,000/Tank
Replacement by Underground tank	$45,000/Tank

Cost estimate for OSA includes two additional PY's required by OSA for program implementation and is estimated to cost $100,000/PY.

The cost estimates are not indexed, and are not inclusive of any site investigation or remediation which may be necessary for sites with leaking underground storage tanks.

State of California

Memorandum

To : 1. Jananne Sharpless
Secretary of Environmental Affairs
1102 Q Street
Sacramento, CA 95814

Date:

2. Stan Hiuga
Budget Analyst
Department of Finance
915 L Street
9th Floor
Sacramento, CA 95814

James W. Baetge
Executive Director

From : STATE WATER RESOURCES CONTROL BOARD

Subject: FISCAL IMPACT STATEMENT FOR PROPOSED AMENDMENTS TO TITLE 23, DIVISION 3, CHAPTER 16 OF THE CALIFORNIA CODE OF REGULATIONS

Attached is Fiscal Impact Statement Form 399 for proposed amendments to Chapter 16, Underground Storage Tank (UST) Regulations.

Section 25299.3, Chapter 6.7 of the Health and Safety Code requires the State Board to adopt regulations implementing specific sections of State law governing underground storage of hazardous substances and allows the State Board to adopt regulations for other sections.

Chapter 6.7 of the Health and Safety Code has been amended as follows: Chapter 1038/1984 (AB 3565), Chapter 1537/1984 (AB 3447), Chapter 1584/1984 (AB 3781), Chapter 1228/1985 (AB 2239), Chapter 1535/1985 (AB 1755), Chapter 935/1986 (AB 3570), Chapter 1025/1986 (SB 1818), Chapter 1390/1986 (AB 2920), Chapter 1317/1987 (AB 853), Chapter 1372/1987 (AB 1413), Chapter 296/1988 (AB 1571), Chapter 876/1988 (AB 190), Chapter 1431/1988 (AB 4613), Chapter 432/1989 (AB 2031), Chapter 1397/1989 (AB 1030), Chapter 1442/1989 (SB 299), Chapter 1574/1990 (AB 3560).

In 1985 the State Board promulgated regulations that became effective on August 13, 1985. These regulations were based on the provisions of the original Underground Storage Tank Law (Statutes of 1983, Chapter 1046) as well as the 1984 amendments, which were within the scope of the Notice of

Proposed Rulemaking published by the State Board in August 1984. Since 1984 Chapter 6.7 has been amended a total of 17 times and the U.S. Environmental Protection Agency promulgated new UST regulations. The proposed amendments are intended to bring State UST regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code.

The proposed amendments to the underground storage tank regulations also include a number of minor changes made for clarification purposes only. These are editorial changes (rewording, renumbering, or relettering) and are not intended to alter the substance of the regulations.

The fiscal impact on State government stems mainly from the cost to upgrade UST in accordance with both State [Section 25292(d) of the Health and Safety Code] and Federal (Section 40 CFR 280.21) statutes.

Therefore, the tank upgrade requirements in the State regulations are not arbitrary but carry out the mandate set forth in statutes. These tank upgrade requirements have to be met by December 22, 1998 as set forth in both the State and Federal statutes. Most State agencies plan to upgrade a certain number of tanks each year starting with older tanks first and/or with other high risk tanks.

Local agencies and school districts have the authority to levy service charges, fees, or assessments sufficient to pay for administering the program or level of service mandated by the regulations or else it is recognized, that a local agency or school district may pursue any remedies to obtain reimbursement available to it under Chapter 3 (commencing with Section 2201) of Part 4 of Division 1 of the Revenue and Taxation Code. Costs incurred by local governments to comply with the subject regulations are incidental costs not involving increased level of government service.

Section 25 of AB 1030 (Statutes of 1989) states: "No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution for those costs which may be incurred by a local agency or school district because this act creates a new crime or infraction, changes the definition of a crime or infraction, changes the penalty for a crime or infraction, or eliminates a crime or infraction, or because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act."

If you have any questions concerning the fiscal impact statement, please call David Holtry of the State Board at 739-4436.

Attachment

FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD 399 (5/86)

STATE OF CALIFORNIA

SEE SAM SECTION 6055 FOR INSTRUCTIONS

DEPARTMENT	CONTACT PERSON	PHONE NUMBER
State Water Resources Control Board	David Holtry	739-4436

TITLE/DESCRIPTION OF REGULATION/ORDER

Underground Storage of Hazardous Substances Regulation, CCR Title 23, Division 3, Chapter 16

A. FISCAL EFFECT ON LOCAL GOVERNMENT (Indicate appropriate boxes 1 through 6 and complete if necessary)

☒ 1. Additional expenditures of approximately $ _____ annually which are reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code. Funding for this reimbursement:

- ☐ a. is provided in (Item _____, Budget Act of _____, ___) or (Chapter _____, Statutes of _____)
- ☐ b. will be requested in the _____ (FISCAL YEAR) Governor's Budget for appropriation in Budget Act of _____.

☒ 2. Additional expenditures of approximately $ 10,625,000* annually which are not reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code because this regulation:

- ☒ a. implements the Federal mandate contained in 40 CFR Section 280.21;
- ☐ b. implements the court mandate set forth by the _____ court in the case of _____ vs. _____;
- ☐ c. implements a mandate of the people of this State expressed in their approval of Proposition No. _____ at the _____ (DATE) election;
- ☐ d. is issued only in response to a specific request from the _____, which is/are the only local entity(s) affected;
- ☒ e. is more appropriately financed from the fees (FEES, REVENUE, ETC.) authorized by Section 25287 of the Health & Safety Code;
- ☐ f. provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each such unit.

☐ 3. Savings of approximately $ _____ annually.

☐ 4. No additional costs or savings because this regulation makes only technical, nonsubstantive or clarifying changes to current law and regulations.

☐ 5. No fiscal impact exists because this regulation does not affect any local entity or program.

☐ 6. Other

B. FISCAL EFFECT ON STATE GOVERNMENT (Indicate appropriate boxes 1 through 4 and complete if necessary)

☒ 1. Additional expenditures of approximately $ 3,120,000 *, annually. It is anticipated that State agencies will:

- ☐ a. be able to absorb these additional costs within their existing budgets and resources.
- ☒ b. request supplemental funding by means of "Budget Change Proposals" for the 1991-92 fiscal year.

☐ 2. Savings of approximately $ _____ annually.

☐ 3. No fiscal impact exists because this regulation does not affect any State agency or program.

☐ 4. Other

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS (Indicate appropriate boxes 1 through 4 and complete if necessary)

☐ 1. Additional expenditures of approximately $ _____ annually.

☐ 2. Savings of approximately $ _____ annually.

☐ 3. No fiscal impact exists because this regulation does not affect any federally funded State program or agency.

☐ 4. Other

SIGNATURE	TITLE	
	Executive Director	
AGENCY SECRETARY APPROVAL/CONCURRENCE		DATE
DEPARTMENT OF FINANCE APPROVAL/CONCURRENCE	PROGRAM BUDGET MANAGER - DOF	DATE

*Cost to upgrade single walled tanks with secondary containment as required by statutes [Health and Safety Code Section 25292(d)].

State of California

Memorandum

To : Harry W. Schueller
Division Chief
Division of Clean Water Programs

Date : FEB 20 1991

James Cornelius
Principal Engineer

From : STATE WATER RESOURCES CONTROL BOARD

Subject: FISCAL IMPACT TO UPGRADE UNDERGROUND STORAGE TANKS (BACKUP DATA)

The following is the backup data for the attached Fiscal Impact Statement. All upgrades must be completed by December 22, 1998.

State Government:

Total Tanks	=	1,850
Tanks To Be Upgraded [estimated by Office of State Architecture (OSA)]	=	1,000
Cost of Tank Upgrade (estimated by OSA)	=	$25,000
Total Upgrade Cost (1000 x $25,000)	=	$25 million
Upgrade Cost Per Year	=	$3.12 million

Local Government:

Total Tanks (from 1985 Rule Making Process - Fiscal Impact Statement)	=	5,700
Tanks To Be Upgraded (estimated based on same percentage of State tanks above)	=	3,400
Cost of Tank Upgrade (estimated as above)	=	$25,000
Total Upgrade Cost (3400 x $25,000)	=	$85 million
Upgrade Cost Per Year	=	$10.625 million

b. Rulemaking Index

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

1991
Index to Rulemaking File
Underground Storage Tank Regulations
Title 23, Waters
Division 3, Water Resources Control Board
Chapter 16, Underground Storage Tank Regulations

I. Submittal of underground storage tank regulations to Office of Administrative Law (OAL), May 31, 1991
   a. Form 400: Notice Publication/Regulations Submission; transmittal memo; Form 399: Fiscal Impact Statement, and text of Fiscal Impact Statement
   b. Rulemaking Index
   c. Finding of Emergency
   d. Informative Digest, May 1991
   e. Text of proposed regulations, April 12, 1991

II. Notice of disapproval of regulations
   a. Notice received from OAL on June 21, 1991 and attached text of regulations with handwritten notations by OAL attorney.
   b. Proof of Service to SWRCB by OAL on June 21, 1991
   c. Letter to Walt Pettit, SWRCB from OAL re: errors in submitted regulations

III. Resubmittal of emergency regulations
   a. Memo to OAL transmitting resubmittal of regulations, July 25, 1991
   b. Form 400, Emergency Resubmittal, July 25, 1991
   c. "Changes to the Underground Storage Tank Regulations in Response to Office of Administrative Law Comments", July 1991
   d. Revised Form 399 and text of Fiscal Impact Statement, July 1991
   e. Revised Informative Digest, July 1991
   f. Finding of Emergency
   g. Text of Amended Regulations
   h. Memo to OAL transmitting corrected text (typographical and punctuation errors, August 9, 1991

IV. Miscellaneous Correspondence
   a. Letter to Mike McDonald from State Fire Marshal re conflict with Uniform Fire Code, December 27, 1990; letter from Dave Holtry to State Fire Marshal (no date)
   b. Memo to Dave Holtry from SWRCB Budget Office re fiscal questions, March 29, 1991.
   c. Letter to Office of Environmental Protection from Walt Pettit re transmittal of draft regulations, May 6, 1991
   d. Memo to Walt Pettit from Harry Schueller re briefing on regulatory changes, July 3, 1991.
   e. Letter to local agencies from Mike McDonald re August 9, 1991adoption of regulations by OAL, August 12, 1991
   f. Memo to SWRCB from OAL returning Secretary of State's copy of regulations marked "Endorsed Filed" (file is not in binder), March 12, 1993

c. Finding of Emergency

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

UNDERGROUND STORAGE TANK REGULATIONS

FINDING OF EMERGENCY

Section 25299.7(c) of the Health and Safety Code directs the State Board to adopt emergency regulations to implement the underground storage tank program. Section 11346.1(b) of the Government Code states that any finding of emergency shall include a written statement containing the information requested in Section 11346.5(a) of the Government Code and a description of the specific facts showing the need for immediate action.

The following numbered statements correspond to and provide the information requested in Section 11346.5(a):

(2) "Reference to the authority under which the regulation is proposed and the reference to the particular code sections or other provisions of law which are being implemented, interpreted, or made specific."

The California Underground Storage Tank regulations were originally adopted by the State Water Resources Control Board (State Board) in 1985 in conformance with Chapter 6.7 of the Health and Safety Code. Subsequently, the California Legislature enacted legislation amending Chapter 6.7 to bring Underground Storage Tank laws into a "no less Stringent than" statutes with the Federal Underground Storage Tank regulations. The proposed amendments bring State Underground Storage Tank regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code. Section 25299.7(c) directs the State Board to adopt these regulations as emergency regulations.

(3) "An informative digest containing a concise and clear summary of existing laws and regulations..."

The revised Informative Digest is attached.

(4) "Any other matters as are prescribed by statute applicable to the specific state agency or to any specific regulation or class of regulations".

None.

(5) "Determination as whether the regulation imposes a mandate on local agencies or school districts and, if so, whether the mandate requires state reimbursement pursuant to Part 7 (commencing with Section 17500) of Division 4.)"

Local agencies and school districts have the authority to levy service charges, fees, or assessments sufficient to pay for

administering the program or level of service mandated by the regulations or else it is recognized, that a local agency or school district may pursue any remedies to obtain reimbursement available to it under Chapter 3 (commencing with Section 2201) of Part 4 of Division 1 of the Revenue and Taxation Code. Costs incurred by local governments to comply with the subject regulations are incidental costs not involving increased level of government service.

Section 25 of AB 1030 (Statutes of 1989) states: "No reimbursement is required by the act pursuant to Section 6 of Article XIII B of the California Constitution for those costs which may be incurred by a local agency or school district because this act creates a new crime or infraction, changes the definition of a crime or infraction, or eliminates a crime or infraction, or because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act."

(6) "An estimate, prepared in accordance with instructions adopted by the Department of Finance, of the cost or savings to any state agency, the cost to any local agency or school district that is required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4, other non-discretionary cost or savings imposed on local agencies, and the cost or savings in federal funding to the state."

Standard Form 399 titled Fiscal Impact Statement (Regulations and Orders) and revised text of Fiscal Impact are attached.

The proposed regulations must be adopted immediately to protect the environment from substances hazardous to the public health and safety, which are stored prior to use or disposal in thousands of underground locations in the state. Underground tanks used for the storage of hazardous substances and motor vehicle fuel are potential sources of contamination of the ground and underlying aquifers, and may pose other dangers to public health and the environment. In several known cases, underground storage has resulted in undetected and uncontrolled releases of hazardous substances into the ground. These releases have contaminated public drinking water supplies and created a potential treat to the public health and to the waters of the state. The protection of the public from releases of hazardous substances is an issue of statewide concern.

Proposed Underground Storage Tank regulations require use of extensive monitoring and automatic leak detection systems on underground tank and piping system. The monitoring requirements in conjunction with required tank integrity testing and secondary containment systems for underground storage tanks will provide additional protection from undetected leaks which may contaminate the environment.

Section 25299.7 (c) of the Health and Safety Code advises that adoption of these regulations is an emergency and shall be considered by the Office of

Administrative Law as necessary for the immediate preservation of the public peace, health and safety, and general welfare.

d. Informative Digest, May 1991

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

May 1991

INFORMATIVE DIGEST

Chapter 6.7 of Division 20 of Health and Safety Code (H & S Code) established a program for regulation of underground storage tanks. Chapter 6.7 prohibits any person from owning or operating an underground storage tank used for the storage of hazardous substances without a permit issued to the owner by a designated local agency and provides for implementation of construction and monitoring standards. The State Board developed regulations to implement the standards for this permit program pursuant to Health and Safety Code Section 25299.3. These regulations became effective August 13, 1985. The proposed amendments will clarify existing requirements and make the regulations consistent with Chapter 6.7 as amended since 1983 and no less stringent than the Federal underground storage tank regulations.

Chapter 6.7 of the H & S Code was amended by Chapters 1038, 1537, and 1584 of the statutes of 1984 (AB 3565, AB 3447, and AB 3781, respectively); by Chapters 1228 and 1535 of the Statutes of 1985 (AB 2239 and AB 1755, respectively) which took effect in October 1985 as urgency measures; by Chapters 935, 1025, and 1390 of the Statutes of 1986 (AB 3570, SB 1818, and AB 2920, respectively); by Chapters 1317 and 1372 of the Statutes of 1987 (AB 853 and AB 1413, respectively); by Chapters 296, 876, and 1431 of the Statutes of 1988 (AB 1571, AB 190, AB 4613); by Chapters 432, 1397, and 1442 of the Statutes of 1989 (AB 2031, AB 1030, SB 299); and by Chapter 1574 of the Statutes of 1990 (AB 3560).

The proposed amendments to the underground storage tank regulations include a number of minor changes made for clarification purposes only. These are editorial changes (rewording, renumbering, or relettering) and do not alter the substance of the regulations

The following is a summary of all other proposed changes:

Article 1 (formerly Article 2)

Existing regulations define terms used within the regulations. Proposed regulations delete the definitions of "double walled tank" and "Nationally recognized independent testing organization" and add the following new definitions:

"coating experts", "corrosion specialist", "cathodic protection tester", "emergency containment", "farm tank", "heating oil tank", "holiday", "hydraulic lift tank", "independent testing organization", "independent third

party", "integral secondary containment", "interstitial space", "liquid asphalt tank", "liquefied petroleum gas tank", "manufacturer", "non-volumetric test", "petroleum", "pipeline leak detector", "probability of detection", "probability of false alarm", "qualitative release detection method", "quantitative release detection method", "release detection method", "septic tank", "sump/pit/pond/or lagoon", "tank integrity test", "volumetric test", "voluntary consensus standards", "wastewater treatment tank".

Proposed regulations modify the definition of "substantially beneath the surface of ground" to the following:

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground tank system volume, including the volume of any connected piping, is below the ground surface or enclosed below earthen materials.

Article 2 (formerly Article 1)

Proposed regulations state that the term "underground storage tank" does not include any of the following:

a farm tank, a heating oil tank, hydraulic lift tanks with a capacity of less than 110 gallon, a liquefied petroleum gas tank, a liquid asphalt tank, a septic tank, a sump/pit/pond or lagoon, a wastewater treatment tank except which is part of an underground storage tank system, a pipeline located in a refinery or in an oil field, tanks and catch basins designed for storm water collection, tanks containing radioactive material that are regulated by other federal, state or local agency (such as; spent fuel pools, radioactive waste storage tanks, and similar tanks), an emergency containment tank kept emptied to receive accidental spills and approved for such use by the appropriate local agency, drums located in basements which contain 55 gallons or less of material.

Existing regulations do not specifically address change in use of the tanks which are excluded from underground tank regulations by virtue of use. Proposed regulations require the owner of any tank which is excluded from regulation as an underground storage tank by virtue of its use, within 120 days after change in or discontinuance of the use which provided the exclusion; apply for and promptly obtain a valid operating permit or close the tank in accordance with Article 7 of the regulations. Resumption of a use which justifies an exclusion from regulation within 120 days after change or discontinuation of that use will reactivate the exclusion.

Article 3

Existing regulations of this article provide construction and monitoring standards for new underground storage tanks. Under the proposed regulations underground storage tanks installed between January 1, 1984 and the effective date of these amendments may be deemed to be in compliance with the standards in this article if they were installed in accordance with Federal and State standards that existed at the time of installation.

Existing regulations require that primary containment to be product-tight and all secondary containment systems to be constructed of sufficient thickness, density, and composition to prevent structural weakening as a result of contact with any released hazardous substances. Proposed amendments additionally require the material of construction for secondary containment to be corrosion resistant. Also, effective on July 1, 1991 for underground storage tanks and January 1, 1992 for piping, all primary containment including any integral secondary containment system shall be designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components of the tank system, effective July 1, 1992 shall bear an approval from an independent testing organization. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the minimum information listed in section 2631(b).

Existing regulations state that the wear plate (striker plate) centered under all accessible openings required for all new underground storage tanks shall be at least 9 inches wide and have an area of 1 square-foot or be equal to the area of the accessible opening or guide tube, whichever is larger. Proposed regulations require the width of the plate to be at least 8 inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. Proposed regulations also amend the minimum steel wear plate thickness requirement from 0.053 inches to 1/8 inches, and do not require wear plates over 1/4 of an inch to be rolled.

Existing regulations require the volume of secondary containment systems open to rainfall to be able to accommodate a 24-hour, 100-year storm. Proposed regulations change the requirement to a 24-hour, 25-year storm capacity.

Existing regulations specify standards for membrane liners utilized in secondary containment systems. Proposed regulations require the membrane liners to be certified by an independent testing organization and free of any primary nutrients or food-like substances attractive to rodents. Membrane liner standards are amended and summarized in Table 3.1 of section 2631 of proposed regulations. An important amendment is increase of

period of immersion in the stored hazardous substance, required for some membrane tests, from 24 hours to 30 days.

Proposed regulations require underground piping with secondary containment to be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system,

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with Section 2643(g) of amended regulations

(3) Other monitoring methods may be used if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section.

Existing regulations require all monitoring programs to include a response plan which demonstrates , that any unauthorized release will be removed from the secondary containment system within the shortest possible time and no longer than the time consistent with the ability of the secondary containment system to contain the hazardous substance. Proposed regulations restrict the permissible response time to maximum of 30 days.

Proposed regulations require a monitoring program to include the preventive maintenance schedule, prepared in accordance with manufacturer's instructions, for the monitoring equipment. A monitoring program shall also include a description of the training needed for the operation of both the tank system and the monitoring equipment.

Proposed regulations require that all underground piping, if in direct contact with backfill material, to be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection shall meet the amended requirements and schedule specified in paragraph 2635(a)(2) of the proposed regulations. Underground piping shall meet the amended requirements of the proposed section 2635(b).

Existing regulations state that if required by the local agency, the underground storage tanks shall be equipped with overflow prevention system elements of which are specified in paragraph 2635(b)(8) of the existing regulations. Proposed regulations delete this paragraph and require that all underground storage tanks to be equipped with a spill container and an overfill

prevention system that meets the amended specifications in proposed section 2635(c).

Proposed regulations require owners of new underground storage tanks to certify that the installation of underground storage tanks and piping meets the requirements of proposed section 2635(e).

Article 4

Existing regulations describe general applicability of this article in Section 2640 and the eight specific monitoring alternatives at Section 2641 of this article. Proposed regulations have replaced these alternatives with performance standards to give more flexibility to tank owners. The new Section 2640 requires that the owners of existing underground storage tanks to comply with provisions of this article during any of the following periods:

> (1) Any operating period, including any period that the tank is empty prior to planned input of additional hazardous substance;
> (2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted;
> (3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to Section 2671(b), for a temporary closure period.

Amended Section 2641 requires owners of existing underground storage tanks to implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to Section 25281.5 of the Health and Safety code or is exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in Section 2635(b)(7) of this chapter.

Proposed regulations in Section 2641 list the factors which local agencies shall consider for approving a proposed monitoring program. If an approved monitoring program is not promptly obtained, the owner of the tank shall repair or close the tank. All equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calender year) for operability or running condition. Written records shall be

maintained as required in Section 2712 of Article 10 of this chapter.

Existing regulations specify the underground storage tank testing requirements in Section 2643. Proposed regulations have deleted this section and the new section 2643 includes the amended requirements and performance standards for non-visual monitoring/quantitative release detection methods for underground storage tanks (2643 c), pressurized piping (2643 d), and suction piping (2643 e). Examples of the release detection methods that may be used to meet the performance requirements of this section are presented in Appendix IV of this chapter.

Proposed regulations require that each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, and each qualitative release detection method to have an independent third party certification stating that it complies with the performance standards of Section 2643 or 2644. Evaluation procedure for this certification is included in paragraph 2643(g) and Appendix V of this chapter.

Proposed regulations of Section 2643(h) require the underground storage tank owner to notify the local agency 48 hours prior to conducting any tank integrity test. However, the agency may waive the 48 hour requirement.

Existing regulations describe soil testing requirements in Section 2645. The proposed regulations have restated the same requirements in the proposed Section 2649(f).

Proposed Section 2645 state the amended manual tank gauging and testing requirements. Manual tank gauging as part of non-visual monitoring can only be used for existing underground storage tanks with total system capacity of 2000 gallons or less and, which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year. Manual tank gauging shall not be used on tanks with secondary containment and after December 22, 1998 can not be used for tanks with a capacity of 1,001 gallons or greater.

Proposed regulations require 36 hour period of gauging instead of the existing 7 day period. It is also required that no inputs shall occur within the 12 hour period preceding the gauging period.

Proposed regulations require all underground storage tank level measuring devices to be capable of measuring the level over the full range of the tank's height to the nearest one-eight of an inch.

Existing regulations allow the use of inventory reconciliation method only for motor vehicle fuel underground storage tanks. Proposed regulations in Section 2646 amend the inventory reconciliation requirements. After January 1, 1993 inventory reconciliation, and any other leak detection methods that utilize manual stick readings, shall not be used for monitoring of existing motor vehicle fuel underground storage tanks, where the existing groundwater level or the highest anticipated ground water level is less than 20 feet below the bottom of the tank, and it will be disallowed in all other areas after December 22, 1998.

Proposed regulations amend the existing required daily inventory reconciliation to a monthly schedule and require inventory reconciliation statements to be submitted annually instead of the current quarterly schedule. Monthly inventory reconciliation is calculated based on daily variations in inventory as specified in Section 2646(i). Monthly variations exceeding a variation of 1.0 percent of the monthly delivery plus 130 gallons must be investigated in accordance with requirements of Section 2646(k) of proposed regulations. These amendments require the owner or operator to notify the local agency within 24 hours of completing any inventory reconciliation which exceeds the allowable variation and also to review the inventory records for the preceding 30 days and determine if a calculation error has caused the apparent excessive variation.

Proposed regulations delete the present vadose zone monitoring requirements from Section 2646 and provide the amended requirements in Section 2647. The vadose zone monitoring shall not be used as the sole release detection method of a non-visual monitoring alternative for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water, including intermittent perched ground water, is less than ten feet below the bottom of the tank.

Proposed regulations state that the level of background contamination in the excavation zone and surrounding soils shall not interfere with the vadose zone monitoring method used to detect releases from the underground storage tank. The device shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system.

Existing regulations provide ground water monitoring requirements in Section 2647. Proposed regulations amend this requirements and move it to the proposed Section 2648. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where permissible, as the sole release detection method. Amended conditions under which ground

water monitoring may be used as the sole release detection method of non-visual monitoring, required number of wells, and frequency of sampling of these wells are amended in the proposed Section 2648 in paragraphs (b),(c), and (d).

Existing regulations require that if the ground water monitoring is the sole release detection method, then the ground water level or the highest anticipated ground water level, including intermittent perched ground water to be less than 30 feet from the ground surface. Proposed regulations have changed this 30 feet to 20 feet.

Existing regulations require that the well casings be factory perforated to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface, whichever is the lowest point above the highest anticipated groundwater level. Proposed regulations amend this by requiring perforation to be either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation.

Existing regulations require filter packs to extend at least two feet above the top of the perforated zone. Proposed regulations amend exclude the cases where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones.

Existing regulations require all ground water monitoring wells to be appropriately developed until the discharge water contains less than 10 ppm settleable solids. Proposed regulations require that 72 or more hours following well construction, all ground water monitoring wells to be adequately developed and equilibrium to be established prior to any water sampling.

Existing regulations require bentonite grout for sealing the borings. Proposed regulations amend this by just requiring that an approved grout to be used. Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction.

Proposed regulations state that the owner or operator of underground storage tank at a minimum, shall provide a written detailed description, of the procedures and techniques of sample collection, sample preservation and shipment, analytical procedures, and chain-of-custody control. Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative and qualitative results.

Article 5

Proposed regulations require the owner or operator of an underground storage tank to report on a form provided by the Board any unauthorized release described in Section 25295 of The Health and Safety Code, and any of the following conditions:

1) Any unauthorized release which the owner or operator is unable to clean up or which is still under investigation within eight hours of detection;
2) The discovery of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;
3) Unusual operating conditions observed by the owner or operator unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced;
4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

Existing regulations require reportable releases to be reported within 24 hours after the release has been, or should have been, detected. Proposed regulations require an unauthorized release to be reported to the local agency on a leak report form within 24 hours of detection and also require the owner or operator to investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board. The owner or operator of a underground storage tank with an unauthorized release, within 5 working days shall submit to the local agency a full written report which includes all the known information listed in proposed section 2652 (c).

Proposed regulations adopt the following three new sections into the existing regulations:

Proposed Section 2653; owners or operators required to conduct initial abatement actions shall comply with the requirements of this section.

Proposed Section 2654; owners or operators required to conduct initial site characterization actions shall comply with the requirements of this section.

Proposed Section 2655; at sites where investigations indicate the presence of free product, owners or operators shall comply with the requirements of this section and remove free product to the maximum extent practicable as determined by the local agency while continuing, as necessary, any actions required under Sections 2652 through 2654 of this article. The owner or operator is required to prepare and submit a free product report to the local agency, within 45 days of confirming a release.

Article 6

Existing regulations establish the procedure for making a one-time repair of an underground storage tank containing motor vehicle fuel not under pressure by an interior lining process. Proposed regulations also allow lining as a preventive measure under conditions specified in section 2660. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release.

Existing regulations require the special inspector of steel underground storage tank to sound any perforations or areas showing corrosion pitting with a brass ballpeen hammer to enlarge the perforation or break through a potentially thin steel area. Proposed regulations delete this testing and require the entire tank interior to be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness.

Existing regulations require that the repair material and lining process be listed or certified one year after the regulations become effective or one year after a listing or certification procedure is available, whichever is later. Proposed regulations limit the conditional wording to require listing or certification effective 1 year after the effective data of these regulations.

Proposed regulations impose additional underground storage tank and piping repair requirements, the details of which are listed in proposed Section 2661 in paragraphs (i) through (p).

Proposed regulations of Section 2662 require all underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, to be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

Proposed amendments require owners of motor vehicle fuel tanks made of steel to provide both interior lining and exterior

cathodic protection on or before December 22, 1998. The upgraded tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter in accordance with the standards of paragraph 2662(b)(3).

Proposed regulations of Section 2663 require all existing underground storage tanks, regardless of date of installation, by December 22, 1998 to have an overfill prevention system and a spill container which meets the requirements specified in Section 2635(c). The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. Owners or operators are required to monitor transfer operation constantly, ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank, and to use care to prevent releases due to spills or overfills do not occur.

Proposed regulations of Section 2664 require all underground pressurized piping containing non-petroleum hazardous substances to be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998. All underground pressurized piping shall also be equipped with automatic line leak detectors no later than December 22, 1990. All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment no later than December 1998, unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other corrosion resistant materials compatible with stored products.

Proposed regulations require all underground pressurized piping and secondary containment to be tightness tested after installation and annually thereafter in accordance with the requirements specified in Section 2635(b)(4) and (5).

Article 7

Proposed amendments decrease the temporary closure period of two years as stated in existing regulations to one year. At the end of one year period, the local agency may approve an extension of the temporary closure for a maximum additional period of up to one year if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Underground storage tank owner or operator, at least thirty days prior to closure, shall submit a proposal to the local agency describing how the owner intends to comply with temporary or permanent closure requirements.

Proposed regulations state that the owner of the underground storage tank may terminate the temporary closure and reuse the

underground storage tank only if the local agency approves the reuse according to the requirements specified in proposed Sections 2662, 2663, and 2664 of Article 6.

Under the existing regulations if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release the pre-closure proposal submittal is waived. Proposed regulations delete this language.

Proposed regulations state that the underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements of this article. However hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to Section 13304 of the Water Code and any other applicable law or regulations.

Existing regulations require removal of all residual liquid, solids, or sludges of underground storage tanks subject to permanent closure. Proposed regulations specifically require these removed substances to be handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

Existing regulation require the owners of underground storage tanks subject to permanent closure where the tanks are not removed to place a notice in the deed to the property. Proposed regulations delete this requirement.

Existing regulations require the owner of an underground storage tank being closed pursuant to section 2672 to demonstrate to the satisfaction of the local agency that no authorized release has occurred. Under the existing regulations this demonstration shall be based on the on-going leak detection monitoring, ground water monitoring, or soil sampling. Proposed regulations require this demonstration to be only based on soil sample analysis and/or water analysis if water is present in the excavation.

Existing regulations require if the underground tank or any portion thereof is removed, soil samples to be taken from the soils immediately beneath the removed portions. Proposed regulations specify that these samples shall be taken, a minimum of two feet into native material at each end of the tank in accordance with proposed Section 2649. Existing requirement of separate samples needed for every 200 square-feet for underground storage tanks have been deleted. However, separate samples are to be taken for each 20 lineal-feet of trench for piping.

Existing regulations require that if the underground storage tank or any portion thereof is not removed, soil sampling pursuant to existing Section 2645 to be implemented, if feasible. Proposed regulations change this requirement by stating that at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank. Proposed regulations also require that if the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

Existing regulations require soil samples, taken in compliance with tank closure regulations, to be analyzed for all constituents, of the previously stored hazardous substances and their breakdown or transformation products. Proposed regulations authorize the local agency to waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

Article 8

Existing regulations specify the information to be included in a categorical variance application. Proposed regulations in addition require the applicant to include written comments or recommendations from impacted local agencies.

Existing regulations require the board to complete any documents necessary to satisfy the California Environmental Quality Act (Division 13, commencing with Section 21000, of the Public Resources Code). Proposed regulations delete these requirements since they are duplicative.

Existing regulations require the Board to hold at least 2 public hearings on requests for categorical variances in different areas of the state within 180 days of receipt of a complete variance application. Proposed regulations delete this language and require the Board to hold at least two hearings as set forth in Section 25299.4 of the Health and Safety Code.

Existing regulations state that upon close of a hearing regarding a categorical variance, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days, to allow any interested person to file additional exhibits, reports, or affidavits. Proposed regulations delete this limitation because the requirement is not mandated by the statute.

Existing regulations require the applicant to submit a complete construction and monitoring plan to the local agency, at least 60

days prior to applying for a site specific variance. Proposed regulations delete the specified time frame for such submittal.

Existing regulations specify the minimum information to be included in an application for a site-specific variance. Proposed regulations in addition to these items require names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request to be provided in the site-specific variance application.

Existing regulations require the Regional Board to hold a hearing on the proposed alternative for which site-specific variance is requested within 60 days after receiving a complete variance application. However, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code for local agencies to join in the application. Proposed regulations delete this language and require the Regional Board to hold a hearing on the proposed variance as specified in Section 25299.4(c) of the Health and Safety Code.

Existing regulations require the Regional Board to consider the local agency's recommendations in addition to the completeness and accuracy of information provided by the applicant in rendering its decision. Proposed regulations delete this language since it is duplicative of requirements included in Section 25299.3 of Health and Safety Code.

Existing regulations require the Regional Board to notify the applicant and the local agency of its decision regarding site-specific variance application. Proposed regulations require the Regional Board to notify the Board as well.

Article 9

Proposed regulations do not change the requirements of existing regulations in this section.

Article 10

Proposed regulations require a permit application to contain a description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection in addition to the existing required information. Permit application also shall include information showing compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

Proposed regulations require the local agency to provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Existing regulations describe the underground storage tank owner's responsibility in reporting to the local agency within 30 days any changes in permit conditions such as monitoring procedures, the storage of new hazardous substances, and underground storage tank repair or replacement. Proposed regulations delete this language which duplicates requirements now included in section 25286 of Health and Safety Code, which requires the permittee to notify the local agency of any changes in usage of the underground storage tank within a time period specified by the local agency.

Existing regulations require written records of all monitoring performed to be maintained on-site for a period of at least three years from the date the monitoring was performed and be available to the local agency, Regional Board, or Board upon demand during any site inspection. Proposed regulations change the language to require written records of all monitoring and maintenance performed to be maintained on-site or off-site at a readily available location if approved by the local agency for a period of at least three years. These records must be made available, upon request within 36 hours, to the local agency or the Board.

Existing regulations require the underground storage tank owner to apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit. Exiting regulations also give the local agencies 18 months, after establishing a program implementing provisions of this chapter, to issue permits for all existing underground storage tanks. Proposed regulations delete these time frames and also require the permits to show the state underground storage tank identification number(s) for which the permit was issued.

Existing regulations require the permit holder within 30 days of receiving an inspection report from either the local agency or the special inspector, to file a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring system. Proposed regulations further restrict permit holders response time by requiring implementation of the corrections specified in the inspection report within thirty days of its receipt.

Proposed regulations add a new paragraph to permitting conditions of existing section 2712, authorizing the local agency to take appropriate enforcement action pursuant to Section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring requirements specified in Article 3 or 4 of this

chapter or the reporting requirements specified in Article 6 of this chapter.

Existing regulations require local agencies to notify the Board of any changes in permits or any unauthorized release on the Board's annual report forms or other methods determined by the Board by March 1 of each year. Proposed regulations delete this and require local agencies to transmit the updated unauthorized release report to the Regional Board overseeing the cleanup, on a quarterly schedule established by the Board.

e. Text of proposed regulations, April 12, 1991

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PROPOSED AMENDMENTS. (NEW TEXT IS UNDERLINED; DELETED TEXT IS CROSSED OUT.)

CALIFORNIA CODE OF REGULATIONS

TITLE 23 WATERS

DIVISION 3 WATER RESOURCES CONTROL BOARD

~~CHAPTER~~ CHAPTER 16 UNDERGROUND STORAGE TANK REGULATIONS

Article ~~2~~ 1. Definition of Terms

~~2620~~

2610. Definitions/Applicability of Definitions

(a) Unless the context clearly requires otherwise, the terms used in this ~~chapter~~ chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by Section 2611 of this article.

(b) Except as otherwise specifically provided herein, the following terms are defined in Section 25281 of Chapter 6.7 of Division 20 of the Health and Safety Code:

Automatic line leak detector

Board

Department

Facility

Federal act

Hazardous substance

Local agency

Operator

Owner

Person

Pipe

Primary containment

Product-tight

Release

Secondary containment

Single-walled

Special inspector

Storage/store

SWEEPS

Tank

Tank integrity test

Tank tester

Unauthorized release

Underground storage tank

Underground tank system/tank system

Authority: Health and Safety Code (H&SC) 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25291

~~2621~~

2611. Additional Definitions

Unless the context clearly requires otherwise, the following definitions shall apply to terms used in this ~~chapter~~ chapter.

"Coatings expert" means a person who, by reason of thorough training, knowledge and experience in the coating of metal surfaces, is qualified to engage in the practice of internal tank lining inspections. This person must be independent of any lining manufacturer or applicator and have no financial interest in the tank or tanks being monitored.

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Corrosion specialist" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on metal underground storage tanks and associated piping. The term includes only persons who have been certified as being qualified by the National Association of Corrosion Engineers or registered professional engineers who have certification or licensing that requires education and experience in corrosion control of underground storage tanks and associated piping.

"Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. The term includes only persons who have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

"Double walled tank" means a container with two complete shells which provide both primary and secondary containment. The outer shell must provide structural support and must be constructed primarily of noncorrosive materials including, but not limited to, concrete, steel, and plastic.

"Emergency containment" means a containment system for accidental spills which are infrequent and unpredictable.

"Existing underground storage tank" means any underground storage tank that was installed prior to January 1, 1984. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid).

"Farm tank" means any one or combination of tanks located on a farm that holds no more than 1,100 gallons of motor vehicle fuel which is used primarily for agricultural purposes and is not held for resale.

"First ground water" means the uppermost saturated horizon encountered in a bore hole.

"Ground water" means subsurface water which will flow into a well.

"Heating oil tank" means a tank located on a farm or at a personal residence which holds no more than 1,100 gallons of home heating oil which is used consumptively at the premises where the tank is located.

"Holiday" when used with respect to underground storage tank coating or cladding means a pinhole or void in a protective coating or cladding.

"Hydraulic lift tank" means an underground storage tank which holds hydraulic fluid to operate lifts, elevators, and other similar equipment.

"Independent testing organization" means an organization which tests products or systems for compliance with voluntary consensus standards. To be acceptable as an independent testing organization, the organization must not be owned or controlled by any client, industrial organization, or any other person or institution with a financial interest in the product or system being tested. For an organization to certify, list, or label products or systems in compliance with voluntary consensus standards, it shall maintain formal periodic inspections of production of products or systems to ensure that a listed, certified or labeled product or system continues to meet the appropriate standards.

"Independent third party" means independent testing organizations, consulting firms, test laboratories, not-for-profit research organizations and educational institutions with no financial interest in the matters under consideration. An independent third party must not be owned or controlled by any client, industrial organization, or any other institution with a financial interest in the matter under consideration.

"Integral secondary containment" means a secondary containment system manufactured as part of the underground storage tank.

"Interstitial space" means the space between the primary and secondary containment systems.

"Liquid asphalt tank" means an underground storage tank which contains steam-refined asphalts.

"Liquefied petroleum gas tank" means an underground storage tank which contains normal butane, isobutane, propane, or butylene (including isomers) or mixtures composed predominantly thereof in liquid or gaseous state having a vapor pressure in excess of 40 pounds per square inch absolute at a temperature of 100 degrees of Fahrenheit.

"Manufacturer" means any business which produces any item discussed in these regulations.

"Membrane liner" means any membrane sheet material used in a system for secondary containment system. A membrane liner must be compatible with the substance stored.

"Membrane liner fabricator" means any company which converts a membrane liner into a system for secondary containment.

"Membrane manufacturer" means any company which processes the constituent polymers into membrane sheeting from which the membrane liner is fabricated into a system for secondary containment.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn.

Motor vehicle fuel tank" means an underground storage tank that contains a product which is intended to be used primarily to fuel motor vehicles or fuel an engines.

"Nationally recognized independent testing organization" means any one of the following organizations, or other organizations approved by the Board:

American National Standards Institute (ANSI)
American Society of Mechanical Engineers (ASME)
American Society for Testing and Materials (ASTM)
National Association for Corrosion Engineers (NACE)
National Sanitation Foundation (NSF)
Underwriters Laboratories (UL)
Underwriters Laboratories of Canada, Inc. (ULC)

"New underground storage tank" means any underground storage tank subject to this subchapter which is installed after the effective date of this subchapter as amended or which complies with the requirements of Article 3 of this subchapter as amended; or which was installed after January 1, 1984, and before the effective date of this subchapter as amended pursuant to a permit issued by the local agency implementing the provisions of Chapter 6.7 of Division 20 of the Health and Safety Code relating to new underground storage tanks.

"Non-volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and consideration of circumstances and physical phenomena internal or external to the tank.

"Perennial ground water" means ground water that is present throughout the year.

"Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute.

"Pipeline leak detector" means a continuous monitoring system for underground piping capable of detecting at any pressure a leak rate equivalent to a specified leak rate and pressure with a probability of detection of 95 percent or greater and a probability of false alarm of 5 percent or less.

"Probability of detection" means the likelihood, expressed as a percentage, that a test method will correctly identify a leaking underground storage tank.

"Probability of false alarm" means the likelihood, expressed as a percentage, that a test method will incorrectly identify a "tight" tank as a leaking underground storage tank.

"Qualitative release detection method" means a method which detects the presence of a hazardous substance or suitable tracer outside the underground storage tank being tested.

"Quantitative release detection method" means a method which determines the integrity of an underground storage tank by measuring a release rate or by determining if a release exceeds a specific rate.

"Release detection method" means a method used to determine whether a release of a hazardous substance has occurred from an underground tank system into the *environment or into the interstitial space between an underground tank system* and its secondary containment.

"Septic tank" means an underground storage tank designed and used to receive and process biological waste and sewage.

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground ~~storage~~ tank system volume, including the volume of any connected piping, is below the ground surface or enclosed below earthen materials.

"Sump", "pit", "pond", or "lagoon" means a depression in the ground which lacks independent structural integrity and depends on surrounding earthen material for structural support of fluid containment.

"Tank integrity test" means a test method that can ascertain the physical integrity of an underground storage tank. The term includes only test methods which are able to detect a leak of 0.1 gph with a probability of detection of at least 95 percent and a probability of false alarm of 5 percent or less. The test method may be either volumetric or non-volumetric in nature. A leak rate is reported using a volumetric test method, whereas, a non-volumetric test method reports whether or not a substance or physical phenomenon is detected which may indicate the presence of a leak.

"Unauthorized release" as defined in Chapter 6.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, use, or disposal.

"Volumetric test" means a tank integrity test method that ascertains the physical *integrity of an underground storage tank through review and comparison of tank* volume.

"Voluntary consensus standards" means standards that are developed after persons with a direct and material interest have had a right to express a viewpoint and, if dissatisfied, to appeal at any point. Voluntary consensus standards shall be developed after everyone with a direct and material interest has had a right to *express a viewpoint and, if dissatisfied, to appeal at any point (a partial list* of the organizations that adopt voluntary consensus standards are shown in Appendix I, Table B).

"Wastewater treatment tank" means an underground storage tank located inside a public or private wastewater treatment facility. The term includes untreated wastewater holding tanks, oil water separators, clarifiers, sludge holding tanks, filtration tanks, and clarified water tanks that do not continuously contain hazardous substances.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25283

Code of Federal Regulations, Title 40, Part 280.10 (40 CFR 280.10)

Article 1/ 2 General Provisions

2610/

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure/ of underground storage tanks; requirements/ and specify variance request procedures.

(b) Persons who own one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. In Section 2611 of this article/ If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to/ monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable the permit/, and properly close the underground storage tank as required by the permit/ The owner shall remain responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

(c) Counties shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits [operating permit(s)] to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its boundaries in accordance with Section 25283 of the Health and Safety Code. Local agencies A permit may be shall issued an operating permit for each underground storage tank, for several underground storage tanks, or for a each facility, as appropriate, within their jurisdiction.

(d) All Owners of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this subchapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this subchapter. In addition, All owners and/or operators of underground storage tanks subject to this subchapter must comply with the release reporting requirements of Article 5 of this subchapter, the repair and upgrade requirements of Article 6 of this subchapter, the closure requirements of Article 7 of this subchapter, and the underground storage tank operating permit application requirements of Article 10 of this subchapter.

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Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25283, 25284, 25299.1, 25299.3, 40 CFR 280

2621.

2621. Exemptions

(a) The owners of term "underground storage tank"s that meet does not include any of the following conditions shall be exempt from the provisions of this subchapter:

(1) A farm tank.

(2) A heating oil tank.

(3) Hydraulic lift tanks with a capacity of less than 110 gallons.

(4) A liquefied petroleum gas tank.

(5) A liquid asphalt tank.

(6) A septic tank.

(7) A sump, pit, pond, or lagoon.

(8) A wastewater treatment tank except a tank which is part of an underground storage tank system.

(9) A pipeline located in a refinery or in an oil field.

(10) Tanks and catch basins designed for storm water collection.

(11) Tanks containing radioactive material that are regulated by other federal, state or local agency such as; spent fuel pools, radioactive waste storage tanks, and similar tanks.

(12) An emergency containment tank kept emptied to receive accidental spills and approved for such use by the appropriate local agency.

(13) Drums located in basements which contain 55 gallons or less of material.

(1) Underground storage tanks that are located within the jurisdictions//of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, implements the requirements of Subchapter 6.7 of Division 20 of the Health and Safety Code pertaining to construction and monitoring standards for new and existing underground storage tanks provided that//

[A] The ordinance, as it may be amended, continues to meet at a minimum the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code; and

[B] The county or city issues permits for underground storage tanks pursuant to the ordinance.

[2]

(14) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the underground storage tank has been issued a hazardous waste facilities permit for the underground storage tank by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

b) Sumps which are a part of a monitoring system as required under Article 3 of this subchapter are considered part of the secondary containment or leak detection system of the primary containment and are required to meet the appropriate construction criteria.

c) The owner of a farm or heating oil tank or any other tank which is excluded from regulation as an underground storage tank by virtue of its use shall, within 120 days after change in or discontinuance of the use which provided the exclusion:

(1) Apply for and promptly obtain a valid operating permit; or

(2) Close the tank in accordance with Article 7 of these regulations.

Resumption of a use which justifies an exclusion from regulation within 120 days after change or discontinuation of the use which provided the exclusion will reactivate the exclusion.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299.1

40 CFR 280.10, 280.12

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Article 3. New Underground Storage Tank Construction and Monitoring Standards

2630. General Applicability of Article

~~(a) This article contains statewide minimum standards for the construction/ installation/ and monitoring of new underground storage tanks that contain hazardous substances/~~

(a) The standards in this article apply to owners of new underground storage tanks. Underground storage tanks installed between January 1, 1984 and the effective date of these amendments may be deemed to be in compliance with the standards in this article if they were installed in accordance with Federal and State standards that existed at the time of installation. However, the requirements in Article 6 must be complied with if applicable.

(b) Sections 2631 and 2632 of this article specify construction and monitoring standards for all new underground storage tanks. New underground storage tanks that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 of this article in lieu of those specified in Sections 2631 and 2632 of this article./ ~~respectively/~~ However, if the construction standards in Section 2633 of this article are used, then the monitoring standards of Section 2634 of this article ~~must~~ shall also be used.

(c) All new underground storage tanks, piping, and secondary containment systems ~~must~~ shall comply with Section 2635 of this article.

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Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2631. Construction Standards for New Underground Storage Tanks

(a) ~~Primary and secondary levels of containment shall be required for~~ All new underground storage tanks including associated piping used for the storage of hazardous substances shall be required to have primary and secondary levels of containment. Secondary containment can be manufactured as an integral part of the primary containment or it can be constructed as a separate containment system. ~~as defined in Article (2) of this subchapter/~~

(b) All primary containment including any integral secondary containment system, shall be ~~produced/~~ designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components such as special accessories, fittings, coatings or linings, monitoring systems and level controls used to form the underground storage tank system shall bear an approval from an independent testing organization. This requirement shall become effective on July 1, 1991 for underground storage tanks, January 1, 1992 for piping, and July 1, 1992 for all other components. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the following minimum information:

(1) Engineering standard used;

(2) Nominal diameter in feet;

(3) Nominal capacity in gallons;

(4) Degree of Secondary Containment;

(5) Useable capacity in gallons;

(6) Design pressure in psig;

(7) Maximum operating temperature in degrees Fahrenheit;

(8) Construction materials;

(9) Year manufactured; and

(10) Manufacturer.

(c) A primary containment system with or without an integral secondary containment system shall have wear plates (striker plates) installed, center to center, below all accessible openings. The plates shall be made of steel or other appropriate material if steel is not compatible with the hazardous substance stored. The width of the plate shall be at least eight inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 1/8 inch and those made of other materials shall be of sufficient thickness to provide equivalent protection. The plate, if under 1/4 inch thick, shall be rolled to the contours of the underground storage tank and all plates shall be bonded or tack welded in place.

[(c)]

(d) A secondary containment system such as vaults, shall be designed and constructed according to an engineering specification approved by a state licensed engineer or according to a nationally recognized industry code or engineering standard. The engineering specification shall include the construction procedures. [All secondary containers shall be constructed of

Materials used to construct the secondary containment system shall have sufficient thickness, density, and corrosion resistance [composition] to prevent structural weakening or damage to [of] the secondary containment system as a result of contact with any released hazardous substance. [and shall be capable of containing any unauthorized release of the hazardous substance/stored within the primary container(s) for at least the maximum anticipated period sufficient to allow detection and removal of the unauthorized release.] The following requirements apply to all secondary containment systems:

[(A) If a hazardous substance has come into contact with the secondary container and either additional primary containers exist within the secondary container or the leaking primary container is repaired as specified in Article 6 of this subchapter or closed as specified in Article 7 of this subchapter and replaced by a new primary container, the owner shall demonstrate to the satisfaction of the local agency that the requirements of Subsection (c) of this section are still achievable or replace the secondary container.]

[(c)]

(1) The secondary containment system shall be constructed [have the ability] to provide at least [contain] the following volumes:

[(1)]

(A) At least 100 percent of the usable capacity of [volume of] the primary containment system where only one primary container is within the secondary containment system.

[(2)]

(B) In the case of multiple primary containers within a single secondary containment system, the secondary containment system shall be large enough to contain 150 percent of the volume of the

largest primary container placed in within it, or 10 percent of the aggregate internal volume of all primary containers in within the secondary containment/ system whichever is greater. When all primary containers are completely enclosed within the secondary containment system, the restrictions of this subparagraph do not apply.

(f)

(2) If the secondary containment system is open to rainfall, then it shall be constructed such to accommodate the volume of precipitation which could enter the secondary containment system during a 24-hour, 100 25-year storm in addition to the volume of hazardous substance storage required in Paragraph Subsection (c) (d)(1) of this section.

(g)

(3) If backfill material is placed in the secondary containment system, the volumetric requirements for the pore space of a granular material placed in the secondary container as backfill for the primary container shall be equal to or greater than that the requirement in Paragraph Subsection 2521(c) (d)(1) of this section. The available pore space in the secondary containment system backfill shall be determined using appropriate standard engineering methods and safety factors, and shall consider The specific retention and specific yield of the backfill material, the location of any the primary container within the secondary containment, and the proposed method of operation for the secondary containment system shall be considered in determining the available pore space.

(h)

(4) The secondary containment system shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any

precipitation/ subsurface infiltration of hazardous substance released from the primary container liquid within the system.

(i)

(5) The floor of the secondary containment system shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and be covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism. If this access casing is within a secured facility/ the requirements for a locked cap may be waived by the local agency. The casing shall have sufficient thickness be thick enough to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.

(j)

(6) Systems for Secondary containment systems utilizing membrane liners shall be certified by an independent testing organization. A membrane liner shall not contain any primary nutrients or food-like substances attractive to rodents and must meet the requirements in Table 3.1 after 30-day immersion in the stored hazardous substance following requirements.

Table 3.1

Standards for Membrane Liners

Property	Test Method		Requirement
	Unsupported Liners	Supported Liners	
(A) Tensile strength	ASTM 638	ASTM D751	
Tensile strength at yield		Procedure B	>300 lbs/in
Tensile strength at break		(Cut Strip Method)	of width
			>200 lbs/in
			of width
(B) Permeability	ASTM E96	ASTM E96	<0.65 gram/ meter^2-hr
(C) Seam strength	ASTM D413	ASTM D751	= Parent material
(D) Solubility	ASTM D471	ASTM D471	<0.10% by weight
(E) Puncture		FTMS 101B Method 2031	350 lbs.
	FTMS 101 Method 2065		80 lbs.
(F) Tear		ASTM D751	125 lbs.
	ASTM D1004 DIEC		50 lbs.

(1) The membrane liner shall have a permeability factor of 0.25 ounces per square foot per 24 hours or less.//Such permeability shall constitute the maximum rate of transport over time of the hazardous substance proposed for storage.//Permeability shall be evaluated according to accepted engineering practices for materials testing.//Some acceptable methods for determining the permeability are provided in Appendix I of this subchapter.

(2) The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(f) of this section only if the liner material meets the following standards.//The material properties specified in these standards shall be determined using accepted engineering practices for materials testing.//Some acceptable methods for determining these properties are provided in Appendix I of this subchapter.

(A) The volume swell after a 24-hour period of immersion in the stored hazardous substance shall not exceed 3 percent of the original liner membrane material thickness.

(B) The maximum change in elongation//of the liner membrane material at break after 24 hours of immersion in the stored hazardous substance shall not exceed 2 percent of the original elongation.

[C] The liner membrane material shore A hardness (Brattleboro) after 24 hours of immersion in the hazardous substance shall be within 5 percent of the original hardness;

[D] For a containment test, the rate of transport through the liner membrane material of the hazardous substance after a period of 24 hours shall not exceed 5 percent by weight of the hazardous substance being tested;//The liquid height for the test shall be no greater than that expected in actual site conditions;

[E] The rate of solubility of the liner membrane material in the hazardous substance for a period of 24 hours shall not exceed 0.1 percent by weight of the section of liner being tested;

[F] The liner seam strength shall be equal to the tensile strength of the parent material when tested in accordance with accepted engineering practices for materials testing;//Some acceptable methods for determining the liner seam strength are provided in Appendix I of this subchapter;

[K]

(7) The A membrane liner, if used, shall be installed under the direct supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.

[I]

(8) The excavation base and walls for the synthetic a membrane liner shall be prepared to the membrane liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects or protrusions.

[J]

e) Laminated, coated, or clad materials shall be considered a single walled and shall do not be construed to fulfill the requirements of both primary and secondary containment.

[M]

f) Double walled Underground storage tanks with integral secondary containment systems, which satisfy the construction standards of Section Paragraph 2631(b) of this section and [f] of this Article shall be considered to fulfill the volumetric requirements for secondary containment specified in Section 2631[e] Paragraph (d)(1) of this Article of this section.

[O] The design of double walled underground storage tanks shall allow for monitoring of the annular space;

[P] Visually the annular space of a double-walled underground storage tank as a monitoring method shall not be allowed unless a strike plate or other approved devices used to protect underground storage tank are located directly under the monitoring opening;

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[d]

(g) The double walled Underground storage tanks with secondary containment systems shall be so designed and installed that any loss of hazardous substance from the primary containment will drain to a specific location within the annular space as required to be detected by an interstitial monitoring device or method.

(h) An underground storage tank which is designed with an integral secondary containment system must provide 100 percent secondary containment unless it is equipped with the overfill-prevention system in accordance with Section 2635(c)(2)(C) of this Article. In this case the top portion of the tank, no greater than two feet wide along the length of the tank, may be single-walled.

[f] Any special accessories, fitting, coating, or lining not inherent within the initial design of the primary container or double-walled underground storage tank shall be approved by a nationally recognized independent testing organization or a demonstration of integrity with the primary container or double-walled underground storage tank shall be required by the local agency.

[g] All primary containers and double-walled underground storage tanks subject to flotation shall be weighted or anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2632. Monitoring Requirements, Initial Responses, Standards and Response Plan for New Underground Storage Tanks

(a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.

(b) The owners or operators of underground storage tanks subject to this section shall implement a monitoring program that is approved by the local agency and required specified in the underground storage tank operating permit. The program shall utilize one or more of the methods interstitial space monitoring as described in Subsection Paragraph (c) of this section and shall address include the items listed in Subsection [d] Paragraph (e) of this section.

(c) Monitoring of the interstitial space between the primary and secondary container shall utilize either visual monitoring of the primary containment system container as described in Paragraph Subsection (1) of this subsection or one or more of the methods listed in Paragraph Subsection (2) of this subsection.

(1) A program which relies on the visual monitoring of the primary containment system container shall incorporate all of the following:

(A) Provisions that All exterior surfaces of the underground storage tanks and the surface of the floor directly beneath the underground storage tanks shall be capable of being monitored by direct viewing.

(B) Visual inspections shall be performed daily, except on weekends and recognized state and/or federal holidays. ~~and~~ Inspections may be more frequent if required by the local agency~~/~~ or ~~]~~the local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tanks are very infrequent. In these instances, the minimum frequency of visual inspection shall be no less than once per week and the inspection schedule shall take into account the minimum anticipated time during which the secondary containment system is capable of containing any unauthorized release and the maximum length of time any hazardous substance released from the primary ~~container~~ containment system will remain observable on the surface of the secondary containment system. The inspection schedule shall be ~~established~~ such that inspections will occur on a routine basis when the liquid level in the underground storage tanks is at its highest. The inspection frequency shall be ~~selected~~ such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tanks between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tanks.

(C) The ~~recordation of the~~ liquid level in the underground storage tanks shall be recorded at the time of each inspection.

(D) The observation of any liquid ~~on the exterior of or the surface immediately~~ around or beneath an ~~the~~ underground storage tank ~~being visually monitored~~ shall ~~cause~~ require the owner or operator to undertake ~~implement all or a portion of~~ the following action or actions:~~/ The applicable actions and their timing shall be based on the site-specific situation/~~ be intended to determine if the observed liquid constitutes an unauthorized release/ and shall be included in the permit/~~

(i) Conduct an appropriate laboratory or field analysis of the observed liquid. If the liquid is a hazardous substance, the owner or operator shall proceed with the actions indicated in Paragraphs (ii) and (iii) below.

(ii) Conduct an appropriate tank integrity test; ~~testing of the underground storage tank/ utilizing the//procedures described in Section 2643 of Article 4 of this Subchapter;~~ and

(iii) If a leak is confirmed, immediately remove ~~Removal of~~ all hazardous substances from the underground storage tank and the secondary containment system. ~~[as specified in Subsection (d) of this section]/~~

(2) A program which relies on detecting the hazardous substance in the interstitial space ~~between the primary and secondary container~~ shall utilize one or more of the methods provided in Table 3.12 of this article. The following requirements shall apply when appropriate:

(A) The interstitial space of the underground storage tank shall be monitored using a continuous monitoring system.

(B) The continuous monitoring [deleted] system shall be connected to an audible and visual alarm system as approved by the local agency.

[B] [deleted]

(C) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, [deleted], the monitoring program shall specify the proposed method(s) for determining the presence or absence of the hazardous substance in the interstitial space if the indirect methods indicate a possible unauthorized release.

(d) Underground piping with secondary containment shall be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system, and

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of

detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with Section 2643(g)of these regulations.

(3) Other monitoring methods may be used in lieu of the requirement in Paragraph 2 above if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section. A continuous monitoring system, in Paragraph 1 above, which also shuts down the pump in addition to activating the alarm system, satisfies the automatic line leak detector requirement in Paragraph 2.

[d]

(e) All monitoring programs shall include the following:

(1) A written routine monitoring procedure which establishes [deleted]:

(A) The frequency of performing the monitoring method;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) [deleted] where the monitoring will be performed;

(D) The name(s) [deleted] and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) [deleted] The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(2) A response plan developed by the permit applicant which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary containment system within the shortest possible time and no longer than the time consistent with the ability of the secondary containment system to contain the hazardous substance, but not more than 30 days. The response plan shall include, but is not limited to, the following:

(A) A description of the proposed methods and equipment to be used for removing and properly disposing of any the hazardous substances, including the location and availability of the required equipment if not permanently on-site, and an equipment maintenance schedule for the equipment located on-site.

(B) The name(s) or and title(s) of the person(s) responsible for authorizing any the work to be performed, necessary under the response plan.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.43

Table 3.12

Methods of Monitoring for Hazardous Substances in the Secondary Container Interstitial Space of an Underground Storage Tank System

Condition of the Secondary System [1]	Type of Substance Stored	Methods of Monitoring: Liquid Level Indicator [2]	Hazardous Substances Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X		X
Wet	Nonvolatile	X	X		X

[1] A "dry" system does not contain liquid within the secondary containment during normal operating conditions while a "wet" system does.

[2] Includes continuously operated mechanical or electronic devices. Manual determinations using mechanical, electronic, or visual readings or visual determinations to detect the presence of any liquid in dry systems or a change in liquid levels in wet systems.

[3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.

[4] Primarily used for double-walled underground storage tanks to Detects changes in pressure or vacuum in the interstitial space of an underground storage tank with secondary containment. Between primary and secondary container. The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized independent testing organization.

2633. Alternate Construction Requirements ~~Standards~~ for New Motor Vehicle Fuel Underground Storage Tanks

(a) This section specifies alternate construction ~~standards~~ requirements for new underground storage tanks which only contain motor vehicle fuels. ~~This section may be utilized by permit applicants~~ Owners of new underground storage tanks which only contain motor vehicle fuels may comply with this section in lieu of Section 2631 of this article. If this section is used ~~in lieu of Section 2631 of this article~~, then the monitoring ~~standards~~ requirements specified in Section 2634 shall be used in lieu of those specified in Section 2632 of this article.

(b) ~~Primary containers~~ Underground storage tanks used for the underground storage of motor vehicle fuel and constructed under this section shall be composed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with fiberglass reinforced plastic. ~~and~~ These tanks shall be installed in conjunction with the leak interception and detection system decribed in Paragraphs ~~Subsections~~ (d) through (g) of this section. The primary containment system shall meet the requirements described in Sections 2631(b) and 2631(c) of this article.

(c) ~~Primary containers~~ Underground storage tanks used for the underground storage of motor vehicle fuel ~~and~~ that are constructed of materials other than those specified in ~~Subsection~~ Paragraph 2633(b) ~~of this article~~ above shall be subject to the requirements of Sections 2631 and 2632 of this article.

d) The ~~permit applicant~~ owner of an underground storage tank shall demonstrate the satisfaction of the local agency that the leak interception and detecti system used ~~achieves the criteria of Section 2631(f) of this article~~ is capable of detecting a release before it can escape from the containment system.

e) The floor of any leak interception and detection system shall be constructe on a firm base and sloped to a collection sump. Methods of construction fo the leak interception and detection system ~~for~~ utilizing membrane lin sh comply with the requirement of Section 2631(d)(6) of this article. ~~Be considered to have satisfied the//requirements of 2631(f) if and only if t liner material meets the//following standards:~~

~~(1) The membrane liner material shall have the permeability factor specifie in Subsection 2631(g)(1) of this article as tested against//ASTM Reference Fuel B:~~

~~(2) The membrane liner material shall be suitable for containment of the motor vehicle fuel in that such material shall meet the criteria set forth in Subsections 2631(g)(2)(A) through (E) of this article as tested against the motor vehicle fuel to be stored considering its variability or against ASTM Reference Fuel B:~~

~~(3) The membrane liner shall meet the requirements set forth in Subsection 2631(g)(3) of this article:~~

[(A) The liner has been installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator;]

[(B) The excavation base and walls which will come into contact with the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions;]

(f) Access casings shall be installed in the collection sump of any secondary containment system with backfill in the interstitial space. The access casing shall be:

(1) Designed and installed to allow the liquid to flow into the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

(3) Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donate, capture, nor mask constituents for which analyses will be made;

(4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

(5) Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system;

(6) Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism; and

(7) Capable of meeting requirements of local well permitting agencies.

[(F)]

(g) The leak interception and detection system and the response plan shall provide prevent the contact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water elevation. Proof that the leak interception and detection system and response plan will protect ground water must be demonstrated by the permit applicant owner of the underground storage tank to the satisfaction of the local agency. The requirement for this demonstration may be waived//by the local agency for underground storage tanks that comply with the//requirements of Subsections [(E)] [(F)] and (G) of Section 2631 of this//article/ The demonstration shall/ at a minimum/ consider the following/ In determining whether the leak interception and detection system will adequately protect ground water, the local agency shall consider, at a minimum, the following:

(1) The containment volume of the leak interception and detection system;

(2) The maximum leak which could go undetected under the monitoring method required in Section 2634 of this article and the maximum period during which the leak will occur go undetected;

(3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system;

(4) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(5) The nature of the unsaturated soils under the leak interception and detection system and their ability to adsorb contaminants or to allow vertical movement of contaminants;

(6) The effect of any precipitation or subsurface infiltration on the movement of any leak of hazardous substance and the available volume of the leak interception and detection system; and

(7) The nature and timing of the response plan required by Section 2634 of this article to clean up the any hazardous substances which have been discharged from the primary container.

(d) Pressurized piping systems that are connected to an underground storage tank that is be constructed pursuant to the requirements of this section/and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system requirements of this section/ provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6/7 of Division 20 of the Health and Safety Code/

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291
40 CFR 280.20

2634. Monitoring and Response Plan Standards for New Motor Vehicle Fuel Underground Storage Tanks Constructed Pursuant to Section 2633

(a) Motor vehicle fuel underground storage tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of Section 2633 of this article shall be monitored according to the requirements of the//appropriate sections of Chapter 6/7 of Division 20 of the Health and Safety Code///In addition/ as follows:

(1) Monitoring of The leak interception and detection system shall be monitored pursuant to Subsections Paragraph (b)/ [c]/ and [d] of this section;

(2) The motor vehicle fuel inventory shall be reconciled according to the performance requirements in Section 2646; and

(3) All underground pressurized piping shall be tested in accordance with the requirements of Section 2635(b) and monitored in accordance with the requirements of Section 2632(d).

[B] The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a collection sump.

[C] Access casing[s] shall be installed in the collection sump.//The access casing shall be:

[1] Capable of allowing any liquid that may be moving along the upper surface of the leak interception and detection system to enter the casing;

[2] Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

[3] Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donated capture nor mask constituents for which analyses will be made;

[4] Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

[5] Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system; and

[6] Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing[s] from entry of surface water, accidental damage, unauthorized access, and vandalism.//A secure facility will satisfy the requirements for protection against unauthorized access and vandalism.

[D]

(b) Monitoring of programs for the leak interception and detection system shall incorporate all of the following must meet the following requirements:

(1) The use of a leak interception and detection system shall detect any unauthorized release of the motor vehicle fuel collected utilizing one or more of the monitoring methods for volatile hazardous substances provided in Table 3.2 of this article. The following requirements shall apply as appropriate:

(A) Continuous monitoring devices systems shall be connected to an audible and visual alarm system approved by the local agency. or

(B) Manual monitoring, if used, shall be performed daily, except on weekends and recognized state and/or federal holidays, but no less than once in any 72 hour period. Manual monitoring may be required on a more frequently basis as specified by the local agency. Based on an assessment of the available volume of the leak interception and detection system and the accuracy of the proposed monitoring method.//Approved methods of monitoring the leak interception and detection system include liquid level indicators, hazardous substance sensors, and vapor monitors as specified for volatile hazardous substances in Table 3.1 of this article.

(2) A written routine monitoring procedure ~~which includes~~ shall be prepared and shall establish:

(A) The frequency of performing the monitoring ~~method~~;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) ~~from~~ ~~which~~ where the monitoring will be performed;

(D) The name(s) ~~or~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the *manufacturer's instructions; and*

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(3) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, (i.e., liquid level measurements), the monitoring program shall specify the proposed

method(s) for determining the presence or absence of the hazardous substance if the indirect method indicates ~~the possible presence~~ a possible unauthorized release of ~~the~~ motor vehicle fuel.

~~(c)~~

(c) A response plan for an unauthorized release shall be developed prior to the underground tank system being put into service. ~~For any leak interception and detection system which does not meet the volumetric requirements of Subsection 2631(c), (f), and (g) of this Article///For those underground storage tanks~~ If the leak interception and detection system~~,~~ that meets the volumetric requirement of Subsection 2631(d) of this article, the local agency shall require the owner to develop a plan pursuant to the requirements of Subsection 2632~~(d)~~(e)(2) of this article. If the leak interception and detection system does not meet the volumetric requirements of Subsections 2631(d) the response plan shall consider the following:

(1) The volume of the leak interception and detection system in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection system must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked material;

(3) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system and their ability to absorb contaminants or to allow ~~vertical~~ movement of contaminants; and

(5) The methods and scheduling for removing all of the hazardous substances which may have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sump.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, ~~25299/1~~ 25291, 25292
40 CFR 280.41

2635. ~~General Construction Standards~~ Installation and Testing Requirements for New Underground Storage Tanks and Piping

~~(a) The following subsections shall apply to all primary and secondary containers including leak interception and detection systems.~~

(a)

~~(b)~~ Primary ~~containers~~ and ~~double walled underground storage tanks~~ secondary containment systems shall be designed, and constructed, tested, and certified to comply, as applicable, with all of the following requirements:

~~(1) Cathodically protected steel underground storage tanks, steel underground storage tanks clad with glass fiber-reinforced plastic, and glass fiber plastic underground storage tanks shall be fabricated and designed to standards developed by a nationally recognized independent testing organization or be listed by the testing organization./// Applicable design standards shall include, but are not limited to, those provided in Appendix I of this subchapter.~~

~~(2) Underground storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chemical compatibility with the hazardous substances to be stored using recognized engineering practices for materials testing./// Some acceptable methods for determining durability and chemical compatibility with the hazardous substances are provided in Appendix I of this subchapter.~~

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[3] Except for steel underground storage tanks, a weak plate (striker plate) shall be centered under all accessible openings of the underground storage tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material resistant to the stored hazardous substance.//The width of the plate shall be at least 9 inches wide and have an area of 1 square foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.050 inch (1.25 mm), and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of the underground storage tank and bonded or seam welded in place.

[6]

(1) All underground storage tanks shall be tested, at the factory before being put into service transported, in accordance with the applicable sections of the industry code or engineering standard under which they were are built. The ASME code stamp or Listing Mark of Underwriters Laboratories, Incorporated, (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement.//

[4] Single-walled primary containers of steel and double-walled underground storage tanks constructed of steel which are not clad with glass fiber reinforced plastic, shall be protected by a properly installed, maintained, and monitored cathodic protection system.//Selection of the type of protection to be employed shall be based on a certification listing by a nationally recognized independent testing organization or the judgment of a registered corrosion engineer or a National Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion history of the area.//Underground storage tanks with listed corrosion resistant materials, nonmetallic glass fiber reinforced plastic coatings, composites, or equivalent systems shall be visually tested immediately prior to installation.

The protection system shall be inspected under the direction of a registered corrosion engineer or NACE corrosion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the the system designer, but no less than semi-annually.//Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

(2) The outer surface of underground storage tanks constructed of steel shall be protected from corrosion as follows, except that primary containment systems installed in a secondary containment system and not backfilled do not need cathodic protection:

(A) Field installed cathodic protection systems shall be designed and certified as adequate by a corrosion specialist. The cathodic protection systems shall be tested under the direction of a cathodic protection tester within six months of installation and at least every three years thereafter. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed in accordance with voluntary consensus standards. Impressed current

cathodic protection systems shall also be inspected to ensure that they are in proper working order not less than every 60 days by a cathodic protection tester.

(B) Underground storage tanks protected with glass fiber reinforced plastic coatings, composites, or equivalent non-metallic exterior coatings or coverings, including coating/sacrificial anode systems, shall be tested at the job site using an electric resistance holiday detector. All holidays detected shall be repaired and checked by a factory authorized repair service prior to tank installation. During and after tank installation, care shall be taken to prevent damage to the protective coating or clading. Preengineered corrosion protection systems with sacrificial anodes shall be checked once every three years in accordance with the manufacturers instructions.

(7)

(3) Before being installation, covered, enclosed, or placed in use, all the underground storage tank and piping shall be tested for tightness at the installation site in accordance with the manufacturer's written guidelines. If there are no guidelines, the primary and secondary containment shall be tested for tightness hydrostatically or with air pressure at not less than 3 pounds per square-inch (20.68 k Pa) and not more than 5 pounds per square-inch (34.48 k Pa). In lieu of the above, an equivalent differential pressure test, expressed in inches of mercury vacuum, in the interstitial space of the secondary containment is acceptable. Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system or

pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch (34.48 kPa) gauge at the highest point of the system.//This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least ten minutes.//In lieu of the above a test using acceptable engineering practices shall be used.//Some acceptable test methods for testing pipelines are provided in Appendix I of this subchapter.//Double-walled underground storage tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing. The pressure (or vacuum in the interstitial space) shall be maintained for a minimum of 30 minutes to determine if the tank is tight. If a tank fails the test, as evidenced by soap bubbles, or water droplets, installation shall be suspended until the tank is replaced, remanufactured or repaired by a factory authorized repair service and passes a retest.

(4) All other secondary containment systems shall pass a post-installation test which meets the approval of the local agency.

(5) After being installed but before the underground storage tank is placed in service it shall receive a tank integrity test to ensure that damage occurred during installation. The tank integrity test is not required if the tank is equipped with an interstitial monitor certified to meet the performance standards of a "tank integrity test", as defined in Section 2611, in accordance with Section 2643 (g) of these regulations.

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(B)

(6) All primary containers and doublewalled underground storage tanks shall be installed according to a code of practice developed in accordance with voluntary consensus standards and the manufacturer's written installation instructions. recommendations or, if no written recommendations exist, best engineering practice. The owner or operator shall certify that the underground storage tank is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(7) All underground storage tanks subject to flotation shall be anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

(8) When required by the local agency, all underground storage tanks shall be equipped with an overfill protection system which includes the following elements:

(A) A spill containment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment;// A level sensing device that continuously monitors and indicates the liquid level in the underground storage tank and either (B) or (C) of this subsection or both;

(B) An audible/visual alarm system triggered by a liquid level sensor to alert the operator of an impending overfill condition; or

(C) An automatic shutoff device that stops the flow of product being delivered to the underground storage tank when the underground storage tank is full;//

(9) The overflow protection system required in Subsection (B)(8) of this section shall be waived for underground storage tanks containing motor vehicle fuels in which a spill containment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment and/

(A) Both the fluid-level is visually-monitored and the filling operation is controlled by the facility operator during filling o the underground storage tank/

(B) The available capacity of the underground storage tank to be fill is determined immediately prior to filling to be at least 10% percent of the volume of the entire tank compartment to be delivered or the volume of the entire tank compartment to be delivered plus 200 gallons/ whichever is less/ as determined by underground storage tank gauging/ or

(C) The hazardous substance being delivered can be metered into the underground storage tank and the available underground storage ti capacity is determined immediately prior to filling/

(b) All underground piping, if in direct contact with backfill material, shall be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection must meet the requirements in Paragraph 2635(a)(2) of this section. Underground piping shall meet all of the following requirements:

(1) All underground primary piping in contact with hazardous substances under normal operating conditions shall be installed inside a secondary containment system which may be a secondary pipe, or a lined trench. All secondary containment systems shall be sloped so that all releases will flow to a collection sump located at the low point of the underground piping.

(2) Primary piping and secondary containment systems shall be installed in accordance with a code of practice developed in accordance with voluntary consensus standards. The owner or operator shall certify that the piping is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(3) If a lined trench system is used as part of a secondary containment system, it shall be designed and constructed according to a code of practice or engineering standard approved by a state licensed engineer. The following requirements shall also apply:

(A) All trench materials shall be compatible with the substance stored and certified by an independent testing organization for their compatibility or adequacy of the trench design, construction, and application.

(B) The trench shall be covered and shall be capable of supporting any expected vehicular traffic.

(4) All new primary piping and secondary containment systems shall be tested for tightness after the installation in accordance with the manufacturer's guidelines. As a minimum, the primary piping shall be tested for tightness hydrostatically at 150 percent of designed and operating pressure or pneumatically at 110 percent of design pressure. If the calculated test pressure is less than 40 psi, 40 psi shall be used as the test pressure. The pressure shall be maintained for a minimum of 30 minutes and all joints shall be soap tested. A failed test, as evidenced by presence of bubbles, shall require appropriate repairs and a retest. If there are no manufacturer's guidelines, secondary containment systems shall be tested using an applicable method specified in an industry code or engineering standard.

(5) Underground pressurized piping which meets all of the following requirements satisfies the annual tightness test requirement specified in Subsection 25291(f) of the Health and Safety Code:

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(A) The secondary containment system is equipped with a continuous monitoring system. The leak detection device can be located at the pump sump if the piping slopes back to this point.

(B) A continuous monitoring system is connected to an audible and visual alarm system and the pumping system.

(C) A continuous monitor shuts down the pump and activates the alarm system when a release is detected.

(D) The pumping system shuts down automatically if the continuous monitoring system fails or is disconnected. This requirement does not apply to emergency generator system if the site is manned.

(6) A secondary containment system is not required for vent piping or tank riser piping provided the primary containment system is equipped with an overfill prevention system meeting the requirements specified in Paragraphs (c)(2)(B)or(C) of this section. Vapor recovery piping is also exempt from the secondary containment requirement if designed not to carry product back to the underground storage tank.

(7) Secondary containment is not required for suction piping if such piping is designed and installed in accordance with the following requirements:

(A) The below-grade piping operates at less than atmospheric pressure (suction);

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) No valves or pumps are installed in the suction line below-grade;

(D) An inspection method is provided which readily demonstrates compliance with Paragraphs (A)-(C) immediately above.

] All underground storage tanks shall be equipped with a spill container and an overfill prevention system as follows:

(1) The spill container shall collect any hazardous substances spilled during tank filling operations to prevent the hazardous substance from entering the subsurface environment. The spill container shall meet the following requirements:

(A) The exterior wall must be protected from galvanic corrosion if made of metal.

(B) It must have at least a minimum capacity of five gallons (19 liters).

(C) It must have a spring-loaded drain valve which allows drainage of the collected spill into the primary container.

(2) The overfill prevention system shall not allow for manual override and shall meet one of the following requirements. It must either:

(A) Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or

(B) Restrict delivery of flow to the tank at least 30 minutes prior to tank overfill, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity, and provide audible alarm sounds at least five minutes prior to overfill; or

(C) Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent full.

(3) Owners and operators must use care to prevent releases due to spilling or overfilling. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The local agency may waive the requirement for overfill prevention equipment where the tank inlet exists in an observable area and the spill container is adequate to collect any overfill.

(d) Secondary containment systems including leak interception and detection systems installed pursuant to Section 2633 of this article shall comply with all of the following:

(1) The secondary containment system shall, at a minimum, encompass the area within the system of vertical planes surrounding the exterior of the primary containment unit system. If backfill is placed between the primary and secondary containment systems, then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment system over the vertical distance between the primary and secondary containment systems. The secondary containment system shall extend an additional distance beyond the vertical planes described above equal to the radius of lateral spread plus 1 foot.

(2) The secondary containment system must be capable of precluding the inflow of the highest ground water anticipated into the interstitial space during the life of the underground storage tank into the space between the primary and secondary containers.

(3) If the interstitial space between the primary and secondary containers is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary containment system.

(4) The secondary containment system and any with backfill material between the primary and secondary containers shall be designed and constructed to promote gravity drainage of a an unauthorized leak release of hazardous substances from any part of the primary containment system to the monitoring location(s).

(5) Two or more primary containment systems shall not utilize the same secondary containment system if the primary containment systems store materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of any part of a primary or secondary containment system.

(6) Drainage of liquid from within a secondary containment system shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged into the environment. The liquid shall be analyzed to determine the presence of any of the hazardous substance(s) stored in the primary containment systems prior to initial removal, and monthly thereafter, for any continuous discharge (removal) to determine the appropriate method for final disposal. The liquid shall be sampled and analyzed immediately upon any indication of an unauthorized release from the primary containment system.

(7) For primary containment systems installed completely beneath the ground surface, the original excavation for the secondary containment system shall have a water-tight cover which extends at least 1 foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to

drainways leading away from the excavation. Access openings shall be constructed as water-tight as practical. Double-walled underground storage tanks Primary containment systems with integral secondary containment and open vaults are exempt from the requirements of this paragraph.

(8) The actual location and orientation of the underground storage tanks and appurtenant piping systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.

(e) Owners or their agents shall certify (see Appendix VI) that the installation of underground storage tanks and piping meets all of the following conditions:

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

(2) The installer has been certified or licensed by the Contractors State License Board;

(3) The underground storage tank, any primary piping, and any secondary containment system, was installed according to applicable voluntary consensus standards and any manufacturer's written installation instructions.

(4) All work listed in the manufacturer's installation checklist has been completed; and

(5) The installation has been inspected and approved by the local agency, or, if required by the local agency, inspected and certified by a registered professional engineer who has education and experience with underground storage tank system installations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299

40 CFR 280.20, 280.40 thru 280.45

Article 4. Existing Underground Storage Tank Monitoring Standards

Requirements

2640. General Applicability of Article

(a) All owners of existing underground storage tanks subject to this subchapter shall implement a visual monitoring or alternative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code. A local agency shall not issue a permit unless the monitoring system is capable of: determining the containment ability of the underground storage tank and; detecting any active or future unauthorized release.///If the monitoring technique(s) selected is designed to detect the presence of the stored hazardous substance outside of the underground storage tank, then tests must be made to determine if the hazardous substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank.///The failure to implement an approved monitoring system shall be cause for the local agency to require//closure of the underground storage tank pursuant to Article 7 of this subchapter.

(b) The objectives of the monitoring program for existing underground storage tanks are to detect unauthorized releases before ground water is affected. Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses.

(c) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2642 of this article for all visible portions of the underground storage tank.///If the entire underground storage tank is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored, that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year shall be utilized during those portions of the year.///If visual monitoring cannot be implemented for the entire underground storage tank throughout the entire year, then one of the monitoring alternatives specified in Section 2641 of this article shall also be implemented.///The monitoring alternative shall be operative during those times when visual monitoring is not feasible or for those portions of the underground storage tank which are not susceptible to visual monitoring.

(d) All owners of existing underground storage tanks subject to this subchapter, who are not able to implement visual monitoring as specified in Section 2642 of this article, shall implement one of the monitoring alternatives specified in Section 2641 of this article.

(e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums.///Local agencies, as a condition of approval of a specific monitoring alternative, shall to comply with the objectives specified in Subsection (b)//of this section require additional or more frequent monitoring if necessary, and Subsection (d) of Section 2641 of this article.

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[f] Local agencies shall reduce the monitoring frequency for visual monitoring or a monitoring alternative listed in Section 2642 of this article situations where environmental conditions make it impracticable/ physically impossible/ or life threatening to complete the required monitoring/

(a) The requirements of this article apply to owners of nonexempt existing underground storage tanks.

(b) The requirements of this article apply during the following periods:

(1) Any operating period, including any period that the tank is empty as a result of withdrawal of all stored material prior to the planned input of additional hazardous substances;

(2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted; and

(3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to Section 2671(b), for a temporary closure period.

(c) This article shall not apply to underground storage tanks that are installed and monitored in accordance with Sections 2631 and 2632 or 2633 and 2634 of Article 3 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.40 - 280.42

2643. Monitoring Alternatives

[a] All owners of existing underground storage tanks subject to this subchapter who cannot implement visual monitoring for the entire underground storage tank during all periods of the year shall implement/ by the statutory deadline/ one of the monitoring alternatives specified in subsection [c] of this section/

[b] The local agency shall base its review of the proposed monitoring alternative on the specification contained in subsection [a] of this section and shall approve the monitoring alternative if it finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in subsection [b] of Section 2640 of this article///If the proposed monitoring alternative cannot be approved/ then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of another monitoring alternative/

[c] The optional monitoring alternatives are as follows/

[1] Underground Storage Tank Testing///This monitoring alternative shall/ at a minimum/ utilize the procedures specified in Section 2643 of this article and shall be performed monthly at a minimum/

(2) Vapor or Other Vadose Zone Monitoring and Ground Water Monitoring with Soil Sampling.

(A) This monitoring alternative shall, at a minimum, include vadose zone monitoring, ground water monitoring, and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.

(B) The vadose zone monitoring program shall be designed and installed pursuant to the procedures specified in Sections 2548 and 2548 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a minimum.

(C) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2547 and 2548 of this article and monitored semiannually, at a minimum. The minimum number of wells shall be as specified on Table 4.1 of this section for Alternative 2. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. The local agency shall require laboratory verification at periodic intervals if visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.

(D) The soil sampling and analysis shall be performed as specified in Sections 2545 and 2548 of this article. Samples shall be taken from all boring(s) and well(s) installed.

(3) Vadose Zone Monitoring, Soil Sampling, and Underground Storage Tank Testing.

(A) This monitoring alternative shall, at a minimum, include vadose zone monitoring and analysis of soil samples taken from the boring(s) made for vadose zone monitoring and tank testing. This alternative shall not be approved if first ground water, including intermittent, perched ground water, is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic, municipal, agricultural, or industrial supply) or is hydraulically connected to ground and surface waters which has actual or potential beneficial uses.

(B) The determination that first ground water is significantly deeper than 100 feet shall be by an onsite boring(s) constructed according to the specifications in subsection (D) of Section 2548 of this article or by evidence based on an evaluation pursuant to subsection 2548(D) of this article.

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(C) Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Sections 2646 and 2648 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily at a minimum. Other vadose zone monitoring shall be performed weekly at a minimum.

(D) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all borings installed.

(E) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article.

(4) Ground Water and Soil Testing

(A) This monitoring alternative shall at a minimum utilize ground water sampling and analysis of soil samples taken at the time of well installation. This alternative shall not be approved if any of the following conditions exist:

(i) First ground water, including intermittent perched ground water, is normally greater than 30 feet deep.

(ii) The ground water proposed for monitoring has actual or potential beneficial uses (domestic, municipal, industrial or agricultural supply) or is hydraulically connected to ground or surface water which has actual or potential beneficial uses, or

(iii) The ground water monitoring well can not be perforated within the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest perennial ground water level. The 10-foot requirement may be waived by the local agency if ground water is less than 10 feet deep.
If the local agency waives this requirement, the well must still be capable of being perforated above the highest anticipated ground water level.

(B) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and shall be monitored monthly at a minimum. The minimum number of monitoring wells shall be as specified in Table 4.1 of this article for Alternative 4. Analysis of samples collected shall be by visual observation or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. If visual observation or field

analysis is used, the local agency shall require periodic laboratory analysis if the visual observation or field analysis does not provide a degree of detection equal to that of laboratory analysis.

(D) The soils sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all wells installed.

(5) Inventory Reconciliation, Underground Storage Tank Testing, and Pipeline Leak Detectors.

(A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors. The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article. The owner or operator of an underground storage tank that experiences a inventory reconciliation in excess of allowable variation(s) shall implement the evaluation procedures specified in Subsection (5) of Section 2644 of this article within the times limits specified.

(i) The daily variation in inventory reconciliation shall be the difference between the calculated volume in storage and the actual volume in storage.

(ii) If the variation is based on the previous day's physically measured inventory, the daily variation shall not exceed the allowable variation described in Subsection (i) of this subsection.

(iii) If the variation is based on the previous day's calculated inventory, then the daily variation shall not exceed the allowable variation described in Subsection (i)(i) of this subsection. The calculated inventory on any given day shall be based on continuous calculations from the day on which the physical inventory was used. The period of continuous calculations shall be no greater than 1 month.

(iv) The allowable variation shall be the sum of the measurement error from Table 6.2 of this article and the throughput error calculated in accordance with Subsection (v) of this subsection.

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TANK SIZE (GALLONS)	ALLOWABLE MEASUREMENT ERROR (GALLONS)
LESS THAN 1,000	25
1,000 TO LESS THAN 2,000	50
2,000 TO LESS THAN 12,000	75
12,000 OR GREATER	100

(A) THE THROUGHPUT ERROR SHALL BE WITHIN PERCENT (0.005) OF THE MEASURED THROUGHPUT DURING THE PERIOD UNDER CONSIDERATION AS DESCRIBED IN EITHER SUBSECTION (1) OR SUBSECTION (2) OF THIS SUBSECTION.

(C) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article.

(D) All pressurized pipelines shall be monitored using an automatic one line pressure loss detector and flow restriction device. The detector shall be connected to an audible/visual alarm system unless it provides for at least a 50-percent reduction from the normal flow rate. Suction pipelines shall be monitored daily for indications of possible leaks.

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(B) Inventory Reconciliation, Underground Storage Tank Testing, Pipeline Leak Detectors, Vadose Zone, or Ground Water Monitoring and Soil Testing.

(A) This monitoring alternative shall at a minimum utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors. In addition, either vadose zone or ground water monitoring shall be included and analysis of soil samples taken at the time of boring or well installation. The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article. The owner or operator of an underground storage tank that experiences a variation in excess of any of the following shall implement the evaluation procedures specified in subsection (1) of Section 2644 of this article within the times specified.

(1) Daily variation, plus or minus 100 gallons

(2) 7-day variation, plus or minus 5 percent of throughput or 100 gallons whichever is greater but in no case, greater than 350 gallons

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(iii) more than 30-day variation///plus or minus 0.5 percent of throughput or 100 gallons whichever is less

(E) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

(D) All pressurized pipelines and suction pipelines shall be monitored as provided for in Subsection (B)(D) of this subsection/

(E) Vadose zone monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2646 and 2648 of this article///The frequency of monitoring shall be no less frequent than semi-annually/

(F) Ground water monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article///The minimum number of monitoring wells shall be as specified in Alternative 6 in Table 4.1 of this article///Analysis of samples collected can be by visual observation/ or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated///Ground water samples shall be collected and analyzed at least semi-annually///If samples are analyzed by visual observation or field analysis/ the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods/

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(G) The soil sampling and analysis shall be performed as specified in Sections 2648 and 2648 of this article/ Samples shall be taken from all borings and wells installed/

(7) Underground Storage Tank Gauging and Testing/

(A) This monitoring alternative shall/ at a minimum/ utilize gauging and testing of the underground storage tank///This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the/underground storage tank can be measured to an accuracy of ± 8/ gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation/

(B) The underground storage tank gauging shall be performed according to the following specifications/

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals/

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(iii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days///No input or withdrawals shall occur during these periods///The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person.

(iii) Underground storage tank testing shall be performed early at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred///The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

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(B) Interim Monitoring

(i) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory reconciliation or tank gauging///This alternative shall be available only to any of the following categories of owners for a period of up to 3 years after the effective date of these regulations:

(I) Small businesses as defined in Subsection IIJ82(e) of the Government Code and nonprofit organizations which would meet the criteria for a small business, provided the owner demonstrates to the local agency that sufficient funds will be available to close the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period;

(II) Any underground storage tank owner who provides a written, legally binding, commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 of this subchapter within

3 years from the statutory compliance date or replaced with a new underground storage tank which complies with the provisions of Article 3 of this subchapter.// The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit or

(iii) Any governmental agency that demonstrates to the local agency shall, due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection. The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be performed according to the procedures specified in Section 2643 of this article and shall be performed yearly, at a minimum.

(C) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article.// The owner or operator of an underground storage tank that experiences a variation in excess of the levels specified in subsection (C)(6)(B) of this section shall implement the evaluation procedures specified in subsection (F) of Section 2634 of this article within the time specified.

(D) Underground storage tank gauging shall be performed according to the specifications of subsection (C)(7)(B) of this section. Variations in excess of 1 percent of the underground storage tank volume or 50 gallons, whichever is less, shall be cause for further evaluation.

(D) The local agencies shall evaluate each monitoring alternative proposed to determine if it achieves the objectives specified in subsection (B) of this article according to the following:

(1) Whenever possible, a primary method of monitoring other than ground water monitoring shall be performed monthly at a minimum.

(2) Where the underground storage tank is in an area where precipitation or surface runoff provides direct recharge of the ground water and the ground water being recharged has an actual or potential use (domestic, municipal, agricultural, or industrial supply), a monitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring.

(3) In addition, ground water monitoring may be required by the local agency in the areas described in subsection (2) above.// The local agency shall review and approve the number and location of the monitoring wells. More than 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all underground storage tanks or facilities being monitored and is within 1,000 feet of all underground storage tanks being monitored.

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2641. Monitoring Program Requirements

(a) Owners of existing underground storage tanks subject to this article shall implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to Section 25281.5 of the Health and Safety Code, or is exempt from monitoring under Paragraph (b) of this section.

(b) Underground piping shall be exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in Section 2635(b)(7) of this chapter.

(c) The monitoring program for all underground piping that operates at less than atmospheric pressure, unless it is exempt from monitoring under Paragraph (b) of this section, shall comply with Section 2643(e) and shall include daily monitoring as described in Appendix II.

(d) The monitoring program shall include visual monitoring in accordance with Section 2642 of this article for all portions of the underground storage tank system which is not exempt under this section. A portion of the underground storage tank shall be exempt from visual monitoring if the owner demonstrates to the satisfaction of the local agency that one or more of the following conditions apply to that portion:

(1) A portion of the underground storage tank is not accessible for direct viewing.

(2) Visual inspection of a portion of the underground storage tank would be hazardous or would require the use of extraordinary personal protection equipment other than such normal protective equipment such as steel-toed shoes, hard hat, or ear protection; or

(3) The underground storage tank is located at a facility which is not staffed on a daily basis.

(e) The monitoring program shall include non-visual monitoring which must be implemented for all portions of the underground storage tank which are exempt under Paragraph (d) of this section and for the underground storage tank during periods when visual monitoring required under Paragraph (d) of this section is not conducted. This non-visual monitoring shall include a quantitative release detection method as specified in Section 2643 of this article or a qualitative release detection method as specified in Section 2644 of this article or a combination of these methods as approved by the local agency.

(f) At a minimum, any non-visual monitoring shall include a quantitative release detection method for underground pressurized piping that complies with the performance requirements specified in Subsection 2643(d)(1).

(g) The monitoring program must be approved by the local agency and as a minimum shall be in compliance with the requirements of this article and as specified in the underground storage tank operating permit. The local agency may require additional monitoring methods or increased monitoring frequencies as necessary to satisfy the objective in Subsection 2641(a) of this article. In deciding whether or not to approve a proposed monitoring program, or to require additional methods or frequencies of monitoring, the local agency shall consider the following factors:

(1) The volume and physical and chemical characteristics of the hazardous substance(s) stored in the underground storage tank;

(2) The compatibility of the stored hazardous substance(s) and any chemical reaction product(s) with the function of monitoring equipment or devices;

(3) The reliability and consistency of the proposed monitoring equipment and systems under site-specific conditions;

(4) The depth and quantity of ground water and the direction of ground water flow;

(5) The patterns of precipitation in the region and any ground water recharge which occurs as a result of precipitation;

(6) The existing quality of ground water in the area, including other sources of contamination and their cumulative impacts;

(7) The current and potential future uses (e.g., domestic, municipal, agricultural, industrial supply) of ground water in the area;

(8) The proximity and withdrawal rates of ground water users in the area;

(9) The type, homogenity, and range of moisture content of the backfill material and native soils and their probable effects on contaminant migration and detection;

(10) The presence of contamination in the excavation zone or surrounding soils;

(11) The proximity of the underground storage tank to surface waters; and

(12) Additional hydrogeologic characteristics of the zone surrounding the underground storage tank.

(h) Owners shall repair or close in accordance with the requirements of Articles 6, or 7, respectively, any underground storage tank for which an approved monitoring program is not promptly obtained.

(i) Equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calendar year) for operability or running condition. Written records shall be maintained as required in Section 2712 of Article 10 of this chapter.

(j) When an unauthorized release is indicated during the installation of a release detection system, the owner or operator shall cease the installation process and comply with the release reporting requirements of Article 5 and shall replace, repair or close the underground storage tank in accordance with Articles 3, 6 or 7 of this chapter.

(k) When implementation of the monitoring program indicates that an unauthorized release may have occurred, the owner shall comply with the release reporting requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25283, 25291, 25292

40 CFR 280.40, 280.41

2642. Visual Monitoring

[a] Visual monitoring shall be utilized as the principal leak detection monitoring method where feasible for all visible exterior surfaces of an underground storage tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable.// If visual monitoring is required, the provisions of Subsections (c) and (d) of this section shall be followed.

[b] The owner is exempt from visual monitoring for that portion of the underground storage tank to which the following conditions apply:

[1] Any portion of an underground storage tank that is in contact with the ground, a floor, or pad such that it cannot be seen.// An underground storage tank in a sandbox should not typically qualify for an exemption.

[2] Visual inspection of the underground storage tank would put a person in a physically unsafe environment.

[3] Visual inspection of the underground storage tank would require the use of extraordinary personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.).

[4] The underground storage tank is located at a facility which is not staffed on a daily basis.

[c]

(a) A An owner who is required, pursuant to Section 2641 of this article, to implement visual monitoring program shall incorporate comply with all of the following requirements:

(1) Provisions for routine direct visual/inspection of All accessible visible exterior surfaces of an underground storage tank, and the including any visible horizontal surface directly beneath the underground storage tank, shall be inspected at least daily monitored by direct viewing. The inspection schedule shall be established such that some of the inspections are conducted when the liquid in the underground storage tank is at its highest level;

(2) A written statement of the routine monitoring procedure shall be prepared and be available at the facility which and the record shall includes the frequency of visual inspections, the location(s) from which observations will be made, the name(s) or and title(s) of the person(s) responsible for performing the observations and the reporting format;

[3] Visual inspections shall be performed/daily at a minimum/ and shall be more frequent if necessary/ The inspection schedule shall be established such that some of the inspections occur when the liquid/the underground storage tank is at its highest level///The inspection frequency shall be determined such that any unauthorized release will remain observable on the exterior of or the horizontal surface immediately beneath the underground storage tank between visual//inspections/ The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored/

[4]

(3) Written records shall be maintained according to Section 2712 of Article 10 of this chapter and shall include recordation of the observations made and the liquid level in the underground storage tank at the time of the each inspection. These records shall also include a description of any sampling, analyses, and testing procedures conducted to satisfy Paragraph (b) of this section, including any minimum levels of detection used.

d]

b) The observation of The owner or operator shall undertake all of the following activities if any liquid around or on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually is observed: monitored shall cause the owner or operator to implement all or a portion of the following actions///The applicable/

(1) Any and all action necessary to promptly actions and their timing shall be based on the site-specific situation/ shall be intended to determine if the observed liquid constitutes an unauthorized release and shall be included in the permit/ shall be taken;

[2] Laboratory or field analysis of the observed liquid which shall include minimum levels of detection/

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(2) Observed liquid shall be analyzed in the field or laboratory to determine if an unauthorized release has occurred; and

[2]

(3) Testing of The underground storage tank shall be tested utilizing the procedures described in Section 2643/ a quantitative release detection method which complies with one or more of the performance standards set forth in Section 2643 of this article.

[3] Removing all hazardous substances from the underground storage tank/

(c) If the steps in Paragraph 2642(b) indicate that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter, and shall replace, repair or close the underground storage tank pursuant to Article 3, 6, or 7 of this chapter.

[c]

(d) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a non-visual monitoring alternative as specified in Section 2641 this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25293

2643/ Underground Storage Tank Testing

[a] All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies underground storage tank testing shall implement a testing program pursuant to Subsections 2643 [b] through [g] of this section/

[b] Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance at a rate of 0/05 gallons per hour///These methods are limited to those tests that make adjustments for all of the following/ if applicable/

[1] The presence of vapor pockets/

[2] Thermal expansion or contraction of the hazardous substance/ which include any density considerations/

[3] Temperature stratification in the underground storage tank/

[4] Evaporation/

[5] Pressure variations in the underground storage tank/ and

[6] Deflection of the underground storage tank ends/

(c) Testing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test required in subsection (b) of this section. This hydrostatic pressure test shall be conducted at a pressure of 50 psi (2800 mm Hg) or greater. The test shall be performed for at least 5 minutes. A pressure drop of more than 5 psi (260 mm Hg) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 psi (260 mm Hg) but greater than zero is inconclusive, and a pursuant to subsection (b) of this section shall be performed.

(d) The tests required in this section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test described in subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified and is capable of measuring leaks of 0.05 gallons per hour. Additionally, 1 year after the development of a listing or certification procedure by a nationally recognized independent testing organization which evaluates the accuracy of the test for the type of test described in subsection (b) of this section, only listed or certified tests shall be accepted.

(e) Within 30 days of completion of either of the leak detection test described in subsection (b) or (c) of this section, the underground storage tank owner shall provide the local agency with a report which includes the following information, if applicable:

(1) The procedures used (including any deviations from those recommended by the developer of the underground storage tank test procedure) for the leak detection method;

(2) The test results used in determining the volumetric rate of product loss;

(3) The volumetric rate of product loss; and

(4) The information shall be presented in written and/or tabular form as appropriate and shall be at a level of detail appropriate for the test procedure used.

(f) Underground storage tanks which are found to lose product shall be repaired or replaced as specified in Articles 6 and 7 of this subchapter, respectively.

(g) The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test.

Section 2643. Non-Visual Monitoring/Quantitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a quantitative release detection method is used. Examples of release detection method(s) that may be used to meet the performance standards of this section are presented in Appendix IV.

(b) At a minimum, any quantitative release detection method(s) used as part of non-visual monitoring shall comply with the performance standards specified in Paragraph (c) of this section for the monitoring of underground storage tanks Paragraph (d) of this section for the monitoring of pressurized piping, and Paragraph (e) of this section for the monitoring of suction piping.

(c) Any quantitative release detection method(s) used for the monitoring of underground storage tanks shall comply with at least one of the following performance standards:

(1) Monitoring shall be conducted at least monthly (once per calendar month after tank filling) and be capable of detecting a release of 0.2 gallon per hour defined at any operating product level in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(2) Monitoring shall be conducted which complies with both of the following:

(A) Monitoring shall be conducted at least annually (once per calendar year after tank filling) and be capable of detecting a release of 0.1 gallon per hour defined at or above the maximum product level determined by the overfill protection system in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; and

(B) Monitoring shall be conducted at least monthly and be capable of detecting a minimum release of 1.0 gallon per hour with a 95 percent probability of detection and not more than a 5 percent probability of false alarm defined at any normal operating product level in the underground storage tank.

(d) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under pressure shall comply with the performance standards specified below in Paragraph 1, and either Paragraph 2 or Paragraph 3 as follows:

(1) Monitoring shall be conducted at least hourly at any pressure, provided that the method is capable of detecting a release equivalent to 3.0 gallons per hour defined at 10 pounds per square inch pressure within one hour of its occurrence with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. The leak detection method shall have the capability of alerting the operator of the presence of an unauthorized release by restricting or shutting off the flow of product through the piping or by triggering a visual or audible alarm. (After December 22, 1998 the leak detection method shall shut off the pump when a release occurs.) If pipeline use is intermittent, leak detection monitoring is required only at the beginning or end of the period during which the pipeline is under pressure, but in any event there shall not be more than one hour between the time the pipeline is put under pressure and detection of an unauthorized release; and

(2) Monitoring shall be conducted at least monthly at any pressure provided that the method is capable of detecting a minimum release equivalent to 0.2 gallon per hour defined at normal operating pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(3) Monitoring shall be conducted at least annually (once per calendar year) at a pressure designated by the equipment manufacturer provided that the method is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at 150 percent (one and one half times) the normal operating pressure of the product piping system at the test pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm.

(e) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under less than atmospheric pressure shall include monitoring conducted at least every three years which is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at a minimum of 40 psi with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. Daily monitoring shall be performed as described in Appendix II.

(f Inventory reconciliation and manual tank gauging do not require certification of compliance with the performance standards of Paragraph (b) of this section. Manual tank gauging and inventory reconciliation release detection methods shall comply with Sections 2645 and 2646 of this article, respectively.

(g) Each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, shall have a certification stating that it complies with the performance standard(s) specified in this section. This certification shall be provided as a result of one of the following evaluation procedures:

(1) An independent third party testing laboratory shall evaluate and approve the method using the appropriate "EPA Standard Test Procedure" for leak detection equipment presented in Appendix V; or

(2) An independent third party testing laboratory shall evaluate and approve the method using a voluntary consensus standard that is intended for the method being evaluated; or

(3) An independent third party testing laboratory shall evaluate and approve the method using a procedure deemed equivalent to an EPA procedure. Any resultant certification shall include a statement by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as used in the EPA standard test procedure. This certification shall include a statement that:

(A) The method was tested under various conditions that simulate interferences likely to be encountered in actual field conditions (no fewer nor less rigorous than the environmental conditions used in the corresponding EPA test procedure);

(B) Each condition under which the method was tested was varied over a range expected to be encountered in 75 percent of the normal test cases;

(C) All portions of the equipment or method evaluated received the same evaluation;

(D) The amount of data collected and the statistical analysis are at least as extensive and rigorous as the data collected and statistical analysis used in the corresponding EPA test procedure and are sufficient to draw reasonable conclusions about the equipment or method being evaluated;

(E) The full-sized version of the leak detection equipment was physically tested; and

(F) The experimental conditions under which the evaluation was performed and the conditions under which the method was recommended for use have been fully disclosed and that the evaluation was not based solely on theory or calculation.

(4) The evaluation results must contain the same information and shall be reported following the same general format as the EPA standard results sheet as any corresponding EPA test procedure.

(h) The underground storage tank owner shall notify the local agency 48 hours prior to conducting any tank integrity test. The 48-hour notification requirement may be waived by the local agency. Within 30 days of completion of an underground storage tank integrity test, the tank owner shall provide the local agency with a report. The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank has a release shall be reported by the owner or operator to the local agency within 30 days of completion of the test. The report shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the release detection method used.

(i) If an automatic tank gauge is used as a method of release detection, the automatic tank gauge shall generate a hard copy of all data reported, including time and date; tank identification; fuel depth; water depth; temperature; liquid volume; the time automatic tank gauging is performed; and hourly temperature corrected volume data during the automatic tank test.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.40 - 280.45

2644. Non-Visual Monitoring/Qualitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a qualitative release detection method is used. Each qualitative release detection method shall have an independent third party evaluation to certify accuracy and response time of the detection method in accordance with procedures presented in Appendix V. Examples of qualitative release detection method(s) that may be used are presented in Appendix IV.

(b) Vadose zone monitoring release detection methods shall be conducted in accordance with the requirements of Section 2647.

(c) Ground water monitoring release detection shall be conducted in accordance with the requirements of Section 2648.

(d) Any qualitative release detection method which includes the installation of monitoring wells or the drilling of other borings shall include installation, construction, and sampling and analysis procedures according to the requirements of Section 2649 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2645. Soil Testing

(a) All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires borings for vadose zone or ground water monitoring shall implement soil testing pursuant to Subsections (b) through (d) of this section.

(b) Undisturbed (intact) soil samples shall be recovered from all borings used for the installation.//This requirement may be waived by the local agency when borings cannot be drilled and sampled using accepted techniques that do not introduce liquids into the boring.

(c) Soil samples shall be taken at intervals of 5 feet or less beginning at the ground surface, but sampling shall not be required below the water table nor in unweathered bedrock which has little or no primary permeability.

(d) A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval.

(e) Borings shall be drilled and sampled by techniques that do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using accepted techniques, the requirement for soil sampling may be waived by the local agency. However, the vadose zone or ground water monitoring system shall still be installed. Furthermore, once below the water table, it is not required that the wells be advanced using the same method that was used in the vadose zone.

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(I) Borings shall be described in accordance with the provisions of Subsections 2698 (I) and (J) of this Article.

(G) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide replicate analyses, if specified.

(H) If more than one boring is utilized, composite samples consisting of soil from the same depth from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis and any pollutant in a sample will not be diluted below detection limits by mixing with uncontaminated samples or samples that contain low concentrations of the pollutant.

(I) Soil samples shall be acquired, prepared, preserved, stored, transported and analyzed by methods that are appropriate for the objectives of the investigation and that will safeguard sample integrity. Some acceptable methods may be found in the references listed in Appendix I, Table C of this subchapter. Other similar or superior methods may be approved by the local agency.

(J) Samples shall be analyzed by field or laboratory methods that provide quantitative or qualitative results. If qualitative methods are used, their lower detection limits shall be verified by the developer, distributor or manufacturer of the testing method or device, or by actual field tests in the case of sensory-type tests. The analyses shall be by methods that are

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appropriate for the objectives of the investigation and that will safeguard sample integrity. Some acceptable methods may be found in the references listed in Appendix I, Table C of this subchapter. Other similar or superior methods may be approved by the local agency. The analytical method approved for soil testing shall have a detection limit that is lower than the concentration that would interfere with any of the longterm monitoring methods that could be used at the site.

(K) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then analysis shall be for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents.

(L) Samples may be analyzed in any order of depth. If levels of hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soils analysis is not necessary pursuant to this subsection and the hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank/<u>system</u> is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the

~~underground storage tank can be detected despite the presence of the hazardous substance already in the environment.~~

~~(v) If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 6 of this subchapter and shall repair or close the underground storage tank pursuant to Article 6 or 7 of this subchapter.~~

~~(vi) If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be installed pursuant to Section~~ 2643 2641 of this article.

2645. Manual Tank Gauging and Testing

(a) Manual tank gauging shall only be used as part of non-visual monitoring for existing underground storage tanks which have a total system capacity of 2,000 gallons or less and which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year.

(b) Manual tank gauging shall not be used on tanks with secondary containment and shall not be used under this article after December 22, 1998 for underground storage tanks with a capacity of 1,001 gallons or greater.

(c) Owners of existing underground storage tanks who utilize manual tank gauging as part of non-visual monitoring shall, at a minimum, conduct weekly gauging according to the following specifications:

(1) Tank liquid level measurements shall be taken at the beginning and ending of a gauging period which shall be at least 36 continuous hours during which no liquid is added to or removed from the tank. The underground storage tank shall be secured to prevent inputs or withdrawals during the gauging period. No inputs shall occur within the 12-hour period preceeding the gauging period. The liquid level measurements shall be based on an average of two consecutive stick readings at both the beginning and ending of the period; and

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

(3) If the variation between beginning and ending measurements exceeds the weekly or monthly standards set forth in Table 4.1, a second 36 hour test shall be commenced immediately and all measurements and calculations checked for possible errors. If the second test confirms a variation which exceeds the weekly or monthly standards in Table 4.1, then an unauthorized release shall be suspected and a tank integrity test shall *be conducted within 72 hours. The local agency may extend this 72-hour* period up to 30 days, if all the contents of the underground tank are safely and properly removed within the 72-hour period.

(d) If the results of a tank integrity test conducted under the requirements of Paragraph (c)(3) of this section confirm an unauthorized release, the owner shall comply with the requirements of Article 5 of this chapter and replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Table 4.1

MANUAL TANK GAUGING MEASUREMENT STANDARDS

Tank Size (Gallons)	Weekly Standard (One Test) (Gallons)	Monthly Standard (Average of Four Tests) (Gallons)
550 or Less	10	5
551 to 1,000	13	7
1,001 to 2,000	26	13

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292, 25293

40 CFR 280.43

2646.1 Vadose Zone Monitoring

(a) All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires vapor or another form of vadose zone monitoring shall implement the vadose zone detection monitoring system pursuant to subsections (b) through (h) of this section.

(b) Vadose zone monitoring shall consist of vapor monitoring, soil-pore liquid monitoring, or other forms of vadose zone monitoring. Combinations of these methods may be used.

(c) Wells for vapor monitoring shall be fully perforated except for that portion adjacent to a surface seal and that portion of the bottom of a well where a plugged, blank segment of casing is used as a free liquid trap.

(d) The number, location, and depths of vadose zone monitoring points shall be selected to at to give the earliest possible warning of any unauthorized release from the underground storage tank.

(e) Subsurface vadose zone monitoring systems shall, if possible, be located within the backfill surrounding the underground storage tank.

(f) Vapor monitoring for underground storage tanks shall be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection.

(1) Before any method of vapor monitoring is approved for a specific site, it shall be demonstrated by an actual on-site demonstration, using an appropriate tracer substance, that vapor would actually be detected by the installed system. This requirement may be waived by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground storage tanks in equal or less favorable situations. The following factors shall be considered in comparing the demonstration to the actual on-site conditions:

(A) Backfill materials and grain size distribution;

(B) Type and homogeneity of native soils;

(C) Range of moisture contents of the backfill and native soils that will be encountered, and their effect on vapor migration and detection;

(2) The location and depth at which each sensor is placed relative to the underground storage tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(3) Vapor monitoring wells placed in the backfill shall be constructed so that any unauthorized release that may pose at the horizontal interface between the backfill and natural soils can be detected in the vapor well;

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[g] Soil-vapor liquid monitoring and other forms of vadose zone monitoring may b approved if the discharger can clearly show that:

[1] The stored substance is susceptible to detection by the proposed technique;

[2] The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable;

[3] The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system;

[4] The proposed technique will be effective in providing early detection underground storage tank leakage;

[h] Borings shall be described in accordance with the provisions of the Subsections 2648[f] and [g] of this article;

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2646. Inventory Reconciliation

(a) Inventory reconciliation shall only be used as part of non-visual monitorin for existing underground storage tanks which contain motor vehicle fuels.

(b) After January 1, 1993, inventory reconciliation, and any other leak detecti method that utilizes manual stick readings, shall not be used as part of no visual monitoring for existing underground storage tanks containing hazardous substance including motor vehicle fuel, where the existing ground water level or the highest anticipated ground water level is less than 20 f below the bottom of the tank. These ground water levels shall be determine according to the requirements of Section 2649(c) of this article.

(c) Inventory reconciliation that utilizes manual stick readings shall not be u after December 22, 1998.

[d]

(d) All/Owners or operators of existing underground storage tanks implementing monitoring alternative in Section 2641 of this article which specifies/who utilize inventory reconciliation as part of non-visual monitoring sh com with implement an inventory reconciliation program as described in Subsecti [b] through [f] the requirements of this section. This requirement may be transferred to the operator pursuant to the appropriate provisions of Chapt 6.7 of Division 20 of the Health and Safety Code;

[b]

(e) Each All underground storage tanks shall be individually monitored utilizing an daily inventory reconciliation system that takes into account:

(1) Separate daily underground storage tank quantity measurements for both the stored hazardous substance and any water layer; and

(2) Daily meter readings for underground storage tank input and withdrawals; and

(3) Checking of product inputs indicated by delivery receipt by measurement of the tank inventory volume before and after delivery. Underground storage tanks that are connected by a manifold may be monitored as a unit instead of individual///Underground storage tank require time for the level to stabilize before a measurement is taken.

(f) Meters used for determining inputs and withdrawals meters shall comply with California Administrative Code of Regulations, Title 4, Chapter 9, Subchapter 1, "Tolerances and specifications for commercial weighing and measuring devices". Meters shall be inspected by the County Department of Weights and Measures or a device repairman as defined in the California Business and Professions Code, Division 5, Chapter 5.5.

[c]

(g) For the purpose of this section, "daily" shall be defined as means at least 5 days per week. This minimum The number of days involved may be reduced during weeks that a public Holiday occurs on Monday through Friday by the number of public holidays that occur during any such week. Local agencies may reduce

the frequency of monitoring to no less than once every 3 days at facilities that are not staffed on a regular basis, provided that the monitoring is performed on every day the facility is staffed or that when inputs or withdrawals are made from the underground storage tank.

[d]

(h) Underground storage tank quantity measurements shall be based on liquid level detection measurements which are:

(1) Performed during periods when no additions or withdrawals are being made to the underground storage tank;

(2) Performed by the underground storage tank owner, operator, or other designated personnel persons who have had appropriate training;

(3) Based on the average of two readings if stick or tape measurements are used;

(4) Determined by equipment capable of measuring the level of the product over the full range of the tank's height to the nearest one-eighth of an inch;

[e]

(5) Determined by equipment capable of detecting a measuring, to the nearest one-eighth of an inch, water layer if present in the bottom of the underground storage tank. If the underground storage tank is not level, and the measurements are taken manually then the measurement should occur at the lowest end of the underground storage tank;

[5]

(6) Measured at the center of the longitudinal axis of the underground storage tank if access is available or measured at the lowest end of the underground storage tank, with a calibration measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and

[6]

(7) Converted to volume measurements based on a calibration chart for the underground storage tank. This chart shall, [if possible] where feasible, take into account the actual tilt of the underground storage tank as determined initially as described in Subsection (5) above.

(j) The daily variation in inventory reconciliation shall be the difference between physically measured inventory in storage and the calculated inventory in storage. The physically measured inventory shall be determined at approximately the same time each day by taking liquid level measurement and converting it to gallons using the calibration chart. The calculated inventory shall be determined at approximately the same time of day for each business day by adding the inputs and subtracting the withdrawals from the physically measured inventory determined the day before. These variations shall be summed for a period of one month. Monthly variations exceeding a variation of 1.0 percent of the monthly tank delivery plus 130 gallons must be investigated in accordance with this section.

[e]

(j) The owner or operator shall, on a [quarterly] an annual basis, submit a statement to the local agency[, under penalty of perjury,] that [either] the which states that all inventory reconciliation data [is] are within allowable variations or which includes a listing of the [dates] period of times and the corresponding variations [that] which exceed the allowable variations. Said statement shall be executed under penalty of perjury.

[f]

(k) If the monthly inventory reconciliation, conducted under Paragraph (i) of this section, exceeds the allowable variation, [indicates a loss of the hazardous substance greater than that specified] the owner or operator as appropriate or [permittee] shall: [implement the following: If the inventory reconciliation indicates a gain of hazardous substances greater than that specified, the operator or permittee shall implement Subsections (1),(2),(3), and (5) of this section. The steps may be implemented sequentially or concurrently. However, they must be completed within the specified time periods. Reporting as required in Article 5 of this Subchapter shall be followed.]

[If completion of the steps described in Subsections (2), (3), or (5) of this subsection indicates inventory reconciliation error that, when corrected, cause the levels specified, not to be exceeded, then the remainder of the steps need not be completed. If completion of the steps described in Subsections (4) or (6) through (8) of this subsection reveal the source of the loss, then the remainder of the steps need not be completed.]

The transfer of hazardous substances into and out of the underground storage tank may continue during implementation of the steps provided that the steps are completed within the specified periods and any loss or gain did not exceed two times the specified levels///Daily reconciliation shall continue during implementation of the steps/

(1) Notify the local agency of a suspected unauthorized release within 24 hours of completing any inventory reconciliation which exceeds the allowable variation;

(I) The operator shall notify the owner verbally or in writing of the fact that inventory reconciliation indicates a loss of hazardous substances or gain of water within 24 hours of the completion of the daily reconciliation which indicates the loss or gain/

(2) Within 24 hours of discovering a variation which exceeds the allowable variation, the operator shall review the inventory records for the preceding 30 days and within 2 hours to determine if a calculation error exists which would that caused the gain or loss apparent excessive variation. to be less than that specified/

(3) The operator shall have performed/ by a qualified person/ a//complete review of all inventory records/from the last time a zero loss or gain condition existed/ This shall include a new inventory reconciliation which was/taken/at least/8 hours after the/inventory reconciliation which triggered this evaluation/ This shall be completed within 24 hours of the conclusion of/subsection (1)(2) of this section/

(4) The readily accessible physical facilities shall be carefully inspected for leakage///This shall be completed by trained personnel within 24 hours of completion of/subsection (1)(3) of this section/

(3) Within 24 hours of discovering a variation which exceeds the allowable variation, have all readily accesible facilities carefully inspected for leakage by appropriately trained persons;

(5)

(4) Have all dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completing of the procedure required in subsection (1)(4)Paragraph (4) immediately above of this section/

[6] All piping shall be tested within 24 hours of completion of Subsection [f][5] of this section.//The piping shall be isolated and hydrostatically pressure tested at/50 psi (2600 mm Hg) or greater.// If the pressure drops more than 5 psi (260 mm Hg) per minute/ it indicates the probability of a leak in the line.//Repeat the test at least once to ensure against compression of entrained air.//Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling.//This step may be completed after/the step described in Subsection[f][7] of this section if excavation is necessary to perform the tests and if/the step described in/Subsection [f][7] of this section is completed within 48 hours of the completion of Subsection [f][5] of this section.//If this occurs, then this subsection shall be completed within 24 hours of the completion of Subsection [f][7] of this section/

[7] The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of Subsection [f][6] of this section/

(5) Continue to conduct inventory reconciliation according to the requirements of this section. If a second 30-day period of data confirms the initial results, the owner or operator shall comply with the requirements of Article 5 of this chapter; and

[8]

(6) Conduct such additional tests or investigations as may be required by the local agency.

(l) Whenever any of the steps in Paragraph (k) of this section are performed, the results shall be documented in the monitoring record required under Section 2712 of Article 10 of this chapter. If completion of any one of these steps indicates an inventory reconciliation error that, when corrected, indicates that allowable variations have not been exceeded, then the remainder of the steps need not be completed. If completion of any of these steps indicates that the apparent excessive variation is not due to a release or tank failure, then the remainder of the steps need not be completed.

(m) The transfer of hazardous substances into and out of the underground storage tank may continue while the steps indicated in Paragraph (k) are being implemented provided the steps indicated are completed within the specified periods. Daily inventory readings and monthly reconciliation shall continue while the steps are being implemented.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292

40 CFR 280.43

2647/ Ground Water Monitoring

(a) All owners of existing underground storage tanks/ implementing one of the monitoring alternatives in Section 2641 of this article which requires ground water monitoring shall implement a ground water monitoring system pursuant to Subsections (b) through (j) of this section/

(b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster/

(c) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the underground storage tank bottom///However/ wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick///In these situations/ the well shall be terminated 1 to 2 feet into this clay layer/

(d) Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point 1 foot above the bottom of the casing to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface/ whichever is the lowest point above the highest anticipated ground water level/

(e) Ground water monitoring wells shall be constructed as filter-packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well/

(f) All well casings shall have a bottom cap or plug/

(g) Filter packs shall extend at least 2 feet above the top of the perforated zone except where the ground surface is less than 10 feet above the highest ground water level/ in which case this requirement may be waived by the local agency provided the filter pack extends to the top of the perforated zone/

(h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the inside diameter of the casing/

(i) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack/

(j) Borings shall be described in accordance with the provisions of Sections 2648 (i) and (k) of this article/

Authority: HSC 25299.3
Reference: HSC 25292

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2647. Vadose Zone Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize vadose zone monitoring as part of non-visual monitoring shall comply with the requirements of this section. Vapor monitoring, soil-pore liquid monitoring, or a combination of these or other vadose zone monitoring methods may be used.

(b) Vadose zone monitoring shall not be used as the sole release detection method of non-visual monitoring for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than ten feet below the bottom of the tank. Ground water levels shall be determined according to the requirements of Section 2649(c) of this article.

(c) Vadose zone vapor monitoring shall be conducted either daily or continuously. Other vadose zone monitoring shall be conducted at least weekly. At a minimum, all manual sampling shall comply with the requirements of Section 2649(g) of this article.

(d) The number, location, and depths of vadose zone monitoring points shall be selected to achieve the objective specified in Section 2641(a) of this article. Where possible, monitoring points shall be located within the excavation backfill surrounding the underground storage tank. The owner or operator shall determine the exact location of the underground storage tank before attempting to install monitoring wells and/or devices as approved by the local agency.

(e) Vadose zone vapor monitoring shall comply with the following minimum requirements:

(1) The vapor characteristics of the stored product, or a tracer compound placed in the underground tank system, shall be sufficiently volatile to result in a vapor level that is detectable by the monitoring devices;

(2) Backfill materials and soils surrounding monitoring points shall be sufficiently porous to readily allow diffusion of vapors;

(3) The level of background contamination in the excavation zone and surrounding soils shall not interfere with the method used to detect releases from the underground storage tank;

(4) The monitoring devices shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system;

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(5) To maximize release detection, the location and depth of each monitoring point shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(6) Vapor monitoring wells located in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well; and

(7) All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in Sections 2649(b)(c)(e)&(f) of this article.

(f) Soil-pore liquid monitoring and other forms of vadose zone monitoring shall comply with the following minimum requirements:

(1) The stored substance shall be susceptible to detection by the proposed release detection method;

(2) The stored substance shall not corrode or otherwise attack the materials from which the detection system is constructed or otherwise render the detection system inoperable or inaccurate; and

(3) Site-specific conditions (e.g., precipitation, ground water, soil-moisture, background contamination) shall not interfere with the operability and accuracy of the release detection method.

(g) Compliance with the requirements of Paragraphs (e) and (f) of this section shall be based on a site-assessment, including assessment of the underground storage tank excavation zone.

Authority: H&SC 25299.3, 25299.9

Reference: H&SC 25292

40 CFR 280.43

2648) General Construction and Sampling Methods

(A) Soil and water sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance and shall not donate/ capture/ mask/ nor alter the constituents for which analyses will be made/

(B) Representative samples of all supported materials used for filter packs//and to construct seals shall be evaluated to determine their acceptability with regard to Subsection (A) of this section/

(C) All drilling tools shall be thoroughly cleaned immediately before a boring is started/

(D) All well casings/ casing fittings/ screens/ and all other components that are installed in the well shall be thoroughly cleaned before installation in the boring/

(E) All soil and water samplers shall be cleaned before each sample is taken/

(f) Drilling fluid additives shall be limited to inorganic/ non-hazardous materials which conform to the provisions of Subsection (a) of this section/ All additives used and the depth in which they were used shall be accurately recorded in the boring log/

(g) Representative samples of additives/ cement/ bentonite/ and filter media shall be retained for 90 days for possible analysis for contamination or interfering constituents/

(h) All ground water monitoring wells shall be appropriately developed until the discharge water contains less than 10 ppm settleable solids/

(i) Well heads shall be provided with a watertight cap/

(j) Well heads shall be enclosed in a surface security structure that protects the well from the entry of surface water/ accidental damage/ unauthorized access/ and vandalism///This may be accomplished by providing a locked well cap or by securing the facility within which a well is located/

(k) Pertinent well information including well identification/ well type/ well depth/ well casing diameters if more than one size is used/ and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure/

(l) Surface seals for vapor wells that are completed no more than 5 feet below the bottom of the underground storage tank and which are above any free water zones shall be required at the discretion of the local agency on a site-specific basis/

(m) If surface seals for vapor wells that are completed in or below a free water zone are required/ the seal shall not extend below the top of the underground storage tank/

(n) Vapor wells constructed wholly within backfill that surrounds the//underground storage tank and which extends to the ground-surface need not be sealed against infiltration of surface water/

(o) The need for surface seals for other types of vadose zone installations shall be determined on a case-by-case basis/

(p) In order to supplement monitoring Alternatives 2/ 3/ 4/ and the ground water monitoring well portion of 5/ the highest anticipated ground water level and existing ground water level shall be determined///Highest anticipated ground water levels shall be determined by a review of all available water level records for wells within 1 mile of the site///Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all existing wells/ for which records are available/ that are within 500 feet of the facility and which are perforated in the zone of interest/ or by drilling at least 1 exploratory boring constructed as follows/

(1) The exploratory boring shall be drilled downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than 500 feet from the underground storage tank.

(2) The exploratory boring may be of any diameter capable of allowing the detection of first water.

(3) The exploratory boring shall be drilled to first perennial ground water or to a minimum depth of 100 feet for Alternatives 2, 3, and 6 or to a minimum depth of 30 feet for Alternative 4.

(4) If ground water is encountered and ground water monitoring is part of the monitoring alternative, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section and Section 2647 of this article.

(5) If ground water is encountered but monitoring is not required or if the exploratory boring does not encounter ground water it shall be sealed in accordance with the provisions of Subsections 2648 (a) and (b) of this article.

(d) All borings that are not used for ground water or vapose zone monitoring shall be sealed from the ground surface to the bottom of the boring with bentonite grout.

(e) All borings that are converted to vapose zone monitoring wells in which the monitored interval is shallower than the total depth of the boring shall have the portion of the boring which is below the monitored interval sealed with bentonite grout.

(f) All slurry-type grouts used to abandon a boring or for well seals shall be emplaced by the tremie method.

(g) All borings shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. A technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeness of the logs.

(h) All vapose zones above the free water zone shall be noted and accurately logged.

(i) If evidence of contamination is detected by sight, smell, or other field analytical methods, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

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2648. Ground Water Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize ground water monitoring as part of non-visual monitoring shall comply with the requirements of this section. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where permissible under this section, as the sole release detection method.

(b) Ground water monitoring may be used as the sole release detection method of non-visual monitoring for existing underground tanks only where all of the following conditions exist:

(1) The hazardous substance stored in the underground storage tank is immiscible with water and has a specific gravity of less than one;

(2) Continuous monitoring devices or manual methods are used which are capable of detecting the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells. This capability shall be certified by an independent third party using an appropriate evaluation procedure. Examples of acceptable evaluation procedures are provided in Appendix V of this chapter;

(3) The existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than 20 feet from the ground surface. These ground water levels shall be determined according to the requirements of Section 2649(c) of this article;

(4) The hydraulic conductivity of the soil(s) between the underground storage tank and the monitoring wells or devices is at least 0.01 cm/sec (e.g. the soil consists of gravels, coarse to medium sands, or other permeable materials);

(5) The ground water proposed for monitoring has no present beneficial uses (e.g., domestic, municipal, industrial, agricultural supply) or is not hydraulically connected to ground or surface water which has actual beneficial uses; and

(6) Monitoring wells or devices are located within the excavation zone or as close to the excavation zone as feasible.

(c) Compliance with the conditions specified in Paragraph (b) of this section shall be based on a site-assessment, including assessment of the areas within and immediately below the underground storage tank excavation zone. If ground water monitoring is approved as the sole release detection method of non-visual monitoring, the number and location of the monitoring wells and/or devices as approved by the local agency shall also be based on this site-assessment with minimum requirements as follows:

(1) Single tank - two wells, one at each end of the tank.

(2) Two or three tanks - three wells equally spaced.

(3) Four or more tanks - four wells, at least two of which shall be downgradient and the remainder equally spaced.

(4) Pipelines - additional wells, if needed, as determined by the local agency.

(d) Ground water monitoring shall be conducted at least monthly or continuously. Any continuous monitoring system shall be capable of detecting the presence of hazardous substance on top of the ground water in the monitoring well and allow collection of periodic samples. Ground water samples shall be analyzed by visual observation or field or laboratory analysis as approved by the local agency depending on the method of monitoring and the constituents being evaluated. The local agency may require periodic laboratory analysis where visual observation or field analysis does not provide an adequate degree of detection as compared to that of laboratory analysis. Sampling conducted which requires field or laboratory analysis shall comply with the minimum requirements of Section 2649(g) of this article.

(e) The number, location, and depths of ground water monitoring wells shall be selected to achieve the objective specified in Section 2641(a) of this article. Monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster, subject to the review and approval of the local agency.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2649. Well Construction and Sampling Requirements

(a) Owners of existing underground tanks who utilize a qualitative release detection method shall comply with the requirements of this section and any applicable requirements of Sections 2644, 2647, and 2648 of this article.

(b) The installation of all monitoring wells and the drilling of all other borings shall be in accordance with local permitting requirements or in their absence, with the following requirements:

(1) All monitoring wells and all other borings shall be logged during drilling according to the following requirements:

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5, and 6, published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention: Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225);

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation;

(C) All wet-zones above the water table shall be noted and accurately logged. Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log; and

(D) Geologic logs shall be described by a professional geologist or civil engineer, who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System, or by a technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals, provided that the professional must review the logs and assume responsibility for the accuracy and completeness of the logs.

(2) All drilling tools shall be thoroughly steam cleaned immediately before each boring is started;

(3) All well casings, casing fittings, screens, and all other components that are installed in a well shall be thoroughly cleaned before installation;

(4) Soil and water sampling equipment and materials used to construct a monitoring well shall be compatible with the stored hazardous substance and shall not donate, capture, mask, or alter the constituents for which analyses will be made. All perforated casings used in the construction of monitoring wells shall be factory perforated;

(5) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the requirements of Paragraph (b)(4) of this section. All additives used shall be accurately recorded in the boring log;

(6) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents;

(7) If evidence of contamination is detected by sight, smell, or field analytical methods, drilling shall be halted until a responsible professional determines if further drilling is advisable;

(8) All borings which are converted to vadose zone monitoring wells shall have the portion of the boring which is below the monitored interval sealed with approved grout;

(9) All borings which are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with an approved grout. All slurry-type grouts used to seal an abandoned boring or an abandoned well shall be emplaced by the tremie method; and

(10) All monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering. Surface seals may be required by the local agency.

(c) When installing a vadose zone or ground water monitoring well, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by reviewing all available water level records for wells within one mile of the site. Existing site ground water levels shall be established either by reviewing all available water level measurements taken within the last two years at all existing wells, within 500 feet of the underground storage tank which are perforated in the zone of interest, or by drilling at least one exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient, if possible, and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than ten feet from the underground storage tank;

(2) The exploratory boring may be of any diameter capable of allowing the detection of first ground water;

(3) The exploratory boring shall be drilled to first perennial ground water, or to a minimum depth of 20 feet for vadose zone monitoring wells, or to a minimum depth of 30 feet for ground water monitoring wells if permitted by site lithology;

(4) If ground water is encountered, and ground water monitoring is the monitoring method, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section; and

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(5) If ground water is encountered, but ground water monitoring is not the monitoring method, or if the exploratory boring does not encounter ground water, the boring shall be sealed in accordance with the provisions of Paragraph (b)(9) of this section.

(d) In addition to the requirements of Paragraph (b) of this section, all ground water monitoring wells shall be designed and constructed according to the following minimum requirements:

(1) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the bottom level of the underground storage tank. However, wells shall not extend through laterally extensive impermeable zones that are below the water table and that are at least five feet thick. In these situations, the well shall be terminated one to two feet into the impermeable zone;

(2) Ground water monitoring wells shall be designed and constructed as filter packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well;

(3) Ground water monitoring well casings shall extend to the bottom of the boring and shall be factory perforated from a point of one foot above the bottom of the casing to an elevation which is either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation;

(4) All well casings shall have a bottom cap or plug;

(5) Filter packs shall extend at least two feet above the top of the perforated zone except where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones or where the ground surface is less than ten feet above the highest anticipated ground water level, the local agency may reduce the height of the filter pack so long as the filter pack extends at least to the top of the perforated zone. Under such circumstances, additional precautions shall be taken to prevent plugging of the upper portion of the filter pack by the overlying sealing material;

(6) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of two inches which are installed in a boring whose diameter is at least four inches greater than the outside diameter of the casing;

(7) Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction;

(8) Seventy-two or more hours following well construction, all ground water monitoring wells shall be adequately developed and equilibrium shall be established prior to any water sampling;

(9) Well heads shall be provided with a water-tight cap and shall be enclosed in a surface security structure that protects the well from surface water entry, accidental damage, unauthorized access, and vandalism. Traffic lids shall be clearly marked as monitoring wells; and

(10) Pertinent well information including well identification, well type, well depth, well casing diameters (if more than one size is used), and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(e) In addition to the requirements of Paragraph (b) of this section, all vadose zone vapor monitoring wells shall be cased and sealed as follows:

(1) Well casings for vapor monitoring shall be fully perforated except for the portion adjacent to a surface seal and that portion used as a free liquid trap;

(2) Surface seals for vapor wells that are completed no more than five feet below the bottom of the underground storage tank and which are above any free water zones may be required at the discretion of the local agency on a site-specific basis;

(3) If surface seals for vapor wells are completed in or below a potential free water zone, the seal shall not extend below the top of the underground storage tank; and

(4) Vapor wells need not be sealed against infiltration of surface water if constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface.

(f) Undisturbed (intact) soil samples shall be obtained from all borings for the installation of monitoring wells and all other borings and analyzed according to the following minimum requirements, unless the local agency waives this requirement under this subsection:

(1) Borings shall be drilled and sampled using accepted techniques which do not introduce liquids into the boring and which will allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using acceptable techniques, the requirement for soil sampling may be waived by the local agency provided, however, that installation of the vadose zone or ground water monitoring system shall be completed; and provided further, that once below the water table, borings need not be advanced using the same method that was used in the vadose zone;

(2) Soil samples shall be obtained at intervals of five feet or less and at any significant change in lithology, beginning at the ground surface. Sampling is not required in unweathered bedrock which has little or no permeability;

(3) A soil sample shall be obtained at the termination depth of a dry boring regardless of the spacing interval;

(4) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide any specified replicate analyses;

(5) Soil samples shall be acquired, prepared, preserved, stored, and transported by methods that are appropriate for the objectives of the investigation which safeguard sample integrity and satisfy the requirements of Paragraph (g) of this section;

(6) Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative or qualitative results. Lower detection limits shall be verified by the laboratory;

(7) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then samples shall be analyzed for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents;

(8) If hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soil analysis is not necessary pursuant to this subsection. The hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations and the owner or operator shall comply with Paragraph (9) of this subsection. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment; and

(9) If soil analysis indicates that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank pursuant to Article 3, 6 or 7 of this chapter.

(g) The qualitative release detection method shall include consistent sampling and analytical procedures, approved by the local agency, that are designed to ensure that monitoring results provide a reliable indication of the quality of the medium (e.g., ground water, soil-pore liquid, soil vapor, or soil) being monitored. Some acceptable procedures are listed as references in Appendix I, Table C of this chapter. At a minimum, the owner or operator shall provide a written detailed description, to be specified in the permit and to be maintained as part of the records required under Section 2712 of Article 10 of this chapter, of the procedures and techniques for:

(1) Sample collection (e.g., purging techniques, water level), sampling equipment, and decontamination of sampling equipment);

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain-of-custody control.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

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Article 5. Release Reporting and Initial Abatement Requirements

2650. Reporting and Recording Applicability

[a] All unauthorized releases from the primary or secondary container shall be reported according to the requirements of the appropriate sections of Chapter 6/7 of Division 20 of the Health and Safety Code and this article/

[b] Certain unauthorized releases to secondary containers/ as described in Section 25294 of the Health and Safety Code/ shall be recorded on the operator's monitoring reports according to Section 2651 of this article///No other report shall be required if the leak detection monitoring system in the space between the primary and secondary containers can be reactivated within 8 hours///This provision shall be applicable only to new underground storage tanks as defined in Article 2 of this subchapter/

[c] All other unauthorized releases shall be reported within 24 hours after the release has been/ or should have been / detected according to Section 2652 of this article/

(a) The requirements of this article apply to all owners or operators of one or more underground storage tanks storing hazardous substances.

(b) The owner or operator shall record or report any unauthorized release from the underground storage tank, and any spill or overfill, in accordance with the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(c) The owner or operator of an underground storage tank with secondary containment shall record any unauthorized release described in Section 25294 of the Health and Safety Code in accordance with Section 2651 of this article.

(d) Owners or operators subject to the requirements of this article shall record all spills and overfills in accordance with the requirements of Section 2651 of this article.

(e) The owner or operator of an underground storage tank shall report on a form provided by the Board any unauthorized release described in Section 25295 of the Health and Safety Code, and any of the following conditions according to Section 2652 of this article:

(1) Any unauthorized release recorded under Paragraphs (c) or (d) of this section which the owner or operator is unable to cleanup or which is still under investigation within eight hours of detection;

(2) The discovery by the owner or operator, local agency, or others of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;

(3) Unusual operating conditions observed by the owner or operator including erratic behavior of product dispensing equipment, the sudden loss of product from the underground storage tank, or an unexplained presence of water in the tank, unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced; and

(4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

(f) The reporting requirements of this article are in addition to any reporting requirements specified by Section 13271 of Division 7 of the California Water Code and other laws and regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25294, 25295

40 CFR 280.52

2651. ~~Unauthorized Releases Requiring~~ Recording Requirements for Unauthorized Releases

(a) Owners or operators required by section 2650 to record a release or condition shall comply with the requirements of this section.

~~(a)~~

(b) The operator's monitoring records, as required under Section 2712 of Article 10 of this chapter ~~report required by subsection 2650(b) of this article~~ shall include:

(1) The operator's name and telephone number;

~~(1)~~

(2) A list of the types, quantities, and concentrations of hazardous substances released;

~~(2) Method of disposal~~

(3) A description of the actions taken to control and cleanup the release;

~~(3)~~

(4) The method and location of disposal of the released hazardous substances (indicate whether a hazardous waste manifest~~(s)~~ is was/will be utilized);

~~(4) Method of future leak prevention or repair///If this involves a change as defined in Article 10, Section 2712, Subsection (a)1 of this subchapter, then appropriate reports pursuant to that article shall also be filed.~~

(5) A description of the actions taken to repair the underground storage tank and to prevent future releases. If this involves a change as described in Section 25286 of the Health and Safety Code, then notification pursuant to that section shall be made.

[5]

(6) If the primary container is to continue to be used, then A description of how the method used to reactivate the interstitual monitoring system between the primary and secondary container after replacement or repair of the primary containment.

[6] Facility operator's name and telephone number.

[7] The approximate costs for cleanup to be submitted included voluntarily.

(c) The integrity of the secondary containment should be reviewed for possible deterioration under the following conditions:

(1) Hazardous substance in contact with the secondary containment is not compatible with the material used for secondary containment;

(2) The secondary containment is prone to mechanical damage from the mechanical equipment used to remove or clean up the hazardous substance collected in the secondary containment; or

(3) Hazardous substances, other than those stored in the primary containment system, are added to the secondary containment to treat or neutralize the released hazardous substance and the added substance or resulting substance from such a combination is not compatible with the secondary containment.

(d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts (e.g., secondary containment is breached due to deterioration), the release shall immediately be treated as a reportable release be reported pursuant to Section 2652 of this article.

[5]

(e) Whenever the local agency shall reviews the operator's monitoring reports and finds that one or more recordable unauthorized releases have occurred, the local agency shall review the information submitted included in the monitoring records pursuant to subsection Paragraph 2651 (a), of this section and shall review the permit, and may inspect the underground storage tank pursuant to the provisions of Article 10/ Section 2712/ subSections 2712 [g] (e) and [h] (f)//of this subchapter Article 10. If the local agency shall finds that the containment and monitoring standards of Article 3 of this subchapter can no longer continue to be met, declared by the local agency shall revoke the permit require the operator to cease the operation of the underground storage tank system until appropriate modifications are made to allow compliance comply with the standards.

[c] Deterioration of the secondary container is likely when any of the following conditions exist:

[1] The secondary container will have some loss of integrity due to contact with the stored hazardous substance;

[2] The mechanical means used to cleanup the released hazardous substance could damage the secondary container; or

[3] Hazardous substances, other than those stored in the primary container, are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the cleanup process]

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292, 25294, 25295

40 CFR 280.52

2652. Reporting, Investigation and Initial Response Requirements for Unauthorized ~~Releases Requiring Reporting~~

[a] All other unauthorized releases shall be reported as specified in this section]

(a) Owners or operators required, by Section 2650 of this article, to report a release or condition shall comply with the requirements of this section.

(b) Within 24 hours after the an unauthorized release or condition has been detected, or should have been detected, using required monitoring] the owner or operator shall notify the local agency by submitting a leak report form and the State Office of Emergency Services or the regional Board] shall investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board.

(c) Within 5 working days of detecting the an unauthorized release, the owner or operator of permitted shall submit to the local agency a full written report to which includes all of the following information which is known at the time of filing the report:

(1) Operator's name and telephone number;

[1]

(2) A list of the types, quantities, and concentrations of hazardous substances released;

(3) The approximate time the unauthorized release occurred;

(4) The time the unauthorized release was discovered;

(5) The time the unauthorized release was stopped;

(6) A description of the actions taken to control and/or stop the release;

[2]

(7) A description of the corrective and remedial actions including investigations which were undertaken and will be the results of all investigations completed at that time conducted to determine the nature, and extent of soil, of ground water or surface water contamination due to the release;

[3]

(8) The method(s) of cleanup implemented to date, proposed cleanup actions, and approximate cost of actions taken to date a time schedule for implementing the proposed actions;

[4]

(9) The method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water [INDICATE WHETHER A HAZARDOUS WASTE MANIFEST[S] IS UTILIZED]. Copies of any hazardous waste manifests completed for off-site transport of these media shall be attached to the report;

[5]

(10) A description of the proposed method(s) of repair or replacement of the primary and secondary containment. If this involves a change [AS DEFINED IN SUBSECTION 2712(a) OF ARTICLE 10 OF THIS SUBCHAPTER] described in Section 25286 of the Health and Safety Code, then notification [APPROPRIATE REPORTS] pursuant to that [ARTICLE] section shall [ALSO be FILED] made.

(11) A description of the actions taken to prevent future releases.

[6] [FACILITY OPERATOR]'S NAME AND TELEPHONE NUMBER]

(d) Until investigation and cleanup [IS] are complete, the owner or operator [OF PERMITTEE] shall submit reports to the local agency [AND THE] or regional board, whichever is overseeing the cleanup, every 3 months or at a more frequent intervals as specified by a [RESPONSIBLE AGENCY] the local agency or regional board. At a minimum, the reports shall include the information requested in [SUBSECTIONS] Paragraphs (c)[2](7), (c)[3](8), and (c)[4](9) of this section. The reports shall be submitted as attachments to the Leak Site Update Form provided by the Board and obtained from the agency overseeing the cleanup. These reports shall contain all data and analyses resulting from

investigations and corrective actions. Information obtained in Sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency.

(e) Free product removal reports prepared in compliance with Section 2655 of this article shall be submitted to the local agency within 45 days of release confirmation.

[f] THE REPORTING REQUIREMENTS OF THIS SECTION ARE IN ADDITION TO ANY REPORTING REQUIREMENTS SPECIFIED BY SECTION 13271 OF DIVISION 7 OF THE WATER CODE AND OTHER LAWS AND REGULATIONS.

(f) The owner or operator shall conduct the initial abatement and site characterization actions according to the requirements of Sections 2653 and 2654 of this article.

(g) If the test results from either an investigation conducted under Paragraph (f) of this section or any other procedures approved by the local agency do not confirm that a release from the underground storage tank has occurred, no further investigation or corrective action is required.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286, 25288, 25295

40 CFR 280.50 - 280.53

2653. Initial Abatement Actions

(a) Owners or operators required by Paragraph 2652(f) this article, to conduct initial abatement actions shall comply with the requirements of this section. Owners and operators shall:

(1) Remove as much of the hazardous substance from the underground storage tank as is necessary to prevent further release to the environment.

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

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

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

(5) Investigate to determine the possible presence of free product, and if free product is present begin removal thereof as soon as practicable in accordance with the requirements of Section 2655 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.61, 280.62

2654. Initial Site Characterization

(a) Owners or operators required by Paragraph 2652(f) of this article to conduct initial site characterization actions shall comply with the requirements of this section.

(b) The owner or operator shall promptly assemble information about the underground storage tank site and the nature of the unauthorized release, including information gained while confirming the release or completing the initial abatement actions in Section 2653 of this article. This information must include, but is not necessarily limited to, the following:

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

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

(3) Results of any investigation conducted under Paragraph 2652(f) of this article;

(4) Results of the free product investigations required under Paragraph 2653(a) (5) of this article to be used by the owner or operator to determine whether free product must be recovered;

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25295
40 CFR 280.63

2655. Free Product Removal

(a) At sites where investigations under Section 2653 of this article indicate the presence of free product, owners or operators shall comply with the requirements of this section and remove free product to the maximum extent practicable as determined by the local agency while continuing, as necessary, any actions required under Sections 2652 through 2654 of this article.

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

c) The owner or operator shall use abatement of free product migration as a minimum objective for the design of the free product removal system.

d) The owner or operator shall handle any flammable products in a safe and competent manner.

e) The owner or operator shall prepare and submit to the local agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

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

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

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

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

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

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

(7) The means of disposal and/or proposed disposition of the recovered free product.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.64

Article 6. Allowable Repairs and Upgrade

2660. Applicability

(a) This article describes the conditions which must be met to repair or upgrade underground storage tank systems.

(b) Section 2661 of this article describes the repair requirements for underground storage tanks and piping.

(c) Section 2662 of this article describes upgrade requirements for corrosion protection for all underground storage tanks installed on or before January 1, 1984. Underground storage tanks constructed of fiberglass, steel clad with fiberglass or noncorrosive materials do not require upgrade to prevent releases due to corrosion.

(d) Section 2663 of this article describes the upgrade requirements for spill and overfill prevention equipment.

(e) Section 2664 of this article describes the upgrade requirements for underground pressurized piping.

(f) Upgrade requirement for underground storage tanks, for spill and overfill prevention, and for underground pressurized piping shall be completed on or before December 22, 1998.

Authority: HSC 25299.3

Reference: HSC 25295

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(g) The owner may line an underground storage tank containing motor vehicle fuel not under pressure as a preventative measure. The owner shall notify the local agency of his intent to line the tank. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release. The owner shall notify the local agency prior to taking soil samples. If there has been no unauthorized release, the owner may line the tank in accordance with Section 2662 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25292.1, 25296

40 CFR 280

2661. Underground Storage Tank Repairs Evaluation

(a) The evaluations described in Subsections Paragraphs (b) through (d) of this section must be completed before a primary container repair can be authorized by the local agency. Failure The local agency shall deny the proposed repair if the owner fails to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be grounds for a local agency to deny the proposed repair.

(b) It shall be determined if the cause of failure mechanism is isolated to the actual failure or is affecting other areas of the underground storage tank, or if any other causes of failure mechanism is affecting the primary container.

(c) One of the following Appropriate tests shall be conducted to determine the thickness of the underground storage tank:(1) An ultrasonic test(2) and Certification certified by a special inspector that the shell will provide structural support for if the tank is repaired using the interior lining method. The special inspector shall make this certification by entering and inspecting the entire interior surface of the underground storage tank and shall base this certification upon the following procedures and criteria:

(A)

(1) If the underground storage tank is made of glass fiber, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section of the tank has compressed more than 1 percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service unless the tank is excavated and rehabilitated to correct the compression. The special inspector shall also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fiber reinforcing is required for certification before the underground storage tank may be lined.

[B]

(2) If the underground storage tank is made of steel, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank interior surface shall be abrasive blasted completely free of scale, rust, and foreign matter. The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness. ~~The special inspector shall sound any perforations or areas showing corrosion pitting with a brass ballpeen hammer to enlarge the perforation or break through a potentially thin steel area.~~ or the underground storage tanks ~~that have~~ has any of the following defects ~~shall not be certified or returned to service.~~

(i) ~~An underground storage tank which has~~ An open seam or a split longer than 3 inches.

(ii) ~~An underground storage tank which has~~ A perforation larger than 1-1/2 inches in diameter or below a gauging opening larger than 2-1/2 inches in diameter.

(iii) ~~An underground storage tank with~~ Five or more perforations in any 1 square-foot area. ~~and any single perforation which is larger than 1/2 inch in diameter~~

~~[iv] An underground storage tank with 20 or more perforations in a 800 square-foot area and any single perforation which is larger than 1/2 inch in diameter.~~

~~[v] Any failure or opening within 6 inches of any seam or weld.~~

(iv) Multiple perforations of which any single perforation is larger than 1/2 inch in diameter.

(3) A test approved by the board as comparable to the tests specified in ~~sub~~Paragraph ~~[A] or [B]~~ (1) or (2) ~~of this subsection~~ immediately above.

(d) It shall be demonstrated to the satisfaction of the local agency based on ~~one~~ of the tests in ~~subsection~~ Paragraph (c) of this section that a serious corrosion or structural problem does not exist. If the local agency determines that a serious corrosion or structural problem exists, an interior lining repair may be used ~~allowed by the local agency~~ if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structural integrity or containment ability of the underground storage tank.

(e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

~~2662 Repair Methodology~~

~~(a) If an interior lining of an underground storage tank is approved by the local agency based on satisfactory demonstration of the issues raised in Section 2661 of this article, then the repair must be accomplished according to the applicable subsections of this section.~~

~~(b)~~

(f) If interior lining (coating) is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices.

~~(c)~~

(g) The repair material and any adhesives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the hazardous substance being stored.

~~(d)~~

(h) The repair material and lining process shall be listed or certified by ~~a nationally recognized~~ an independent testing organization based on voluntary consensus standards. The requirement shall become effective 1 year after the effective date of these regulations ~~or 1 year after a listing or certification procedure is available, whichever is later.~~

i) Holes shall be plugged using self-tapping bolts or boiler plugs or by welding and shall be repaired as follows:

(1) Repair areas shall be covered with epoxy or isophthalic polyester based resin. The resin shall be compatible with the intended use of the tank.

(2) Fiberglass cloth with a minimum weight of 1.5 oz/yd that is silane treated shall be worked completely into the resin base. The resin base shall be installed a minimum of two inches beyond the fiberglass cloth.

(3) All repairs shall include installation of fiberglass cloth with a minimum dimension of 12 x 12 inches centered over the area to be repaired. Larger repairs shall require the cloth to be large enough to provide cloth coverage of at least five inches of cloth bonded to the tank wall, measured from the outermost edge of the repair area, to the cloth's edge.

(4) A second layer of fiberglass cloth of the same weight as specified in Paragraph 2 above, shall be installed directly over the primary cloth layer, and shall be cut so to overlap the primary patch by 1.5 inches on all sides.

(5) This repair shall be allowed sufficient cure time, as determined by the resin manufacturer, to provide an acceptable base for tank lining installation.

(j) Steel underground storage tanks that exhibit external corrosion during the course of inspection or repair shall comply with the cathodic protection requirements in Section 2635.

(k) Repaired tanks shall be internally inspected by a coatings expert for conformance with the standards under which it was repaired. Certification of this repair work shall be provided to the local agency by the owner or operator and the party performing the internal inspection.

(l) Repairs to non-steel underground storage tanks shall be properly conducted in accordance with the tank manufacturer's specifications:

(m) Sections of piping and fittings that have released product as a result of corrosion or other damage must be replaced. Soil samples shall be taken in accordance with the requirements in Section 2672(d) of Article 7 of this chapter.

(n) Repaired tanks and piping must be tested for tightness within 30 days following the date of completion of the repair in accordance with the tank manufacturer's specifications. Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate article of this chapter.

(o) Underground storage tank owners and operators must maintain records of repairs for the remaining operating life of the tank that demonstrate compliance with the requirements of this section.

(p) A vapor or ground water monitoring system shall be installed to continuously monitor the repaired underground storage tank for future unauthorized releases, in accordance with Section 2647 or 2648, if no secondary containment system exists.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296

40 CFR 280.33

2662. Underground Storage Tank Upgrade

(a) All underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

(b) Owners of motor vehicle fuel tanks made of steel shall, on or before December 22, 1998, provide both interior lining and exterior cathodic protection by complying with the following upgrade requirements:

(1) Tank owners shall provide interior lining by complying with all requirements set forth in Section 2661 except Paragraph 2661(p) and those pertaining to non-steel tank and piping, and

(2) Cathodic protection shall be designed, installed, and inspected as specified in Section 2635(a)(2). All cathodic protection wells must be constructed in accordance with applicable state and local well regulations.

(3) The upgraded underground storage tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter as follows:

(A) The tank shall be cleaned so that no residue remains on the tank walls.

(B) The tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute.

(C) The inspector shall take interior diameter measurements and visually inspect the lining.

(D) If the liner shows discontinuity, compression or tension cracking or the tank cross-section has compressed more than one percent of the diameter measurement made at the time of lining, the tank shall be replaced or closed in accordance with Articles 3 or 7, respectively.

(E) The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thickness recorded on a form that identifies the location of each reading. If any area shows metal thickness less than 75 percent of the original wall thickness the tank shall be closed in accordance with Article 7.

(4) The upgraded underground storage tank shall be replaced or closed in accordance with Articles 3 or 7 at the end of the tank's operational life.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296

40 CFR 280.21

2663. Primary Container Monitoring Spill and Overfill Prevention Equipment Upgrade Requirements

(a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the underground storage tank test as described in Section 2663 of Article 4 of this subchapter.///The underground storage tank shall also be vacuum tested at a vacuum of 5.3 inches (135 mm) Hg for 1 minute. The vacuum test shall not be required if technology is not available for testing the underground storage tank onsite using accepted engineering practices.

(b) All pipelines shall be pressure tested following repair to assure the adequacy of the repair.///The testing shall be accomplished using accepted procedures.///Some acceptable procedures for pressure testing are provided in Appendix I of this subchapter.

Authority: H&SC 25299.3

Reference: H&SC 25296

(a) Underground storage tank systems shall have an overfill prevention system and a spill container which meets the requirements specified in Section 2635(c) of this article. The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. This requirement applies to all existing underground storage tanks, regardless of the date of installation, and must be complied with on or before December 22 1998.

(b) Owners or operators must use care to prevent releases due to spilling or overfilling. The owner, operator, or their agent must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25292, 25292.1
40 CFR 280.21

2664. Underground Pressurized Piping Upgrade Requirement

(a) All underground pressurized piping containing non-petroleum hazardous substances shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998.

(b) All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other materials compatible with stored products and resistant to corrosion. The secondary containment system shall meet the requirements specified in Section 2635(b). Any retrofitting of such piping which is required shall be completed no later than December 22, 1998.

(c) All underground pressurized piping shall be equipped with automatic line leak detectors no later than December 22, 1990.

(d) All underground pressurized piping and secondary containment shall be tested for tightness after installation and annually in accordance with the requirements specified in Section 2635(b)(4) and (5).

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25292,25292.1
40 CFR 280.21

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Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of Section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased, for 12 consecutive months but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years will again be used for the storage of hazardous substances. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances consistent with permit conditions.

(c) The permanent closure requirements of Section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and where the owner or operator has no intent within the next 2 years to use the underground storage tank the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. even though there is no use being made of the stored substance/ In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to Section 2671 or 2672 of this article, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(f) At least thirty (30) days prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with Section 2671 or 2672 of this article, as appropriate. The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release///In this situation/ the underground storage tank owner shall submit the required proposal within 14 days of either the discovery of an unauthorized release or the implementation of actions taken to prevent or minimize the effects of the unauthorized release/

(g) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release do not qualify for temporary closure pursuant to Section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made which would ~~allow~~ make the underground storage tank ~~to be~~ capable of storing hazardous substances ~~pursuant to~~ in accordance with the permit issued by the local agency.

(h) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 ~~of this article~~.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to Section 13304 of the Water Code and any other applicable law or regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70, 280.71, 280.73

2671. Temporary Closure Requirements

~~(a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.~~

~~(b)~~

(a) The owner or operator shall comply with all of the following requirements to complete and maintain temporary closure of an underground storage tank:

(1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank~~, either in part or as a whole,~~ shall be inerted, as often as necessary ~~purged of the flammable vapors~~ to levels that ~~would~~ will preclude an explosion or to such lower levels as may be required by the local agency.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and the test results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.

(4) Except for required venting, all fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs.

(5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank ~~except if~~ unless the pump power services some other equipment which is not being closed such as the impressed current cathodic protection system.

~~(c)~~

(b) The monitoring required pursuant to the permit may be modified ~~or eliminated~~ by the local agency during the temporary closure period ~~by the local agency~~. In making a decision to modify such monitoring the local agency shall consider~~, in making the above decision,~~ the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet ~~reached the monitoring location~~ been detected.

~~(d)~~

(c) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to ~~assure~~ verify that the temporary closure ~~actions~~ measures are still in place. ~~This~~ Such inspection shall include at least the following actions:

(1) Visual inspection of all locked caps and concrete plugs.

(2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to ~~subsection (b)~~ Paragraph (a)(3) of this section.

(d) The owner may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in Sections 2662, 2663, and 2664.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either ~~subsection~~ Paragraph (b) of this section for underground storage tank removal or ~~subsection~~ Paragraph (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate ~~subsection~~ paragraph of this section. ~~Subsections~~ Paragraphs (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks ~~proposing to remove the underground storage tank~~ subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code~~, in addition to the following~~ and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank/ either in part or as a whole/ shall be inerted purged of the flammable vapors to levels that would shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.

(4) An owner of an underground storage tank or any part of an underground storage tank thereof that is destined for a specific reuse shall indemnify to advise the local agency of:

(A) The future name of the new owner of the underground storage tank owner;

(B) Name of the new operator;

(C) The location of use; and

(D) Nature of use.

(5) An owner of an underground storage tank or any part of an underground storage tank that is destined for reuse as secondary material shall indemnify this reuse to the local agency/

(c) Closure of Owners of underground storage tanks in place subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code/ and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

(3) The underground storage tank, except for the piping that is closed pursuant to subdivision Paragraph (2) of this subsection, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

(4) A notice shall be placed in the deed to the property///The notice shall describe the exact vertical and areal location of the closed underground storage tank/ the hazardous substances it contained/ and the closure method/

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(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration shall be based on the ongoing leak detection monitoring, ground water monitoring or soil sampling analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If feasible the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, then soil samples shall be taken from the soils immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank shall be taken in accordance with Section 2649. A separate sample shall be taken for every 200 square feet for underground storage tanks or every for each 20 lineal-feet of trench for piping, at a minimum.

(2) If the underground storage tank or any portion thereof is not removed, soils sampling pursuant to Section 2668 of Article 4 of this subchapter shall be implemented) if feasible) at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank.

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If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with Section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this subchapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.71

Article 8. Categorical and Site-Specific Variance Procedures

2680. General Applicability of this Article

(a) This article sets up procedures for categorical and site-specific variances from the requirements for the construction and monitoring of new and existing underground storage tanks as described in Chapter 6.7 of Division 20 of the Health and Safety Code and Articles 3 and 4 of this subchapter. A site-specific variance, if approved, would apply only to the specific site(s) approved for a variance. A categorical variance, if approved, would apply to the region, area, or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific. These procedures are in addition to those established by the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2681 of this article specifies the procedures that must be followed by the applicant and the State Board for categorical variance requests.

(c) Section 2682 of this article specifies the procedures that must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: H&SC 25299.3

Reference: H&SC 25299.4

2681. Categorical Variances

(a) A categorical variance allows an alternative method of construction or monitoring which would be applicable at sites in more than one local agency's jurisdiction. Application for a categorical variance shall be made to the State Board on a form provided by the State Board.

(b) Application for a categorical variance shall include, but not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A description of the proposed alternative program, method, device, or process.

(3) A description of the region, area, or circumstances under which the variance would apply.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6) Written comments or recommendations from impacted local agencies.

(7) An initial fee of $11,000.

(c) The applicant will be required to pay a fee based on the actual costs of considering the application. The ~~State~~ Board will bill the applicant for additional costs or refund ~~any remaining part~~ unused portion of the initial fee~~, if necessary~~.

(d) The ~~State~~ Board, shall review all applications submitted and ~~shall~~ notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

~~[e] The State Board shall complete any documents necessary to satisfy the California Environmental Quality Act (Division 13)[commencing with Section 21000[of the Public Resources Code].~~

~~[f]~~

(e) The ~~State~~ Board shall remand the application to the appropriate regional board if it determines that the application falls within Section 2682 of this article.

~~[g]~~

(f) The ~~State~~ Board shall hold at least 2 public hearings as set forth in Section 25299.4 of the Health and Safety Code. ~~In different areas of the state within 180 days of receipt of a complete variance application to consider the request for a categorical variance[~~

~~[h] Upon the close of a hearing[the presiding officer may keep the hearing record open for a definite time[not to exceed 30 days[to allow any interested person to file additional exhibits[reports[or affidavits[~~

~~[i]~~

(g) If the ~~State~~ Board grants the variance, it will prescribe the conditions the applicant must maintain and will describe the specific alternative for which the variance is being granted.

~~[j]~~

(h) All permit applicants who intend to utilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the local agency concurs in the applicability of the variance ~~applies~~, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the ~~State~~ Board provided all other permit conditions are met.

~~[k]~~

(i) The ~~State~~ Board shall modify or revoke a categorical variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The ~~State~~ Board shall not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and ~~with~~Chapters 1.5 and 6 of Division 3 of Title 23 of the California Code of Regulations ~~this chapter~~. The ~~State~~ Board shall notify all affected local agencies of ~~the~~ any modification or revocation. Local agencies shall appropriately modify or revoke all permits which were based on the categorical variance.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

2682. Site-Specific Variances

(a) A site-specific variance allows an alternative method of construction or monitoring which would be applicable at one or more sites within one a local agency's jurisdiction. Application for a site-specific variance shall be made by the petitioner to the appropriate regional board on a form provided by the regional board.,

(b) At least 60 days Prior to applying to the Regional Board for a variance, the petitioner applicant shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods or if the local agency does not act within 60 days of its receipt of the petitioner's a complete construction and monitoring plan from the petitioner/applicant, then the applicant may proceed with a submit the variance application to the Regional Board.

(c) An application for a site-specific variance shall include, but need not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device, or process shall be clearly identified.

(3) Any special circumstances on which the applicant would rely relies to justify the findings necessary for the variance, as prescribed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) Any documents necessary to satisfy environmental information or documentation requested by the Regional Board pursuant to the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(6) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6)

(7) A fee of $2,750 for variance requests at one site. A fee of $5,500 for variance requests at more than one site within one local agency's jurisdiction.

(d) The Regional Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

(e) The Regional Board shall hold a hearing on the proposed variance as specified in Section 25299.4(c) of the Health and Safety Code.

(f) Any site-specific variance shall prescribe appropriate additional conditions and shall describe the specific alternative system for which the variance is being granted. The Regional Board shall notify the applicant, and the local agency, and the Board of its decision.

(h) If the variance is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the Regional Board. A local agency shall not modify the permit unless it determines that the modification is consistent with the variance that has been granted.

(i) The Regional Board shall modify or revoke a variance upon a finding that th proposed alternative does not adequately protect the soil and the beneficia uses of the waters of the state from an unauthorized release. The Regional Board shall not modify nor revoke the variance until it has followed procedures comparable to those prescribed in this section and Chapters 1 and 6 of Division 3 of Title 23 of the California Code of Regulations. The Regional Board shall notify the local agency and the Boar of the modification or revocation. The local agency shall modify or revoke the permit for the site.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

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Article 9. Local Agency Additional Standards Request Procedures

2690. Applicability

This article sets up procedures for local agencies to request ~~State~~ Board authorization for ~~more stringent~~ design and construction standards other than those set by Article 3 of this ~~sub~~chapter. These procedures are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25299.2, 25299.4

2691. Additional Standards Request Procedures

(a) A local agency application for additional design and construction standards shall include:

(1) A description of the proposed design and construction standards which are in addition to those described in Article 3 of this ~~sub~~chapter.

(2) ~~Clear and convincing evidence that the additional standards are necessary.~~ Clear and convincing evidence that the additional standards are necessary to ~~avoid adequately~~ protect the soil and beneficial uses of the waters of the state from unauthorized releases.

(3) Any documents required by the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(4) An initial fee of $5,500.

(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any ~~remaining part~~ unused portion of the initial fee, ~~if necessary~~ as appropriate.

(c) The Board shall conduct an investigation and public hearing on the proposed standards and ~~their~~ the need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards.

(d) The Board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The Board shall not modify nor revoke the authorization until it has followed procedures comparable to those presented in ~~sub~~Chapters 1.5 and 6 ~~of this chapter~~ Division 3 of Title 23 of the California Code of Regulation.

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25299.4

Article 10. Permit Application, ~~Annual~~ Quarterly Report and Trade Secret Requirements

2710. General Applicability of Article

(a) This article describes specific administrative actions that must be ~~undertaken~~ undertaken by all underground storage tank owners, local agencies, and the ~~State~~ Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2711 of this article lists the information that must be submitted by the underground storage tank owner to the local agency as part of the permit application.

(c) Section 2712 of this article describes the conditions associated with a permit for the operation of an underground storage tank ~~that local agencies must include in all permits issued~~ and the conditions which local agencies must meet prior to permit issuance.

(d) Section 2713 of this article describes the ~~annual~~ quarterly report requirements for local agencies for unauthorized releases.

(e) Section 2714 of this article specifies conditions that must be met by an underground storage tank owner when requesting trade secret ~~provisions~~ protection for any information submitted to the local agency, ~~State~~ Board, or Regional Board. It also specifies how the local agency, the ~~State~~ Board, or Regional Board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284, 25285, 25286, 25288, 25289, 25290, 25293

2711. Permit Application and Information

(a) The permit application shall include, but not be limited to, the following information ~~if it is available~~ to the extent such information is known to the permit applicant:

(1) The name and address of the person who owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number where the underground storage tank is located, and type of business, if any, involved.

(3) The name, address, and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.

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(4) The name and telephone number of the person making the application, if other than the owner.

(5) A description of the underground storage tank including, but not limited to, the underground storage tank and auxiliary equipment manufacturer, year date of manufacture/ installation and tank capacity/ history of repairs/ and operation methods schedule/

[6] In the case of new underground storage tanks installed with systems for secondary containment utilizing membrane liners/ a certification by the membrane liner material manufacturer that the membrane liner meets the standards set forth in Subsection 2631[c] and [3][1] and [2] of Article 3 of this subchapter/ or/ if applicable/ Subsection 2633[e][1] and [2] of Article 3 of this subchapter/ and a certification by the membrane liner fabricator that the membrane liner meets the standards set/forth in Subsection 2631[c] and [3][3] of Article 3 of this subchapter/

[7]

(6) Construction details of the underground storage tank and any auxiliary equipment including, but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures/ backfill/ spill and overfill prevention equipment, interior lining, wrapping/ and cathodic corrosion protection methods (if applicable).

(7) A description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection.

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(8) As an addendum to the permit application form, provide a scaled diagram or design or as-built drawing which indicates the location of the underground storage tank (underground storage tank, piping, auxiliary equipment) with respect to buildings or other landmarks.

(9) The description of the proposed monitoring program including, but not limited to, the following where applicable:

(A) Visual/inspection procedures;

(B) Underground storage tank testing release detection methods or inspection procedures;

(C) Inventory reconciliation including gauging and reconciliation methods;

(D) Soils sampling locations and methods and analysis procedures Pipeline leak detection methods;

(E) Vadose zone sampling locations and methods and analysis procedures;

(F) Ground water well(s) locations construction and completion development methods, sampling, and analysis procedures; and

[G] Frequency and sensitivity of any monitoring method sensing instrument or analytical method/

(10) A list of all the substances which previously, currently, or are proposed to be stored in the underground storage tank or tanks.

(11) Documentation to show compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

[11]

(12) If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the underground storage tank.

[12]

(13) The permit application must be signed by:

(A) The owner of the underground storage tank or a duly authorized representative of such owner;

(B) If the tank is owned by a corporation, partnership, or public agency, the application must be signed by:

(i) A principal executive officer at the level of vice-president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the underground storage tank(s) are located;

(ii) A general partner proprietor; or

(iii) A principal executive officer, ranking elected official, or authorized representative of a public agency.

(b) The owner or operator must inform the local agency of any changes to the information provided in paragraph (a) of this section within 30 days unless required to obtain approval before making the change.

(b)

(c) The permit application form provided by the Board shall be used and shall be accompanied by the local government and state surcharge fees *set by the local agency.*

(d) The local agency shall provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286, 25287

2712. Permit Conditions

[a] As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within 30 days after any changes in the usage of any underground storage tank, including:

[1] The storage of new hazardous substances;

[2] Changes in monitoring procedures; or

[3] The replacement or repair of all or part of any underground storage tank;

[(b)]

(a) As a condition of any permit to operate an underground storage tank, the [permittee] owner or operator shall [report to the local agency any] comply with the reporting and recording requirements for unauthorized releases [occurrences] as defined in Article 2 of this [subchapter] within the time frame specified in [Subsections 2652 (b) and (c)] of Article 5 of this [s]ubchapter.

[(c)]

(b) Written records of all monitoring and maintenance performed shall be maintained on-site or off-site at a readily available location, [by the operator] if approved by the local agency, for a period of at least 3 years. [from the date the monitoring was performed.] These records must be made available, upon request within 36 hours, to the local agency or the Board. [The local agency may require the submittal of the monitoring records or a summary at a frequency that they may establish.] The written records of all monitoring performed in the past 3 years [shall] be shown to the local agency [regional Board, State Board] or duly authorized representative upon demand during any site inspection. Monitoring records shall include:

(1) The date and time of all monitoring or sampling;

(2) Monitoring equipment calibration and maintenance records;

(3) The results of any visual observations;

(4) The results of all sample analysis performed in the laboratory or in the field, including laboratory data sheets and analysis used;

(5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and

(6) The results of inventory readings and reconciliations.

[(d)]

(c) A permit to operate issued by the local agency shall be effective for 5 years. The permit shall show the state underground storage tank identification number(s) for which the permit was issued. Before a local agency [shall not] issues a new permit or renewal to operate an underground storage tank [until the local agency shall] inspect[s] the underground storage tank and determine[s] that the underground storage tank complies with the provisions of these regulations. [The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.]

[(e) The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks.]

[(f)]

(d) Permits may be transferred to new underground storage tank owners if: (1) the new underground storage tank owner does not change any conditions of the permit, (2) the transfer is registered with the local agency within 30 days of the change in ownership, and (3) [any necessary modifications are made to the information in the initial permit application due to the change in ownership.] State permit application forms are completed to show the changes. Transferred permits shall expire and be renewed on the original expiration date. A local agency may review, modify, or terminate the permit to operate the underground storage tank upon receiving [the] an ownership transfer request.

[g]

(e) The local agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected by the local agency or a special inspector within the prior 3 years and the inspection ~~revealed~~ indicated that the underground storage tank complied with Article 3 or 4 of this ~~sub~~chapter, as applicable, and with all existing permit conditions. The inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code. If the inspection ~~revealed~~ indicated noncompliance then the local agency must verify by a follow-up inspection that all required corrections have been implemented before renewing the permit.

[h]

(f) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall implement the corrections specified in the inspection report ~~file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance~~ and comply with either Article 3 or Article 4 of this ~~sub~~chapter, as appropriate, ~~or~~ and the permit conditions. ~~This plan and time schedule~~ The corrective action shall ~~also implement~~ include all of the recommendations ~~of~~ made by the local agency or special inspector. The local agency may ~~except~~ waive the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that ~~the~~ failure to implement the recommendation will not cause an unauthorized release.

(g) The local agency shall take appropriate enforcement action pursuant to Section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring

requirements specified in Article 3 or 4 of this chapter or the reporting requirements specified in Article 5 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284, 25285, 25286, 25288, 25289, 25293, 25294
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2713. ~~Annual~~ Transmittal of Unauthorized Release Reports

(a) ~~The local agency shall notify the State Board of any changes in permits as defined in Subsections (a) or (f) of Section 2712 of this Article or any unauthorized releases as defined in Article 1 of this Subchapter annually on the State Board's annual report form or other methods determined by the State Board.//This information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.~~

Each local agency shall transmit unauthorized release information, submitted by the owner or operator pursuant to Article 5 of this chapter to the appropriate Regional Board.

(b) Local agencies shall transmit unauthorized release update report information, submitted by the owner or operator pursuant to Section 2712 of this Article, to the appropriate Regional Board for sites where they are overseeing cleanup. Local agencies shall transmit this unauthorized release update information on a quarterly schedule established by the Board.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286.

2714. Trade Secret Provisions

(a) Any person providing information in an application for a permit to operate an *underground storage tank or for renewal of the permit or application for a* categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:

(1) Which portions of the information submitted are believed to be trade secrets;

(2) How long this information should be treated as confidential;

(3) Measures that have been taken to protect this information as confidential; and

(4) A discussion of why this information is ~~a~~ subject to trade secret/ *protection, including references to statutory and case law as* appropriate.

(b) If the local agency, the ~~State~~ Board, or the regional board determines that a request for ~~confidentiality~~ trade secret protection is clearly valid, the material shall be given trade secret protection as discussed in ~~subsection~~ Paragraph (f) of this section.

(c) If the local agency, the ~~State~~ Board, or the regional board determines that the request for ~~confidentiality~~ trade secret protection is clearly frivolous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency, the ~~State~~ Board, or the regional board is instructed otherwise by a court within 10 working days of the date of the letter.

(d) If the validity of the request for ~~confidentiality~~ trade secret protection is unclear, the local agency, the ~~State~~ Board, or the regional board will inform the person claiming trade secrecy that the burden is on him to justify the claim. The applicant will be given a fixed period of time to submit such additional information as the local agency, the ~~State~~ Board, or the regional board may request. The local agency, the ~~State~~ Board, or the regional board shall then evaluate the request on the basis of the definition of "trade secrets" contained in the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code and issue its decision. If the local agency, the ~~State~~ Board, or the regional board determines that the information is not a trade secret, it shall act in accordance with ~~subsection~~ Paragraph (c) of this section.

(e) All information received for which trade secrecy status is requested shall be treated as confidential as discussed in ~~subsection~~ Paragraph (f) of this section until a final determination is made.

(f) Information which has been found to be confidential or ~~regarding which a final determination has not been made~~ Which is being reviewed to determine if confidentiality should exist, shall be immediately filed in a separate "confidential" file. If a document or portion of a document is filed in a confidential file, a notation should be filed with the ~~remainder of the~~/file document indicating that further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized representatives of the applicant or other governmental agencies ~~only~~ in connection with the ~~State~~ Board's, the regional board's, or the local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code or Division 7 of the Water Code.

(h) Nothing contained herein shall limit an applicant's right to prevent disclosure of information pursuant to other provisions of law.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25290

APPENDIX

TABLE OF CONTENTS

APPENDIX I, TABLE A

SUGGESTED SPECIFICATIONS

APPLICABLE TO REGULATORY REQUIREMENTS

2635

SECTION NUMBER		
2631(d)(6)	ASTM D-814,	"Rubber Property - Vapor Transmission of Volatile Liquids"
2631(d)(6)(A)	ASTM D-543,	"Resistance of Plastics to Chemical Reagents"
2631(d)(6)(B)	ASTM D-751,	"Coated Fabrics"
	ASTM D-1004	"Initial Tear Resistance of Plastic Film and Sheeting"
2631(d)(6)(C)	ASTM D-2240,	"Rubber Property--Durometer Hardness"
2631(d)(6)(D)	ASTM D-2684,	"Determining Permeability of Thermoplastic Containers"
	ASTM D-413	"Rubber Property - Adhesion to Flexible Substrate"
	ASTM D-471	Rubber Property - Effect of Liquids"

	ASTM D-638	"Tensile Properties of Plastics"
	ASTM E-96	"Water Vapor Transmission of Materials"
	ASME,	"ASME Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code"
	UL-58,	"Steel Underground Tanks for Flammable and Combustible Liquids"
	UL-1316,	"Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products"
	UL-1746,	"External Corrosion Protection Systems for Steel Underground Storage Tanks"
	UL-3615-1977,	"Standard for Reinforced Plastic Underground Storage Tanks for Petroleum Products"
	ASTM G-1-72,	"Standard Recommended Practice for Preparing, Cleaning, and Evaluating Test Specimens"
	ASTM G-31-72,	"Standard Recommended Practice for Laboratory Immersion Corrosion Testing of Metals"

	ULC CAN4-5603-M85	"Standard for Steel Underground Tanks for Flammable and Combustible Liquids"
	ULC CAN4-5603-1M85	"Standard for Galvanic Corrosion Protection Systems for Steel Underground Storage Tanks for Flammable and Combustible Liquids"
	ASTM D-4021-86	"Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks"
	NACE TM-10-69	"Laboratory Corrosion Testing of Metals for the Processing Industry"
	NACE TM-02-70,	"Method for Conducting Laboratory Controlled Velocity Laboratory Corrosion Tests"
2661(f)	API 1631	"Interior Lining of Underground Storage Tanks"
2663(b)	NFPA 329-1987	"Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquid"

ORGANIZATIONS THAT ADOPT VOLUNTARY CONSENSUS STANDARDS

ANSI	American National Standards Institute 1430 Broadway New York, NY 10018 (212) 354-3300
API	American Petroleum Institute 1220 L Street, N.W. Washington, D.C. 20005 (202) 682-8000
ASME	The American Society of Mechanical Engineers 1916 Race Street Philadelphia, PA 10017 (215) 299-5400
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103 (215) 299-5400
NACE	National Association of Corrosion Engineers 1440 South Creek Drive Katy, TX 77450 (713) 492-0535

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269
(617) 328-9290

NSF National Sanitation Foundation
3475 Plymouth Road
Post Office Box 1468
Ann Arbor, MI 48106
(313) 769-8010

UL Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

ULC Underwriters Laboratories of Canada, Inc.
7 Crouse Road
Scarborough, Ontario

"Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule", EPA Fed. Reg. Vol. 49, No. 209, October 26, 1984.

"Manual of Methods for the Chemical Analysis of Water and Wastes", EPA 600/4-79-020, March 1979.

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities", EPA 530/SW-611, August 1977.

"Soil Sampling Quality Assurance User's Guide", EPA 600/4-84-043, May 1984.

"Hazardous Waste Land Treatment", EPA SW-874, April 1983.

"Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", EPA 600/4-82-057, July 1982.

"Handbook for Sampling and Sample Preservation of Water and Wastewater", EPA 600/4-82-029, September 1982.

"Manual of Analytical Quality Control for Pesticides and Related Compounds in Human and Environmental Samples", EPA 600/2-81-059, April 1981.

"EPA Test Methods for Evaluating Solid Waste - Physical/Chemical Method", SW-846

"Manual of Analytical Methods for the Analysis of Pesticides in Human and Environmental Samples", EPA 600/8-80-038.

"Standard Methods for the Examination of Water and Wastewater", American Public Health Assoc., American Water Works Assoc., Water Pollution Control Federation, 15th Edition, 1981.

"Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency", Supplement to the Fifteenth Edition of *Standard Methods for the Examination of Water and Wastewater*, 1981.

"Guidelines on Sampling and Statistical Methodologies for Ambient Pesticide Monitoring", Federal Working Group on Pest Management, October 1974.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Part 31, Water", 1982.

"Methods for Determination of Inorganic Substances in Water and Fluvial Sediments of the U.S. Geological Survey"

"Methods for Analysis of Organic Substances in Water", U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A3, 1972.

"Criteria for Identification of Hazardous and Extremely Hazardous Wastes", Article 11, Chapter 30, Division 4, Title 22.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Parts 23-25, Petroleum Products and Lubricants, 1981".

"Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)"

APPENDIX II.

SUCTION PIPING MONITORING

Suction pipelines shall be monitored for the presence of air in the pipeline by observing the suction pumping system for the following indicators:

(1) The cost/quantity display wheels on the meter suction pump skip or jump during operation;

(2) The suction pump is operating, but no motor vehicle fuel is being pumped;

(3) The suction pump seems to overspeed when first turned on and then slows down as it begins to pump liquid; and

(4) A rattling sound in the suction pump and erratic flow indicating an air and liquid mixture.

If any of the above indicators are observed during testing of the suction piping system, the pipeline check valve should be inspected to determine if it is seated tightly. If there is any doubt following the inspection that the valve seats tightly, it should be repaired, replaced, or sealed off. Then the suction pumping test should be repeated and, if air is still entering the suction line, it is assumed that the pipe is leaking underground.

Appendix III.

Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in Section 25292(b)(5) of Chapter 6.7 of Division 20 of the Health and Safety Code (see below). This section refers to Section 2641(c)(7) of the California Code of Regulations as it existed on August 13, 1985 as follows:

2641(c)(7) Underground Storage Tank Gauging and Testing:

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + or - 5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

(B) The underground storage tank gauging shall be performed according to the following specifications:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals.

(ii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred. The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

H&SC 25292(b) (5) For monitoring underground storage tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:

(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985.

(B) If the tank has a capacity of more than 5,000 gallons, the tank shall be monitored pursuant to the methods for all other tanks specified in this subdivison.

APPENDIX IV

Examples of

Quantitative Release Detection Methods for Tanks

Detection Method	Performance Standards
Automatic Tank Gauging (Monthly)	Subsection 2643 (c)(1)
Tank Integrity Test (Annually) and Inventory Reconciliation (Monthly)	Subsection 2643 (c)(2)(A) and Subsection 2643 (c)(2)(B)
Manual Tank Gauging (Weekly)	Section 2645

Examples of

Quantitative Release Detection Methods for Pressure Piping

Detection Method	Performance Standards
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Monthly)	Subsection 2643 (d)(1) and Subsection 2643 (d)(2)
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Automatic Line Leak Detector (Hourly) and Line Tightness Test (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Electronic Line Leak Detector (Hourly)	Subsection 2643(d)(3)

Examples of

Quantitative Release Detection Methods for Suction Piping

Line Tightness Test (Triannually)	Section 2643 (e)
and	
Daily Monitoring	Appendix II

Examples of

Qualitative Release Detection Methods

Vapor Monitoring	Section 2644 (b) and 2647
or	
Ground Water Monitoring	Sections 2644 (c) and 2648

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APPENDIX V

EVALUATION PROCEDURE FOR LEAK DETECTION EQUIPMENT

Leak detection equipment can be evaluated for performance in accordance with one of the following three evaluation procedures:

1. *EPA Standard Test Procedures*

EPA has developed a series of standard test procedures that cover most of the methods commonly used for underground storage tank leak detection. These include:

a. "Standard Test Procedures for Evaluating Leak Detection Methods: Volumetric Tank Tightness Testing Methods"

b. "Standard Test Procedures for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods"

c. "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems"

d. "Standard Test Procedures for Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods"

e. "Standard Test Procedures for Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors"

f. "Standard Test Procedures for Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors"

g. "Standard Test Procedures for Evaluating Leak Detection Methods: Pipeline Leak Detection Systems"

Each test procedure provides an explanation of how to conduct the test, how to perform the required calculations, and how to report the results. The results from each standard test procedure provide the information needed by tank owners and operators to determine if the method meets the regulatory requirements.

EPA standard test procedures must be conducted by an independent third party under contract to the manufacturer in order to prove compliance with the regulations. Independent third-parties may include consulting firms, test laboratories, not-for-profit research organizations, or educational institutions with no organizational conflict of interest. In general, evaluations are more likely to be fair and objective the greater the independence of the evaluating organization.

2. National Consensus Code or Standard

A second way for a manufacturer to prove the performance of leak detection equipment is to have an independent third party evaluate the system following a national voluntary consensus code or standard developed by a nationally recognized association (e.g., ASTM, ASME, ANSI, etc.). Throughout the technical regulations for underground storage tanks, EPA has relied on national voluntary consensus codes to help tank owners decide which brands of equipment are acceptable. Although no such code presently exists for evaluating leak detection equipment, one is under consideration by the ASTM D-34 subcommittee. Guidelines for developing these standards may be found in the U.S. Department of Commerce "Procedures for the Development of Voluntary Product Standards" (FR, Vol. 51, No. 118, June 20, 1986) and OMB Circular No. A-119.

3. Alternative Test Procedures Deemed Equivalent to EPA's

In some cases, a specific leak detection method may not be adequately covered by EPA standard test procedures or a national voluntary consensus code, or the manufacturer may have access to data that makes it easier to evaluate the system another way. Manufacturers who wish to have their equipment tested according to a different plan (or who have already done so) must have that plan developed or reviewed by a nationally recognized association or independent third-party testing laboratory (e.g. Factory Mutual, National Sanitation Foundation, Underwriters Laboratory, etc.). The results should include an accreditation by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as the EPA standard test procedure. In general, this will require the following:

a. The evaluation tests the system both under the no-leak condition and an induced-leak condition with an induced leak rate as close as possible to (or smaller than) the performance standard. In the case of tank testing, this will mean testing under both 0.0 gallon per hour and 0.10 gallon per hour leak rates. In the case of ground water monitoring, this will mean testing with 0.0 and 0.125 inch of free product.

b. The evaluation should test the system under at least as many different environmental conditions as the corresponding EPA test procedure.

c. The conditions under which the system is evaluated should be at least as rigorous as the conditions specified in the corresponding EPA test procedure. For example, in the case of volumetric tank tightness testing, the test should include a temperature difference between the delivered product and that already present in the tank, as well as the deformation caused by filling the tank prior to testing.

d. The evaluation results must contain the same information and should be reported following the same general format as the EPA standard results sheet.

e. The evaluation of the leak detection method must include physical testing of a full-sized version of the leak detection equipment, and a full disclosure must be made of the experimental conditions under which: (1) the evaluation was performed, and (2) the method was recommended for use. An evaluation based solely on theory or calculation is not sufficient.

APPENDIX VI

CERTIFICATE OF TANK AND PIPE INSTALLATIONS

The owner or operator can use the form below to certify that the UST and piping were installed properly.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
UNDERGROUND STORAGE TANK INSTALLATION
CERTIFICATION OF COMPLIANCE

FORM C

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM

I. SITE LOCATION

STREET _____

CITY _____ COUNTY _____

II. INSTALLATION (mark all that apply):

- ☐ The installer has been certified by the tank and piping manufactures.
- ☐ The installation has been inspected and certified by a registered professional engineer.
- ☐ The installation has been inspected and approved by the implementing agency.
- ☐ All work listed on the manufacturer's installation checklist has been completed.
- ☐ The installation Contractor has been certified or licensed by the Contractors State License Board.
- ☐ Another method was used as allowed by the implementing agency. (Please specify.)

_____

III. OATH I certify that the information provided is true to the best of my belief and knowledge.

Tank Owner/Agent _____ Date _____

Print Name _____ Phone ( ) _____

Address _____

LOCAL AGENCY USE ONLY

STATE TANK I.D. #	COUNTY #	JURISDICTION #	FACILITY #	TANK #
	☐☐	☐☐☐	☐☐☐☐☐	☐☐☐☐☐

FORM C (3/91) THIS FORM MUST BE ACCOMPANIED BY PERMIT APPLICATION FORMS A & B UNLESS THEY HAVE BEEN FILED PREVIOUSLY FormsC6

II. Notice of disapproval of regulations

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

a. Notice received from OAL on June 21, 1991 and attached text of regulations
with handwritten notations by OAL attorney.

EMERGENCY DISAPPROVED

STATE OF CALIFORNIA—OFFICE OF ADMINISTRATIVE LAW

NOTICE PUBLICATION/REGULATIONS SUBMISSION (See instructions on reverse)

For use by Secretary of State only

STD. 400 (REV. 7-90)

OAL FILE NUMBERS	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER	PREVIOUS REGULATORY ACTION NUMBER
			91-0605-01E	

For use by Office of Administrative Law (OAL) only

1991 JUN -5 AM 10: 20

OFFICE OF ADMINISTRATIVE LAW

NOTICE | REGULATIONS

AGENCY: State Water Resources Control Board

AGENCY FILE NUMBER (If any):

A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE | TITLE(S) | FIRST SECTION AFFECTED | 2. REQUESTED PUBLICATION DATE

3. NOTICE TYPE ☐ Notice re Proposed Regulatory Action ☐ Other | 4. AGENCY CONTACT PERSON | TELEPHONE NUMBER

OAL USE ONLY — ACTION ON PROPOSED NOTICE: ☐ Approved as Submitted ☐ Approved as Modified ☐ Disapproved/ Withdrawn | NOTICE REGISTER NUMBER | PUBLICATION DATE

B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics-related)

SECTIONS AFFECTED — ADOPT: Sections 2610 through 2714 | AMEND | REPEAL

TITLE(S): 23

2. TYPE OF FILING

☐ Regular Rulemaking (Gov. Code, § 11346) ☐ Resubmittal ☐ Changes Without Regulatory Effect (Cal. Code Regs., title 1, § 100) ☒ Emergency (Gov. Code, § 11346.1(b))

☐ Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Government Code §§ 11346.4 - 11346.8 prior to, or within 120 days of, the effective date of the regulations listed above.

☐ Print Only ☐ Other (specify)

3. DATE(S) OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §§ 44 and 45)

May 16, 1991

4. EFFECTIVE DATE OF REGULATORY CHANGES (Gov. Code § 11346.2)

☐ Effective 30th day after filing with Secretary of State ☐ Effective on filing with Secretary of State ☐ Effective other (Specify)

5. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

☐ Department of Finance (Form STD. 399) ☐ Fair Political Practices Commission ☐ State Fire Marshal

☐ Other (Specify)

6. CONTACT PERSON: David Holtry | TELEPHONE NUMBER: (916) 739-2421

7. *I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.*

SIGNATURE OF AGENCY HEAD OR DESIGNEE: Walt Pettit | DATE: 5/31/91

TYPED NAME AND TITLE OF SIGNATORY: Walt Pettit, Executive Director

STATE OF CALIFORNIA
NOTICE PUBLICATION/REGULATIONS SUBMISSION
STD. 400 (REV. 7-90) (REVERSE)

INSTRUCTIONS FOR PUBLICATION OF NOTICE AND SUBMISSION OF REGULATIONS

The revised form STD. 400 replaces form STD. 398 (REV. 3/85) (Face Sheet for Filing Notice of Proposed Regulatory Action in the California Administrative Notice Register) and form STD. 400 (REV. 8/85) (Face Sheet for Filing Administrative Regulations with the Office of Administrative Law). Use the new form STD. 400 for submitting notices for publication and regulations for Office of Administrative Law (OAL) review.

ALL FILINGS

Enter the agency name and agency file number, if any.

NOTICES

Complete Part A when submitting a notice to OAL for publication in the California Regulatory Notice Register. Submit two (2) copies of the STD. 400 with four (4) copies of the notice and, if a notice of proposed regulatory action, one copy each of the complete text of the regulations, the statement of reasons and a list of small businesses to whom the notice will be mailed, if any. If the notice is approved, OAL will return the STD. 400 with a copy of the notice and will check "Approved as Submitted" or "Approved as Modified" and place a number in the box marked "Notice File Number." If the notice is disapproved or withdrawn, that will also be indicated in the space marked "Action on Proposed Notice." Please submit a new form STD. 400 when resubmitting the notice.

REGULATIONS

When submitting regulations to OAL for review, fill out STD. 400, Part B. Use the form that was previously submitted with the notice of proposed regulatory action which contains the "Notice File Number" assigned, or, if a new STD. 400 is used, please include the previously assigned number in the box marked "Notice File Number." In filling out Part B, be sure to complete the certification including the date signed, the title and typed name of the signatory. The following must be submitted when filing regulations: seven (7) copies of the regulations with a copy of the STD. 400 attached to the front of each (one copy must bear an original signature on the certification) and the complete rulemaking file with index and sworn statement. (See Government Code § 11347.3 for rulemaking file contents.)

RESUBMITTAL OF DISAPPROVED OR WITHDRAWN REGULATIONS

When resubmitting previously disapproved or withdrawn regulations to OAL for review, use a new STD. 400 and fill out Part B, including the signed certification. Enter the number of the previously disapproved or withdrawn filing in the box marked "Previous Regulatory Action Number" at the top of the form and submit seven (7) copies of the regulation to OAL with a copy of the STD. 400 attached to the front of each (one copy must bear an original signature on the certification). Be sure to include an index, sworn statement, and (if returned to the agency) the complete rulemaking file. (See Government Code §§ 11349.4 and 11347.3 for more specific requirements.)

EMERGENCY REGULATIONS

Fill out only Part B, including the signed certification, and submit seven (7) copies of the regulations with a copy of the STD. 400 attached to the front of each (one copy must bear an original signature on the certification). (See Government Code § 11346.1 for other requirements.)

NOTICE FOLLOWING EMERGENCY ACTION

When submitting a notice of proposed regulatory action after an emergency filing, use a new STD. 400 and complete Part A only. Please insert the OAL number for the original emergency filing in the box marked "Emergency Number" at the top of the form. OAL will return the STD. 400 with the notice upon approval or disapproval. If the notice is disapproved, please fill out a new form when resubmitting for publication.

CERTIFICATE OF COMPLIANCE

When filing the certificate of compliance for emergency regulations, fill out Part B on the form that was previously submitted with the notice, or, if a new STD. 400 is used, please include the previously assigned numbers in the boxes marked "Notice File Number" and "Emergency Number." The materials indicated in these instructions for "REGULATIONS" must also be submitted.

EMERGENCY REGULATIONS - READOPTION

When submitting previously approved emergency regulations for readoption, use a new STD. 400 and fill out Part B, including the signed certification, and enter the OAL number of the original emergency filing in the box marked "Emergency Number" at the top of the form.

If you have any questions regarding this form or the procedure for filing notices or submitting regulations to OAL for review, please contact the Office of Administrative Law at (916) 323-6225 or ATSS 473-6225.

APR 12 1991

PROPOSED AMENDMENTS. (NEW TEXT IS UNDERLINED; DELETED TEXT IS CROSSED OUT.)

CALIFORNIA CODE OF REGULATIONS

TITLE 23 WATERS

DIVISION 3 WATER RESOURCES CONTROL BOARD

~~CHAPTER~~ CHAPTER 16 UNDERGROUND STORAGE TANK REGULATIONS

Article ~~1~~ 1. Definition of Terms

~~2620~~

2610. Definitions/Applicability of Definitions

(a) Unless the context clearly requires otherwise, the terms used in this ~~chapter~~ chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by Section 2611 of this article.

(b) Except as otherwise specifically provided herein, the following terms are defined in Section 25281 of Chapter 6.7 of Division 20 of the Health and Safety Code:

Automatic line leak detector

Board

Department

Facility

Federal act

Hazardous substance

Local agency

Operator

Owner

Person

Pipe

Primary containment

Product-tight

Release

Secondary containment

Single-walled

Special inspector

Storage/store

SWEEPS

Tank

Tank integrity test

Tank tester

Unauthorized release

Underground storage tank

Underground tank system/tank system

Authority: Health and Safety Code (H&SC) 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25291

~~2621~~

2611. Additional Definitions

Unless the context clearly requires otherwise, the following definitions shall apply to terms used in this ~~chapter~~ chapter.

"Coatings expert" means a person who, by reason of thorough training, knowledge and experience in the coating of metal surfaces, is qualified to engage in the practice of internal tank lining inspections. This person must be independent of any lining manufacturer or applicator and have no financial interest in the tank or tanks being monitored.

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Corrosion specialist" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on metal underground storage tanks and associated piping. The term includes only persons who have been certified as being qualified by the National Association of Corrosion Engineers or registered professional engineers who have certification or licensing that requires education and experience in corrosion control of underground storage tanks and associated piping.

"Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. The term includes only persons who have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

"Double walled tank" means a container with two complete shells which provide both primary and secondary containment///The outer shell must provide structural support and must be constructed primarily of noncorrosive materials including, but not limited to, concrete, steel, and plastic.

"Emergency containment" means a containment system for accidental spills which are infrequent and unpredictable.

"Existing underground storage tank" means any underground storage tank that was installed prior to January 1, 1984. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid).

"Farm tank" means any one or combination of tanks located on a farm that holds no more than 1,100 gallons of motor vehicle fuel which is used primarily for agricultural purposes and is not held for resale.

"First ground water" means the uppermost saturated horizon encountered in a bore hole.

"Ground water" means subsurface water which will flow into a well.

"Heating oil tank" means a tank located on a farm or at a personal residence which holds no more than 1,100 gallons of home heating oil which is used consumptively at the premises where the tank is located.

"Holiday" when used with respect to underground storage tank coating or cladding means a pinhole or void in a protective coating or cladding.

"Hydraulic lift tank" means an underground storage tank which holds hydraulic fluid to operate lifts, elevators, and other similar equipment.

"Independent testing organization" means an organization which tests products or systems for compliance with voluntary consensus standards. To be acceptable as an independent testing organization, the organization must not be owned or controlled by any client, industrial organization, or any other person or institution with a financial interest in the product or system being tested. For an organization to certify, list, or label products or systems in compliance with voluntary consensus standards, it shall maintain formal periodic inspections of production of products or systems to ensure that a listed, certified or labeled product or system continues to meet the appropriate standards.

"Independent third party" means independent testing organizations, consulting firms, test laboratories, not-for-profit research organizations and educational institutions with no financial interest in the matters under consideration. An independent third party must not be owned or controlled by any client, industrial organization, or any other institution with a financial interest in the matter under consideration.

"Integral secondary containment" means a secondary containment system manufactured as part of the underground storage tank.

JAN 17 1991

"Interstitial space" means the space between the primary and secondary containment systems.

"Liquid asphalt tank" means an underground storage tank which contains steam-refined asphalts.

"Liquefied petroleum gas tank" means an underground storage tank which contains normal butane, isobutane, propane, or butylene (including isomers) or mixtures composed predominantly thereof in liquid or gaseous state having a vapor pressure in excess of 40 pounds per square inch absolute at a temperature of 100 degrees of Fahrenheit.

"Manufacturer" means any business which produces any item discussed in these regulations.

"Membrane liner" means any membrane sheet material ~~fabricated into~~ used in a ~~system for~~ secondary containment system. A membrane liner must be compatible with the substance stored.

"Membrane liner fabricator" means ~~the~~ any company which converts a membrane ~~the~~ liner ~~membrane sheeting~~ into a system for secondary containment.

"Membrane manufacturer" means ~~the~~ any company which processes the constituent polymers into membrane sheeting from which the membrane liner is fabricated into a system for secondary containment.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn.

Motor vehicle fuel tank" means an underground storage tank that contains a product which is intended to be used primarily to fuel motor vehicles or fuel an engines.

"Nationally recognized independent testing organization" means any one of the following organizations, or other organizations approved by the Board:

American National Standards Institute (ANSI)
American Society of Mechanical Engineers (ASME)
American Society for Testing and Materials (ASTM)
National Association for Corrosion Engineers (NACE)
National Sanitation Foundation (NSF)
Underwriters Laboratories (UL)
Underwriters Laboratories of Canada, Inc. (ULC)

"New underground storage tank" means any underground storage tank subject to this §§chapter which is installed after the effective date of this §§chapter as amended or which complies with the requirements of Article 3 of this §§chapter as amended; or which was installed after January 1, 1984, and before the effective date of this §§chapter as amended pursuant to a permit issued by the local agency implementing the provisions of Chapter 6.7 of Division 20 of the Health and Safety Code relating to new underground storage tanks.

"Non-volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and consideration of circumstances and physical phenomena internal or external to the tank.

"Perennial ground water" means ground water that is present throughout the year.

"Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute.

"Pipeline leak detector" means a continuous monitoring system for underground piping capable of detecting at any pressure a leak rate equivalent to a specified leak rate and pressure with a probability of detection of 95 percent or greater and a probability of false alarm of 5 percent or less.

"Probability of detection" means the likelihood, expressed as a percentage, that a test method will correctly identify a leaking underground storage tank.

"Probability of false alarm" means the likelihood, expressed as a percentage, that a test method will incorrectly identify a "tight" tank as a leaking underground storage tank.

"Qualitative release detection method" means a method which detects the presence of a hazardous substance or suitable tracer outside the underground storage tank being tested.

"Quantitative release detection method" means a method which determines the integrity of an underground storage tank by measuring a release rate or by determining if a release exceeds a specific rate.

"Release detection method" means a method used to determine whether a release of a hazardous substance has occurred from an underground tank system into the environment or into the interstitial space between an underground tank system and its secondary containment.

"Septic tank" means an underground storage tank designed and used to receive and process biological waste and sewage.

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground ~~storage~~ tank system volume, including the volume of any connected piping, is below the ground surface or enclosed below earthen materials.

"Sump", "pit", "pond", or "lagoon" means a depression in the ground which lacks independent structural integrity and depends on surrounding earthen material for structural support of fluid containment.

"Tank integrity test" means a test method that can ascertain the physical integrity of an underground storage tank. The term includes only test methods which are able to detect a leak of 0.1 gph with a probability of detection of at least 95 percent and a probability of false alarm of 5 percent or less. The test method may be either volumetric or non-volumetric in nature. A leak rate is reported using a volumetric test method, whereas, a non-volumetric test method reports whether or not a substance or physical phenomenon is detected which may indicate the presence of a leak.

"Unauthorized release" as defined in Chapter 6.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, use, or disposal.

"Volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and comparison of tank volume.

"Voluntary consensus standards" means standards that are developed after persons with a direct and material interest have had a right to express a viewpoint and, if dissatisfied, to appeal at any point. Voluntary consensus standards shall be developed after everyone with a direct and material interest has had a right to express a viewpoint and, if dissatisfied, to appeal at any point (a partial list of the organizations that adopt voluntary consensus standards are shown in Appendix I, Table B).

"Wastewater treatment tank" means an underground storage tank located inside a public or private wastewater treatment facility. The term includes untreated wastewater holding tanks, oil water separators, clarifiers, sludge holding tanks, filtration tanks, and clarified water tanks that do not continuously contain hazardous substances.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25283

Code of Federal Regulations, Title 40, Part 280.10 (40 CFR 280.10)

Article 1/ 2 General Provisions

2620/

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure/ of underground storage tanks; requirements/ and specify variance request procedures.

(b) Persons who own one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. In Section 2611 of this article/ If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to/ monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable the permit/. and properly close the underground storage tank as required by the permit/ The owner shall remain responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

(c) Counties shall implement the regulations in this subchapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits [operating permit(s)] to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this subchapter within its boundaries in accordance with Section 25283 of the Health and Safety Code. Local agencies A permit may be shall issued an operating permit for each underground storage tank, for several underground storage tanks, or for a each facility, as appropriate, within their jurisdiction.

(d) All Owners of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this subchapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this subchapter. In addition, All owners and/or operators of underground storage tanks subject to this subchapter must comply with the release reporting requirements of Article 5 of this subchapter, the repair and upgrade requirements of Article 6 of this subchapter, the closure requirements of Article 7 of this subchapter, and the underground storage tank operating permit application requirements of Article 10 of this subchapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25283, 25284, 25299.1, 25299.3, 40 CFR 280

2621. Exemptions

(a) The owners of term "underground storage tank"s that meet does not include any of the following conditions shall be exempt from the provisions of this subchapter:

(1) A farm tank.

(2) A heating oil tank.

(3) Hydraulic lift tanks with a capacity of less than 110 gallons.

(4) A liquefied petroleum gas tank.

(5) A liquid asphalt tank.

(6) A septic tank.

(7) A sump, pit, pond, or lagoon.

(8) A wastewater treatment tank except a tank which is part of an underground storage tank system.

(9) A pipeline located in a refinery or in an oil field.

(10) Tanks and catch basins designed for storm water collection.

(11) Tanks containing radioactive material that are regulated by other federal, state or local agency such as; spent fuel pools, radioactive waste storage tanks, and similar tanks.

(12) An emergency containment tank kept emptied to receive accidental spills and approved for such use by the appropriate local agency.

(13) Drums located in basements which contain 55 gallons or less of material.

(I) Underground storage tanks that are located within the jurisdictions/of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, implements the requirements of Subchapter 6.7 of Division 20 of the Health and Safety Code pertaining to construction and monitoring standards for new and existing underground storage tanks provided that:

(A) The ordinance as it may be amended continues to meet at a minimum the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code; and

(B) The county or city issues permits for underground storage tanks pursuant to the ordinance

(2)

(14) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the underground storage tank has been issued a hazardous waste facilities permit for the underground storage tank by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

b) Sumps which are a part of a monitoring system as required under Article 3 of this subchapter are considered part of the secondary containment or leak detection system of the primary containment and are required to meet the appropriate construction criteria.

c) The owner of a farm or heating oil tank or any other tank which is excluded from regulation as an underground storage tank by virtue of its use shall, within 120 days after change in or discontinuance of the use which provided the exclusion:

(1) Apply for and promptly obtain a valid operating permit; or

(2) Close the tank in accordance with Article 7 of these regulations.

Resumption of a use which justifies an exclusion from regulation within 120 days after change or discontinuation of the use which provided the exclusion will reactivate the exclusion.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299.1

40 CFR 280.10, 280.12

Article 3. New Underground Storage Tank Construction and Monitoring Standards

2630. General Applicability of Article

~~(a) This article contains statewide minimum standards for the construction, installation, and monitoring of new underground storage tanks that contain hazardous substances.~~

(a) The standards in this article apply to owners of new underground storage tanks. Underground storage tanks installed between January 1, 1984 and the effective date of these amendments may be deemed to be in compliance with the standards in this article if they were installed in accordance with Federal and State standards that existed at the time of installation. However, the requirements in Article 6 must be complied with if applicable.

(b) Sections 2631 and 2632 of this article specify construction and monitoring standards for all new underground storage tanks. New underground storage tanks that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 of this article in lieu of those specified in Sections 2631 and 2632 of this article. ~~respectively~~ However, if the construction standards in Section 2633 of this article are used, then the monitoring standards of Section 2634 of this article ~~must~~ shall also be used.

(c) All new underground storage tanks, piping, and secondary containment systems ~~must~~ shall comply with Section 2635 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2631. Construction Standards for New Underground Storage Tanks

(a) ~~Primary and secondary levels of containment shall be required for~~ All new underground storage tanks including associated piping used for the storage of hazardous substances shall be required to have primary and secondary levels of containment. Secondary containment can be manufactured as an integral part of the primary containment or it can be constructed as a separate containment system. ~~as defined in Article (2) of this subchapter.~~

(b) All primary containment including any integral secondary containment system, shall be ~~prototyped~~ designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components such as special accessories, fittings, coatings or linings, monitoring systems and level controls used to form the underground storage tank system shall bear an approval from an independent testing organization. This requirement shall become effective on July 1, 1991 for underground storage tanks, January 1, 1992 for piping, and July 1, 1992 for all other components. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the following minimum information:

(1) Engineering standard used;

(2) Nominal diameter in feet;

(3) Nominal capacity in gallons;

(4) Degree of Secondary Containment;

(5) Useable capacity in gallons;

(6) Design pressure in psig;

(7) Maximum operating temperature in degrees Fahrenheit;

(8) Construction materials;

(9) Year manufactured; and

(10) Manufacturer.

(c) A primary containment system with or without an integral secondary containment system shall have wear plates (striker plates) installed, center to center, below all accessible openings. The plates shall be made of steel or other appropriate material if steel is not compatible with the hazardous substance stored. The width of the plate shall be at least eight inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 1/8 inch and those made of other materials shall be of sufficient thickness to provide equivalent protection. The plate, if under 1/4 inch thick, shall be rolled to the contours of the underground storage tank and all plates shall be bonded or tack welded in place.

[(f)]

(d) A secondary containment system such as vaults, shall be designed and constructed according to an engineering specification approved by a state licensed engineer or according to a nationally recognized industry code or engineering standard. The engineering specification shall include the construction procedures. [All secondary containers shall be constructed of

Materials used to construct the secondary containment system shall have sufficient thickness, density, and corrosion resistance [composition] to prevent structural weakening or damage to [of] the secondary containment system as a result of contact with any released hazardous substance. [and shall be capable of containing any unauthorized release of the hazardous substance/stored within the primary container(s) for at least the maximum anticipated period sufficient to allow detection and removal of the unauthorized release.] The following requirements apply to all secondary containment systems:

[(d) If a hazardous substance has come into contact with the secondary container and either additional primary containers exist within the secondary container or the leaking primary container is repaired as specified in Article 6 of this subchapter or closed as specified in Article 7 of this subchapter and replaced by a new primary container, the owner shall demonstrate to the satisfaction of the local agency that the requirements of subsection (c) of this section are still achievable or replace the secondary container.]

[(e)]

(1) The secondary containment system shall be constructed [have the ability] to provide at least [contain] the following volumes:

[(1)]

(A) [At least] 100 percent of the usable capacity of [volume of] the primary containment system where only one primary container is within the secondary containment system.

[(2)]

(B) In the case of multiple primary containers within a single secondary containment system, the secondary containment system shall be large enough to contain 150 percent of the volume of the

largest primary container ~~placed in~~ within it, or 10 percent of the ~~aggregate internal volume of all primary containers in~~ within the secondary containe~~d~~ment/ system whichever is greater. When all primary containers are completely enclosed within the secondary containment system, the restrictions of this subparagraph do not apply.

~~(f)~~

(2) ~~If the secondary containe~~ment system ~~is open to rainfall, then~~ it shall be constructed ~~big~~ to accommodate the volume of precipitation which could enter the secondary containe~~d~~ment system during a 24-hour, ~~100~~ 25-year storm ~~in addition to the volume of hazardous substance storage~~ required in Paragraph ~~Subsection (e)~~ (d)(1) of this section.

~~(g)~~

(3) If backfill material is placed in the secondary containment system, the volumetric requirements for the pore space ~~of a granular material placed in the secondary container as backfill for the primary container~~ shall be equal to ~~or greater than that~~ the requirement in Paragraph ~~Subsection 264.1(e)~~ (d)(1) of this section. The available pore space in the secondary containe~~d~~ment system backfill shall be determined using ~~appropriate~~ standard engineering methods ~~and safety factors, and shall consider~~ The specific retention and specific yield of the backfill material, the location of any ~~the~~ primary container within the secondary containe~~d~~ment, and the proposed method of operation for the secondary containe~~d~~ment system shall be considered in determining the available pore space.

~~(h)~~

(4) The secondary containe~~d~~ment system shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any

~~precipitation/ subsurface infiltration of hazardous substance released from the primary container~~ liquid within the system.

~~(i)~~

(5) The floor of the secondary containe~~d~~ment system shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and be covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism. ~~If this access casing is within a secured facility, the requirements for a locked cap may be waived by the local agency.~~ The casing shall have sufficient thickness ~~be thick enough~~ to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.

~~(j)~~

(6) ~~Systems for~~ Secondary containment systems utilizing membrane liners shall be certified by an independent testing organization. A membrane liner shall not contain any primary nutrients or food-like substances attractive to rodents and must meet the requirements in Table 3.1 after 30-day immersion in the stored hazardous substance ~~following requirements~~.

Table 3.1

Standards for Membrane Liners

Property	Test Method		Requirement
	Unsupported Liners	Supported Liners	
(A) Tensile strength	ASTM 638	ASTM D751	
Tensile strength at yield		Procedure B (Cut Strip Method)	>300 lbs/in of width
Tensile strength at break			>200 lbs/in of width
(B) Permeability	ASTM E96	ASTM E96	<0.65 gram/meter^2-hr
(C) Seam strength	ASTM D413	ASTM D751	= Parent material
(D) Solubility	ASTM D471	ASTM D471	<0.10% by weight
(E) Puncture		FTMS 101B Method 2031	350 lbs.
	FTMS 101 Method 2065		80 lbs.
(F) Tear		ASTM D751	125 lbs.
	ASTM D1004 DIEC		50 lbs.

[1] The membrane liner shall have a permeability factor of 0.25 ounces per square foot per 24 hours or less.///Such permeability shall constitute the maximum rate of transport over time of the hazardous substance proposed for storage.///Permeability shall be evaluated according to accepted engineering practices for materials testing.///Some acceptable methods for determining the permeability are provided in Appendix I of this subchapter.

[2] The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(c) of this section only if the liner material meets the following standards.///The material properties specified in these standards shall be determined using accepted engineering practices for materials testing.///Some acceptable methods for determining these properties are provided in Appendix I of this subchapter.

[A] The volume swell after a 24-hour period of immersion in the stored hazardous substance shall not exceed 3 percent of the original liner membrane material thickness.

[B] The maximum change in elongation or of the liner membrane material at break after 24 hours of immersion in the stored hazardous substance shall not exceed 2 percent of the original elongation.

[C] The liner membrane material shore A hardness (brittleness) after 24 hours of immersion in the hazardous substance shall be within 8 percent of the original hardness;

[D] For a containment test, the rate of transport through the liner membrane material of the hazardous substance after a period of 24 hours shall not exceed 6 percent by weight of the hazardous substance being tested;//The limited height for the test shall be no greater than that expected in actual site conditions;

[E] The rate of solubility of the liner membrane material in the hazardous substance for a period of 24 hours shall not exceed 01 percent by weight of the section of liner being tested;

[3] The liner seam strength shall be equal to the tensile strength of the parent material when tested in accordance with accepted engineering practices for materials testing;//Some acceptable methods for determining the liner seam strength are provided in Appendix I of this subchapter;

[K]

(7) The A membrane liner, if used, shall be installed under the direct supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.

[I]

(8) The excavation base and walls for the synthetic a membrane liner shall be prepared to the membrane liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects or protrusions.

[M]

e) Laminated, coated, or clad materials shall be considered a single walled and shall do not be construed to fulfill the requirements of both primary and secondary containment.

[N]

f) Double walled Underground storage tanks with integral secondary containment systems, which satisfy the construction standards of Section Paragraph 2631(b) of this section and [C] of this article shall be considered to fulfill the volumetric requirements for secondary containment specified in Section 2631[c] Paragraph (d)(1) of this article of this section.

[O] The design of double walled underground storage tanks shall allow for monitoring of the annular space;

[P] Visually the annular space of a double-walled underground storage tank as a monitoring method shall not be allowed unless a strike plate or other approved devices used to protect underground storage tank are located directly under the monitoring opening;

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[d]

(g) The double walled Underground storage tanks with secondary containment systems shall be so designed and installed that any loss of hazardous substance from the primary containment will drain to a specific location within the annular space[as required] to be detected by an interstitial monitoring device or method.

(h) An underground storage tank which is designed with an integral secondary containment system must provide 100 percent secondary containment unless it is equipped with the overfill prevention system in accordance with Section 2635(c)(2)(C) of this Article. In this case the top portion of the tank, no greater than two feet wide along the length of the tank, may be single-walled.

[r] Any special accessories[fitting] coating or lining not inherent within the initial design of the primary container or double-walled underground storage tank shall be approved by a nationally recognized[independent] testing organization or a demonstration of integrity with the primary container of double-walled underground storage tank shall be required by the local agency[

[s] All primary containers and double-walled underground storage tanks subject to flotation shall be weighted or anchored using methods specified by the manufacturer or[if none exist] best engineering judgment]

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291
40 CFR 280.20

2632. Monitoring Requirements, Initial Responses, Standards and Response Plan for New Underground Storage Tanks

(a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.

(b) The owners or operators of underground storage tanks subject to this section shall implement a monitoring program that is approved by the local agency and required specified in the underground storage tank operating permit. The program shall utilize one or more of the methods interstitial space monitoring as described in Subsection Paragraph (c) of this section and shall address include the items listed in Subsection [d] Paragraph (e) of this section.

(c) Monitoring of the interstitial space between the primary and secondary containers shall utilize either visual monitoring of the primary containment system container as described in Paragraph Subsection (1) of this subsection or one or more of the methods listed in Paragraph Subsection (2) of this subsection.

(1) A program which relies on the visual monitoring of the primary containment system container shall incorporate all of the following:

(A) Provisions that All exterior surfaces of the underground storage tanks and the surface of the floor directly beneath the underground storage tanks shall be capable of being monitored by direct viewing.

(B) Visual inspections shall be performed daily, except on weekends and recognized state and/or federal holidays. ~~and~~ Inspections may be more frequent if required by the local agency~~/~~ or ~~T~~the local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tanks are very infrequent. In these instances, the minimum frequency of visual inspection shall be no less than once per week and the inspection schedule shall take into account the minimum anticipated time during which the secondary containment system is capable of containing any unauthorized release and the maximum length of time any hazardous substance released from the primary ~~container~~ containment system will remain observable on the surface of the secondary containment system. The inspection schedule shall be ~~established~~ such that inspections will occur on a routine basis when the liquid level in the underground storage tanks is at its highest. The inspection frequency shall be ~~selected~~ such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tanks between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tanks.

(C) The ~~recordation of the~~ liquid level in the underground storage tanks shall be recorded at the time of each inspection.

(D) The observation of any liquid ~~on the exterior of or the surface immediately~~ around or beneath an ~~the~~ underground storage tank ~~being visually monitored~~ shall ~~cause~~ require the owner or operator to undertake ~~implement all of a portion of~~ the following action or actions:~~/ The applicable actions and their timing shall be based on the site-specific situation/ be intended to determine if the observed liquid constitutes an unauthorized release/ and shall be included in the permit/~~

(i) Conduct an appropriate laboratory or field analysis of the observed liquid. If the liquid is a hazardous substance, the owner or operator shall proceed with the actions indicated in Paragraphs (ii) and (iii) below.

(ii) Conduct an appropriate tank integrity test; ~~testing of the underground storage tank/ utilizing the//procedures described in Section 2643 of Article 4 of this Subchapter;~~ and

(iii) If a leak is confirmed, immediately remove ~~Removal of~~ all hazardous substances from the underground storage tank and the secondary containment system. ~~[As specified in Subsection (d) of this Section]~~/

(2) A program which relies on detecting the hazardous substance in the interstitial space ~~between the primary and secondary container~~ shall utilize one or more of the methods provided in Table 3.12 of this article. The following requirements shall apply when appropriate:

(A) The interstitial space of the underground storage tank shall be monitored using a continuous monitoring system.

(B) The continuous monitoring ~~device~~ system shall be connected to an audible and visual alarm system as approved by the local agency.

~~(B) Manual monitoring shall be performed daily except on weekends and recognized state and/or federal holidays///Manual monitoring may be required on a more frequent basis as specified by the local agency~~

(C) For methods of monitoring where the presence of the hazardous Substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, ~~(i.e., liquid level measurements)~~, the monitoring program shall specify the proposed method(s) for determining the presence or absence of the hazardous substance in the interstitial space if the indirect methods indicate a possible unauthorized release.

(d) Underground piping with secondary containment shall be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system, and

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of

detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with Section 2643(g)of these regulations.

(3) Other monitoring methods may be used in lieu of the requirement in Paragraph 2 above if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section. A continuous monitoring system, in Paragraph 1 above, which also shuts down the pump in addition to activating the alarm system, satisfies the automatic line leak detector requirement in Paragraph 2.

~~(d)~~

(e) All monitoring programs shall include the following:

(1) A written routine monitoring procedure which establishes ~~(including)~~ when ~~applicable~~:

(A) The frequency of performing the monitoring method;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) ~~from~~ which where the monitoring will be performed;

(D) The name(s) ~~of~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) ~~and~~ The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(2) A response plan developed by the permit applicant which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary containment system within the shortest possible time and no longer than the time consistent with the ability of the secondary containment system to contain the hazardous substance, but not more than 30 days. The response plan shall include, but is not limited to, the following:

(A) A description of the proposed methods and equipment to be used for removing and properly disposing of any the hazardous substances, including the location and availability of the required equipment if not permanently on-site, and an equipment maintenance schedule for the equipment located on-site.

(B) The name(s) of and title(s) of the person(s) responsible for authorizing any the work to be performed/ necessary under the response plan.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.43

Table 3.12

Methods of Monitoring for Hazardous Substances in the Secondary Container Interstitial Space of an Underground Storage Tank System

Condition of the Secondary System [1]	Type of Substance Stored	Methods of Monitoring: Liquid Level Indicator [2]	Hazardous Substances Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X		X
Wet	Nonvolatile	X	X		X

[1] A "dry" system does not contain liquid within the secondary containment during normal operating conditions while a "wet" system does.

[2] Includes/ continuously operated mechanical or electronic devices/. manual determinations using mechanical/ electronic/ or visual readings/ or visual determinations to detect the presence of any liquid in dry systems or a change in liquid levels in wet/ systems/

[3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.

[4] Primarily used for double-walled underground storage tanks to Detects changes in pressure or vacuum in the interstitial space of an underground storage tank with secondary containment. Between primary and secondary container/// The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized independent testing organization/

2633. Alternate Construction Requirements Standards for New Motor Vehicle Fuel Underground Storage Tanks

(a) This section specifies alternate construction standards requirements for new underground storage tanks which only contain motor vehicle fuels. This section may be utilized by permit applicants Owners of new underground storage tanks which only contain motor vehicle fuels may comply with this section in lieu of Section 2631 of this article. If this section is used in lieu of Section 2631 of this article, then the monitoring standards requirements specified in Section 2634 shall be used in lieu of those specified in Section 2632 of this article.

(b) Primary containers Underground storage tanks used for the underground storage of motor vehicle fuel and constructed under this section shall be composed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with fiberglass reinforced plastic. and These tanks shall be installed in conjunction with the leak interception and detection system decribed in Paragraphs Subsections (d) through (g) of this section. The primary containment system shall meet the requirements described in Sections 2631(b) and 2631(c) of this article.

(c) Primary containers Underground storage tanks used for the underground storage of motor vehicle fuel and that are constructed of materials other than those specified in Subsection Paragraph 2633(b) of this article above shall be subject to the requirements of Sections 2631 and 2632 of this article.

d) The permit applicant owner of an underground storage tank shall demonstrate to the satisfaction of the local agency that the leak interception and detection system used achieves the criteria of Section 2631(c) of this article/ is capable of detecting a release before it can escape from the containment system.

e) The floor of any leak interception and detection system shall be constructed on a firm base and sloped to a collection sump. Methods of construction for the leak interception and detection system for utilizing membrane liners shall comply with the requirement of Section 2631(d)(6) of this article. Be considered to have satisfied the//requirements of 2631(c) if/ and only if/ the liner material meets the//following standards/

(1) The membrane liner material shall have the permeability factor specified in Subsection 2631(d)(1) of this article as tested against//ASTM Reference Fuel B/

~~(2) The membrane liner material shall be suitable for containment of the motor vehicle fuel in that such material shall meet the criteria set forth in Subsections 2631(d)(2)(A) through (E) of this article as tested against the motor vehicle fuel to be stored considering its variability or against ASTM Reference Fuel B/~~

(3) The membrane liner shall meet the requirements set forth in Subsection 2631(d)(3) of this article/

[(A) The liner has been installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator;]

[(B) The excavation base and walls which will come into contact with the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions;]

(f) Access casings shall be installed in the collection sump of any secondary containment system with backfill in the interstitial space. The access casing shall be:

(1) Designed and installed to allow the liquid to flow into the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

(3) Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donate, capture, nor mask constituents for which analyses will be made;

(4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

(5) Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system;

(6) Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism; and

(7) Capable of meeting requirements of local well permitting agencies.

[(f)]

(g) The leak interception and detection system [and the response plan shall preclude] prevent the contact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water elevation. Proof that the leak interception and detection system [and response plan] will protect ground water must be demonstrated by the [permit applicant] owner of the underground storage tank to the satisfaction of the local agency. [The requirement for this demonstration may be waived by the local agency for underground storage tanks that comply with the requirements of subsections (c), (f), and (g) of Section 2631 of this article.] The demonstration shall, at a minimum, consider the following: In determining whether the leak interception and detection system will adequately protect ground water, the local agency shall consider, at a minimum, the following:

(1) The containment volume of the leak interception and detection system;

(2) The maximum leak which could go undetected under the monitoring method required in Section 2634 of this article and the maximum period during which the leak will occur go undetected;

(3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system;

(4) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(5) The nature of the unsaturated soils under the leak interception and detection system and their ability to adsorb contaminants or to allow vertical movement of contaminants;

(6) The effect of any precipitation or subsurface infiltration on the movement of any leak of hazardous substance and the available volume of the leak interception and detection system; and

(7) The nature and timing of the response plan required by Section 2634 of this article to clean up the any hazardous substances which have been discharged from the primary container.

(d) Pressurized piping systems that are connected to an underground storage tank that is be constructed pursuant to the requirements of this section/and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system requirements of this section/ provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code/

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2634. Monitoring and Response Plan Standards for New Motor Vehicle Fuel Underground Storage Tanks Constructed Pursuant to Section 2633

(a) Motor vehicle fuel underground storage tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of Section 2633 of this article shall be monitored according to the requirements of the//appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code///In addition/ as follows:

(1) Monitoring of The leak interception and detection system shall be monitored pursuant to subsections Paragraph (b)/ (c)/ and (d) of this section;

(2) The motor vehicle fuel inventory shall be reconciled according to the performance requirements in Section 2646; and

(3) All underground pressurized piping shall be tested in accordance with the requirements of Section 2635(b) and monitored in accordance with the requirements of Section 2632(d).

[b] The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a collection sump.

[c] Access casing[s] shall be installed in the collection sump.///The access casing shall be:

[1] Capable of allowing any liquid that may be moving along the upper surface of the leak interception and detection system to enter the casing;

[2] Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

[3] Constructed of materials that will not be structurally weakened by the stored hazardous substances nor dangerous vapors nor mask constituents for which analyses will be made;

[4] Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

[5] Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system; and

[6] Extended to the ground surface and covered with a locked watertight cap or enclosed in a surface security structure that will protect the access casing[s] from entry of surface water, accidental damage, unauthorized access, and vandalism.///A secure facility will satisfy the requirements for protection against unauthorized access and vandalism.

[d]

(b) Monitoring of programs for the leak interception and detection system shall incorporate all of the following must meet the following requirements:

(1) The use of a leak interception and detection system shall detect any unauthorized release of the motor vehicle fuel collected utilizing one or more of the monitoring methods for volatile hazardous substances provided in Table 3.2 of this article. The following requirements shall apply as appropriate:

(A) Continuous monitoring devices systems shall be connected to an audible and visual alarm system approved by the local agency. or

(B) Manual monitoring, if used, shall be performed daily, except on weekends and recognized state and/or federal holidays, but no less than once in any 72 hour period. Manual monitoring may be required on a more frequently basis as specified by the local agency. Based on an assessment of the availability volume of the leak interception and detection system and the accuracy of the proposed monitoring method.///Approved methods of monitoring the leak interception and detection system include liquid level indicators, hazardous substance sensors, and vapor monitors as specified for volatile hazardous substances in Table 3.1 of this article.

(2) A written routine monitoring procedure ~~which includes~~ shall be prepared and shall establish:

(A) The frequency of performing the monitoring ~~method~~;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) ~~from which~~ where the monitoring will be performed;

(D) The name(s) ~~of~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(3) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, (i.e., liquid level measurements), the monitoring program shall specify the proposed

method(s) for determining the presence or absence of the hazardous substance if the indirect method indicates ~~the possible presence~~ a possible unauthorized release of ~~the~~ motor vehicle fuel.

~~(c)~~

(c) A response plan for an unauthorized release shall be developed prior to the underground tank system being put into service. ~~For any leak interception and detection system which does not meet the volumetric requirements of Subsection 2631(e), (f), and (g) of this Article///For those underground storage tanks~~ If the leak interception and detection system~~s~~ that meets the volumetric requirement of Subsection 2631(d) of this article, the local agency shall require the owner to develop a plan pursuant to the requirements of Subsection 2632~~(d)~~(e)(2) of this article. If the leak interception and detection system does not meet the volumetric requirements of Subsections 2631(d) the response plan shall consider the following:

(1) The volume of the leak interception and detection system in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection system must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked material;

(3) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system and their ability to absorb contaminants or to allow ~~vertical~~ movement of contaminants; and

(5) The methods and scheduling for removing all of the hazardous substances which may have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sump.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, ~~25299/1~~ 25291, 25292
40 CFR 280.41

2635. ~~General Construction Standards~~ Installation and Testing Requirements for New Underground Storage Tanks and Piping

~~(a) The following subsections shall apply to all primary and secondary containers including leak interception and detection systems.~~

(a)

~~(b)~~ Primary ~~containers~~ and ~~double walled underground storage tanks~~ secondary containment systems shall be designed, and constructed, tested, and certified to comply, as applicable, with all of the following requirements:

~~(1) Cathodically protected steel underground storage tanks; steel underground storage tanks clad with glass fiberreinforced plastic; and glass fiber plastic underground storage tanks shall be fabricated and designed to standards developed by a nationally recognized independent testing organization or be listed by the testing organization.// Applicable design standards shall include, but are not limited to, those provided in Appendix I of this subchapter.~~

~~(2) Underground storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chemical compatibility with the hazardous substances to be stored using recognized engineering practices for materials testing.// Some acceptable methods for determining durability and chemical compatibility with the hazardous substances are provided in Appendix I of this subchapter.~~

(3) Except for steel underground storage tanks, a wear plate (striker plate) shall be centered under all accessible openings of the underground storage tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material resistant to the stored hazardous substance. The width of the plate shall be at least 9 inches wide and have an area of 1 square foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.053 inch (11/35 mm), and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of the underground storage tank and bonded or seam welded in place.

(B)

(1) All underground storage tanks shall be tested, at the factory before being put into service transported, in accordance with the applicable sections of the industry code or engineering standard under which they were are built. The ASME code stamp or Listing Mark of Underwriters Laboratories, Incorporated (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement.

(A) Single-walled primary containers of steel and double-walled underground storage tanks constructed of steel which are not clad with glass fiber reinforced plastic shall be protected by a properly installed, maintained, and monitored cathodic protection system. Selection of the type of protection to be employed shall be based on a certification

listing by a nationally recognized independent testing organization or the judgment of a registered corrosion engineer or a National Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion history of the area. Underground storage tanks with listed corrosion resistant materials, non-metallic glass fiber reinforced plastic coatings, composites, or equivalent systems shall be holiday tested immediately prior to installation.

The protection system shall be inspected under the direction of a registered corrosion engineer or NACE corrosion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the the system designer, but no less than semi-annually. Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

(2) The outer surface of underground storage tanks constructed of steel shall be protected from corrosion as follows, except that primary containment systems installed in a secondary containment system and not backfilled do not need cathodic protection:

(A) Field installed cathodic protection systems shall be designed and certified as adequate by a corrosion specialist. The cathodic protection systems shall be tested under the direction of a cathodic protection tester within six months of installation and at least every three years thereafter. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed in accordance with voluntary consensus standards. Impressed current

cathodic protection systems shall also be inspected to ensure that they are in proper working order not less than every 60 days by a cathodic protection tester.

(B) Underground storage tanks protected with glass fiber reinforced plastic coatings, composites, or equivalent non-metallic exterior coatings or coverings, including coating/sacrificial anode systems, shall be tested at the job site using an electric resistance holiday detector. All holidays detected shall be repaired and checked by a factory authorized repair service prior to tank installation. During and after tank installation, care shall be taken to prevent damage to the protective coating or cladding. Preengineered corrosion protection systems with sacrificial anodes shall be checked once every three years in accordance with the manufacturers instructions.

(7)

(3) Before being installation, covered, enclosed, or placed in use, all the underground storage tank and piping shall be tested for tightness at the installation site in accordance with the manufacturer's written guidelines. If there are no guidelines, the primary and secondary containment shall be tested for tightness hydrostatically or with air pressure at not less than 3 pounds per square-inch (20.68 k Pa) and not more than 5 pounds per square-inch (34.48 k Pa). In lieu of the above, an equivalent differential pressure test, expressed in inches of mercury vacuum, in the interstitial space of the secondary containment is acceptable. Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system or pneumatically tested to 110 percent of the maximum anticipated pressure of the system but not less than 5 pounds per square inch (34.48 kPa) gauge at the highest point of the system.///This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least ten minutes.///In lieu of the above a test using acceptable engineering practices shall be used.///Some acceptable test methods for testing pipelines are provided in Appendix I of this subchapter.///Underground storage tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing. The pressure (or vacuum in the interstitial space) shall be maintained for a minimum of 30 minutes to determine if the tank is tight. If a tank fails the test, as evidenced by soap bubbles, or water droplets, installation shall be suspended until the tank is replaced, remanufactured or repaired by a factory authorized repair service and passes a retest.

(4) All other secondary containment systems shall pass a post-installation test which meets the approval of the local agency.

(5) After being installed but before the underground storage tank is placed in service it shall receive a tank integrity test to ensure that no damage occurred during installation. The tank integrity test is not required if the tank is equipped with an interstitial monitor certified to meet the performance standards of a "tank integrity test", as defined in Section 2611, in accordance with Section 2643 (g) of these regulations.

(5)

(6) All primary containers and double-walled underground storage tanks shall be installed according to a code of practice developed in accordance with voluntary consensus standards and the manufacturer's written installation instructions. (Recommendations of, if no written recommendations exist, best engineering practice). The owner or operator shall certify that the underground storage tank is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(7) All underground storage tanks subject to flotation shall be anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

(8) When required by the local agency, all underground storage tanks shall be equipped with an overflow protection system which includes the following elements:

(A) A spill containment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment;(A level sensing device that continuously monitors and indicates the liquid level in the underground storage tank and either (B) or (C) of this subsection or both;

(B) An audible/visual alarm system triggered by a liquid level sensor to alert the operator of an impending overfill condition; or

(C) An automatic shutoff device that stops the flow of product being delivered to the underground storage tank when the underground storage tank is full;

(9) The overflow protection system required in subsection (8)(B) of this section shall be waived for underground storage tanks containing motor vehicle fuels in which a spill containment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment and:

(A) Both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank;

(B) The available capacity of the underground storage tank to be filled is determined immediately prior to filling to be at least 10% percent of the volume of the entire tank compartment to be delivered or the volume of the entire tank compartment to be delivered plus 200 gallons, whichever is less, as determined by underground storage tank gauging; or

(C) The hazardous substance being delivered can be metered into the underground storage tank and the available underground storage tank capacity is determined immediately prior to filling.

(b) All underground piping, if in direct contact with backfill material, shall be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection must meet the requirements in Paragraph 2635(a)(2) of this section. Underground piping shall meet all of the following requirements:

(1) All underground primary piping in contact with hazardous substances under normal operating conditions shall be installed inside a secondary containment system which may be a secondary pipe, or a lined trench. All secondary containment systems shall be sloped so that all releases will flow to a collection sump located at the low point of the underground piping.

(2) Primary piping and secondary containment systems shall be installed in accordance with a code of practice developed in accordance with voluntary consensus standards. The owner or operator shall certify that the piping is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(3) If a lined trench system is used as part of a secondary containment system, it shall be designed and constructed according to a code of practice or engineering standard approved by a state licensed engineer. The following requirements shall also apply:

(A) All trench materials shall be compatible with the substance stored and certified by an independent testing organization for their compatibility or adequacy of the trench design, construction, and application.

(B) The trench shall be covered and shall be capable of supporting any expected vehicular traffic.

(4) All new primary piping and secondary containment systems shall be tested for tightness after the installation in accordance with the manufacturer's guidelines. As a minimum, the primary piping shall be tested for tightness hydrostatically at 150 percent of designed and operating pressure or pneumatically at 110 percent of design pressure. If the calculated test pressure is less than 40 psi, 40 psi shall be used as the test pressure. The pressure shall be maintained for a minimum of 30 minutes and all joints shall be soap tested. A failed test, as evidenced by presence of bubbles, shall require appropriate repairs and a retest. If there are no manufacturer's guidelines, secondary containment systems shall be tested using an applicable method specified in an industry code or engineering standard.

(5) Underground pressurized piping which meets all of the following requirements satisfies the annual tightness test requirement specified in Subsection 25291(f) of the Health and Safety Code:

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(A) The secondary containment system is equipped with a continuous monitoring system. The leak detection device can be located at the pump sump if the piping slopes back to this point.

(B) A continuous monitoring system is connected to an audible and visual alarm system and the pumping system.

(C) A continuous monitor shuts down the pump and activates the alarm system when a release is detected.

(D) The pumping system shuts down automatically if the continuous monitoring system fails or is disconnected. This requirement does not apply to emergency generator system if the site is manned.

(6) A secondary containment system is not required for vent piping or tank riser piping provided the primary containment system is equipped with an overfill prevention system meeting the requirements specified in Paragraphs (c)(2)(B)or(C) of this section. Vapor recovery piping is also exempt from the secondary containment requirement if designed not to carry product back to the underground storage tank.

(7) Secondary containment is not required for suction piping if such piping is designed and installed in accordance with the following requirements:

(A) The below-grade piping operates at less than atmospheric pressure (suction);

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) No valves or pumps are installed in the suction line below-grade;

(D) An inspection method is provided which readily demonstrates compliance with Paragraphs (A)-(C) immediately above.

) All underground storage tanks shall be equipped with a spill container and an overfill prevention system as follows:

(1) The spill container shall collect any hazardous substances spilled during tank filling operations to prevent the hazardous substance from entering the subsurface environment. The spill container shall meet the following requirements:

(A) The exterior wall must be protected from galvanic corrosion if made of metal.

(B) It must have at least a minimum capacity of five gallons (19 liters).

(C) It must have a spring-loaded drain valve which allows drainage of the collected spill into the primary container.

(2) The overfill prevention system shall not allow for manual override and shall meet one of the following requirements. It must either:

(A) Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or

(B) Restrict delivery of flow to the tank at least 30 minutes prior to tank overfill, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity, and provide audible alarm sounds at least five minutes prior to overfill; or

(C) Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent full.

(3) Owners and operators must use care to prevent releases due to spilling or overfilling. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The local agency may waive the requirement for overfill prevention equipment where the tank inlet exists in an observable area and the spill container is adequate to collect any overfill.

~~(c)~~

(d) Secondary containment systems including leak interception and detection systems installed pursuant to Section 2633 of this article shall comply with all of the following:

(1) The secondary containment system shall, at a minimum, encompass the area within the system of vertical planes surrounding the exterior of the primary containment ~~unit~~ system. If backfill is placed between the primary and secondary containment systems, ~~the~~ an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment system over the vertical distance between the primary and secondary containment systems. The secondary containment system shall extend an additional distance beyond the vertical planes described above equal to the radius of lateral spread plus 1 foot.

(2) The secondary containment system must be capable of precluding the inflow of the highest ground water anticipated into the interstitial space during the life of the underground storage tank ~~into the space between the primary and secondary containers~~.

(3) If the interstitial space ~~between the primary and secondary containers~~ is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary containment system.

(4) The secondary containment system and any with backfill material between the primary and secondary containers shall be designed and constructed to promote gravity drainage of a an unauthorized leak release of hazardous substances from any part of the primary containment system to the monitoring location(s).

(5) Two or more primary containment systems shall not utilize the same secondary containment system if the primary containment systems store materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of any part of a primary or secondary containment system.

(6) Drainage of liquid from within a secondary containment system shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged into the environment. The liquid shall be analyzed to determine the presence of any of the hazardous substance(s) stored in the primary containment systems prior to initial removal, and monthly thereafter, for any continuous discharge (removal) to determine the appropriate method for final disposal. The liquid shall be sampled and analyzed immediately upon any indication of an unauthorized release from the primary containment system.

(7) For primary containment systems installed completely beneath the ground surface, the original excavation for the secondary containment system shall have a water-tight cover which extends at least 1 foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to

drainways leading away from the excavation. Access openings shall be constructed as water-tight as practical. Double-walled underground storage tanks Primary containment systems with integral secondary containment and open vaults are exempt from the requirements of this paragraph.

(8) The actual location and orientation of the underground storage tanks and appurtenant piping systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.

~~(e) Owners or their agents shall certify (see Appendix VI) that the installation~~ of underground storage tanks and piping meets all of the following conditions:

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

(2) The installer has been certified or licensed by the Contractors State License Board;

(3) The underground storage tank, any primary piping, and any secondary containment system, was installed according to applicable voluntary consensus standards and any manufacturer's written installation instructions.

(4) All work listed in the manufacturer's installation checklist has been completed; and

(5) The installation has been inspected and approved by the local agency, or, if required by the local agency, inspected and certified by a registered professional engineer who has education and experience with underground storage tank system installations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299

40 CFR 280.20, 280.40 thru 280.45

Article 4. Existing Underground Storage Tank Monitoring Standards

Requirements

2640. General Applicability of Article

(a) All owners of existing underground storage tanks subject to this subchapter shall implement a visual monitoring or alternative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code/ A local agency shall not issue a permit unless the monitoring system is capable of/ determining the containment ability of the underground storage tank and/ detecting any active or future unauthorized release///If the monitoring technique(s) selected is designed to detect the presence of the stored hazardous substance outside of the underground storage tank/ then tests must be made to determine if the hazardous substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank///The failure to implement an approved monitoring system shall be cause for the local agency to require//closure of the underground storage tank pursuant to Article 7 of this subchapter/

(b) The objectives of the monitoring program for existing underground storage tanks are to detect unauthorized releases before ground water is affected/ Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses/

(c) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2642 of this article for all visible portions of the underground storage tank///If the entire underground storage tank is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored/ that portion of the underground storage tank shall be monitored visually/ Visual monitoring that can only be implemented during a portion of the year shall be utilized during those portions of the year///If visual monitoring cannot be implemented for the entire underground storage tank throughout the entire year/ then one of the monitoring alternatives specified in Section 2641 of this article shall also be implemented///The monitoring alternative shall be operative during those times when visual monitoring is not feasible or for those portions of the underground storage tank which are not susceptible to visual monitoring/

(d) All owners of existing underground storage tanks subject to this subchapter/ who are not able to implement visual monitoring as specified in Section 2642 of this article/ shall implement one of the monitoring alternatives specified in Section 2641 of this article/

(e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums///Local agencies/ as a condition of approval of a specific monitoring alternative/ shall to comply with the objectives specified in Subsection (b)/of this section require additional or more frequent monitoring if necessary/ and Subsection (d) of Section 2641 of this article/

[f] Local agencies shall reduce the monitoring frequency for visual monitoring or a monitoring alternative listed in Section 2642 of this article situations where environmental conditions make it impracticable/ physically impossible/ or like threatening to complete the required monitoring/

(a) The requirements of this article apply to owners of nonexempt existing underground storage tanks.

(b) The requirements of this article apply during the following periods:

(1) Any operating period, including any period that the tank is empty as a result of withdrawal of all stored material prior to the planned input of additional hazardous substances;

(2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted; and

(3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to Section 2671(b), for a temporary closure period.

(c) This article shall not apply to underground storage tanks that are installed and monitored in accordance with Sections 2631 and 2632 or 2633 and 2634 of Article 3 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.40 - 280.42

2643/ Monitoring Alternatives

[a] All owners of existing underground storage tanks subject to this subchapter who cannot implement visual monitoring for the entire underground storage tank during all periods of the year shall implement/ by the statutory deadline/ one of the monitoring alternatives specified in Subsection (c) of this section/

[b] The local agency shall base its review of the proposed monitoring alternative on the specifications contained in Subsection (d) of this section and shall approve the monitoring alternative if it finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection (b) of Section 2640 of this article///If the proposed monitoring alternative cannot be approved/ then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of another monitoring alternative/

[c] The optional monitoring alternatives are as follows/

[1] Underground Storage Tank Testing///This monitoring alternative shall/ at a minimum/ utilize the procedures specified in Section 2643 of this article and shall be performed monthly at a minimum/

(2) Vapor or Other Vadose Zone Monitoring and Ground Water Monitoring with Soil Sampling.

(A) This monitoring alternative shall at a minimum, include vadose zone monitoring, ground water monitoring, and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.

(B) The vadose zone monitoring program shall be designed and installed pursuant to the procedures specified in Sections 2648 and 2648 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a minimum.

(C) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and monitored semi-annually, at a minimum. The minimum number of wells shall be as specified on Table 4.1 of this section for Alternative 2. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. The local agency shall require laboratory verification at periodic intervals if visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.

(D) The soil sampling and analysis shall be performed as specified in Sections 2648 and 2648 of this article. Samples shall be taken from all boring(s) and well(s) installed.

(3) Vadose Zone Monitoring, Soil Sampling, and Underground Storage Tank Testing.

(A) This monitoring alternative shall at a minimum, include vadose zone monitoring and analysis of soil samples taken from the boring(s) made for vadose zone monitoring and tank testing. This alternative shall not be approved if first ground water, including intermittent, perched ground water, is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic, municipal, agricultural, or industrial supply) or is hydraulically connected to ground and surface waters which has actual or potential beneficial uses.

(B) The determination that first ground water is significantly deeper than 100 feet shall be by an onsite boring(s) constructed according to the specifications in subsection (D) of Section 2648 of this article or by evidence based on an evaluation pursuant to subsection 2648(D) of this article.

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(C) Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Sections 2648 and 2648 of this Article. Vadose zone vapor monitoring shall be performed either continuously or daily at a minimum. Other vadose zone monitoring shall be performed weekly at a minimum.

(D) The soil sampling and analysis shall be performed as specified in Sections 2648 and 2648 of this Article. Samples shall be taken from all borings installed.

(E) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this Article.

(4) Ground Water and Soil Testing.

(A) This monitoring alternative shall at a minimum utilize ground water sampling and analysis of soil samples taken at the time of well installation. This alternative shall not be approved if any of the following conditions exist.

(i) First ground water, including intermittent, perched ground water, is normally greater than 20 feet deep.

(ii) The ground water proposed for monitoring has actual or potential beneficial uses including municipal, industrial or agricultural supply, or is hydraulically connected to ground or surface water which has actual or potential beneficial uses, or

(iii) The ground water monitoring well can not be perforated within the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest perennial ground water level. The 10-foot requirement may be waived by the local agency if ground water is less than 10 feet deep.

If the local agency waives this requirement, the well must still be capable of being perforated above the highest anticipated ground water level.

(B) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this Article and shall be monitored monthly at a minimum. The minimum number of monitoring wells shall be as specified in Table 4.1 of this Article for Alternative 4. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. If visual observation or field

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analysis is used, the local agency shall require periodic laboratory analysis if the visual observation or field analysis does not provide a degree of detection equal to that of laboratory analysis.)

(C) The soils sampling and analysis shall be performed as specified in Sections 2643 and 2648 of this article. Samples shall be taken from all wells installed.)

(5) Inventory Reconciliation, Underground Storage Tank Testing, and Pipeline Leak Detectors.)

(A) This monitoring alternative shall at a minimum utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors.)) The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.)

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article.)) The owner or operator of an underground storage tank that experiences a inventory reconciliation in excess of allowable variation(s) shall implement the evaluation procedures specified in Subsection (j) of Section 2644 of this article within the times limits specified.)

(i) The daily variation in inventory reconciliation shall be the difference between the calculated volume in storage and the actual volume in storage.)

(ii) If the variation is based on the previous days physically measured inventory, the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.)

(iii) If the variation is based on the previous days calculated inventory, then the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.)) The calculated inventory on any given day shall be based on consecutive calculations from the day on which the physical inventory was used. The period of consecutive calculations shall be no greater than 1 month.)

(iv) The allowable variation shall be the sum of the measurement error from Table 4.2 of this article and the throughput error calculated in accordance with Subsection (v) of this subsection.)

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Table 4.2

Tank Size (Gallons)	Allowable Measurement Error (Gallons)
Less than 1,000	25
1,000 to less than 5,000	50
5,000 to less than 10,000	75
10,000 or greater	100

(4) The throughput error shall be 0.15 percent [0.0015] of the measured throughput during the period under consideration as described in either Subsection (3) or Subsection (4) of this subsection.

(2) Underground storage tank testing shall be performed yearly, at a minimum, according to the procedures specified in Section 2643 of this article.

(3) All pressurized pipelines shall be monitored using an automatic pipeline pressure loss detector and flow restriction device. The detector shall be connected to an audible/visual alarm system unless it provides for at least a 50-percent reduction from the normal flow rates. Suction pipelines shall be monitored daily for indications of possible leaks.

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(5) Inventory Reconciliation/ Underground Storage Tank Testing/ Pipeline Leak Detectors/ Vadose Zone/ or Ground Water Monitoring and Soil Testing/

(A) This monitoring alternative shall at a minimum utilize inventory reconciliation/ underground storage tank testing/ and pipeline leak detectors.// In addition, either vadose zone or ground water monitoring shall be included and analysis of soil samples taken at the time of boring or well installation/ The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels/

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article/ The owner or operator of an underground storage tank that experiences a variation in excess of any of the following shall implement the evaluation procedures specified in Subsection (7) of Section 2644 of this article within the times specified/

(I) daily variation// plus or minus 100 gallons

(II) 7-day variation// plus or minus 5 percent of throughput or 100 gallons whichever is greater but/ in no case/ greater than 350 gallons

(iii) more than 30-day variation///plus or minus 0.5 percent of throughput or 100 gallons whichever is less

(C) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

(D) All pressurized pipelines and suction pipelines shall be monitored as provided for in Subsection (5)(D) of this subsection/

(E) Vadose zone monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2646 and 2648 of this article///The frequency of monitoring shall be no less frequent than semi-annually/

(F) Ground water monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article///The minimum number of monitoring wells shall be as specified in Alternative 6 in Table 4/1 of this article///Analysis of samples collected can be by visual observation/ or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated///Ground water samples shall be collected and analyzed at least semi-annually////If samples are analyzed by visual observation or field analysis/ the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods/

(G) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article/ Samples shall be taken from all borings and wells installed/

(7) Underground Storage Tank Gauging and Testing/

(A) This monitoring alternative shall/ at a minimum/ utilize gauging and testing of the underground storage tank///This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the/underground storage tank can be measured to an accuracy of + 5/ gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation/

(B) The underground storage tank gauging shall be performed according to the following specifications/

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals/

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(iii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days///No input or withdrawals shall occur during these periods///The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed early at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred///The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

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(B) Interim Monitoring

(A) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory reconciliation or tank gauging///This alternative shall be available only to any of the following categories of owners for a period of up to 3 years after the effective date of these regulations:

(i) Small businesses as defined in Subsection 11342(e) of the Government Code and nonprofit organizations which would meet the criteria for a small business, provided the owner demonstrates to the local agency that sufficient funds will be available to close the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period;

(ii) Any underground storage tank owner who provides a written, legally binding, commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 of this subchapter within

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3 years from the statutory compliance date or replaced with a new underground storage tank which complies with the provisions of Article 3 of this subchapter.//The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit or

(iii) Any governmental agency that demonstrates to the local agency that, due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection, the local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be performed according to the procedures specified in Section 2643 of this article and shall be performed yearly, at a minimum.

(C) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article.//The owner or operator of an underground storage tank that experiences a variation in excess of the levels specified in subsection (C)(6)(B) of this section shall implement the evaluation procedures specified in subsection (F) of Section 2634 of this article within the time specified.

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(D) Underground storage tank gauging shall be performed according to the specifications of subsection (C)(7)(B) of this section. Variations in excess of 1 percent of the underground storage tank volume or 50 gallons, whichever is less, shall be cause for further evaluation.

(E) The local agencies shall evaluate each monitoring alternative proposed to determine if it achieves the objectives specified in subsection (B) of this article according to the following:

(1) Whenever possible, a primary method of monitoring other than ground water monitoring shall be performed, monthly at a minimum.

(2) Where the underground storage tank is in an area where precipitation or surface runoff provides direct recharge of the ground water and the ground water being recharged has an actual or potential use (domestic, agricultural or industrial supply), a monitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring.

(3) In addition, ground water monitoring may be required by the local agency in the areas described in subsection (2) above.//The local agency shall review and approve the number and location of the monitoring wells. More than 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all underground storage tanks or facilities being monitored and is within 1,000 feet of all underground storage tanks being monitored.

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2641. Monitoring Program Requirements

(a) Owners of existing underground storage tanks subject to this article shall implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to Section 25281.5 of the Health and Safety Code, or is exempt from monitoring under Paragraph (b) of this section.

(b) Underground piping shall be exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in Section 2635(b)(7) of this chapter.

(c) The monitoring program for all underground piping that operates at less than atmospheric pressure, unless it is exempt from monitoring under Paragraph (b) of this section, shall comply with Section 2643(e) and shall include daily monitoring as described in Appendix II.

(d) The monitoring program shall include visual monitoring in accordance with Section 2642 of this article for all portions of the underground storage tank system which is not exempt under this section. A portion of the underground storage tank shall be exempt from visual monitoring if the owner demonstrates to the satisfaction of the local agency that one or more of the following conditions apply to that portion:

(1) A portion of the underground storage tank is not accessible for direct viewing.

(2) Visual inspection of a portion of the underground storage tank would be hazardous or would require the use of extraordinary personal protection equipment other than such normal protective equipment such as steel-toed shoes, hard hat, or ear protection; or

(3) The underground storage tank is located at a facility which is not staffed on a daily basis.

(e) The monitoring program shall include non-visual monitoring which must be implemented for all portions of the underground storage tank which are exempt under Paragraph (d) of this section and for the underground storage tank during periods when visual monitoring required under Paragraph (d) of this section is not conducted. This non-visual monitoring shall include a quantitative release detection method as specified in Section 2643 of this article or a qualitative release detection method as specified in Section 2644 of this article or a combination of these methods as approved by the local agency.

(f) At a minimum, any non-visual monitoring shall include a quantitative release detection method for underground pressurized piping that complies with the performance requirements specified in Subsection 2643(d)(1).

(g) The monitoring program must be approved by the local agency and as a minimum shall be in compliance with the requirements of this article and as specified in the underground storage tank operating permit. The local agency may require additional monitoring methods or increased monitoring frequencies as necessary to satisfy the objective in Subsection 2641(a) of this article. In deciding whether or not to approve a proposed monitoring program, or to require additional methods or frequencies of monitoring, the local agency shall consider the following factors:

(1) The volume and physical and chemical characteristics of the hazardous substance(s) stored in the underground storage tank;

(2) The compatibility of the stored hazardous substance(s) and any chemical reaction product(s) with the function of monitoring equipment or devices;

(3) The reliability and consistency of the proposed monitoring equipment and systems under site-specific conditions;

(4) The depth and quantity of ground water and the direction of ground water flow;

(5) The patterns of precipitation in the region and any ground water recharge which occurs as a result of precipitation;

(6) The existing quality of ground water in the area, including other sources of contamination and their cumulative impacts;

(7) The current and potential future uses (e.g., domestic, municipal, agricultural, industrial supply) of ground water in the area;

(8) The proximity and withdrawal rates of ground water users in the area;

(9) The type, homogenity, and range of moisture content of the backfill material and native soils and their probable effects on contaminant migration and detection;

(10) The presence of contamination in the excavation zone or surrounding soils;

(11) The proximity of the underground storage tank to surface waters; and

(12) Additional hydrogeologic characteristics of the zone surrounding the underground storage tank.

(h) Owners shall repair or close in accordance with the requirements of Articles 6, or 7, respectively, any underground storage tank for which an approved monitoring program is not promptly obtained.

(i) Equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calendar year) for operability or running condition. Written records shall be maintained as required in Section 2712 of Article 10 of this chapter;

(j) When an unauthorized release is indicated during the installation of a release detection system, the owner or operator shall cease the installation process and comply with the release reporting requirements of Article 5 and shall replace, repair or close the underground storage tank in accordance with Articles 3, 6 or 7 of this chapter.

(k) When implementation of the monitoring program indicates that an unauthorized release may have occurred, the owner shall comply with the release reporting requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25283, 25291, 25292

40 CFR 280.40, 280.41

2642. Visual Monitoring

(a) Visual monitoring shall be utilized as the principal leak detection monitoring method, where feasible, for all visible exterior surfaces of an underground storage tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable. If visual monitoring is required, the provisions of subsections (c) and (d) of this section shall be followed.

(b) The owner is exempt from visual monitoring for that portion of the underground storage tank to which the following conditions apply:

(1) Any portion of an underground storage tank that is in contact with the ground, a floor, or pad such that it cannot be seen. An underground storage tank in a saddle should not typically qualify for an exemption.

(2) Visual inspection of the underground storage tank would put a person in a physically unsafe environment.

(3) Visual inspection of the underground storage tank would require the use of extraordinary personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.).

(4) The underground storage tank is located at a facility which is not staffed on a daily basis.

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(a) [An owner who is required, pursuant to Section 2641 of this article, to implement visual monitoring program shall incorporate comply with all of the following requirements:

(1) Provisions for routine direct visual/inspection of All accessible visible exterior surfaces of an underground storage tank, and the including any visible horizontal surface directly beneath the underground storage tank, shall be inspected at least daily monitored by direct viewing. The inspection schedule shall be established such that some of the inspections are conducted when the liquid in the underground storage tank is at its highest level;

(2) A written statement of the routine monitoring procedure shall be prepared and be available at the facility which and the record shall includes the frequency of visual inspections, the location(s) from which observations will be made, the name(s) of and title(s) of the person(s) responsible for performing the observations and the reporting format;

[3] Visual inspections shall be performed/daily at a minimum/ and shall be more frequent if necessary/ The inspection schedule shall be established such that some of the inspections occur when the liquid/the underground storage tank is at its highest level///The inspection frequency shall be determined such that any unauthorized release will remain observable on the exterior of or the horizontal surface immediately beneath the underground storage tank between visual//inspections/ The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored/

[4]

(3) Written records shall be maintained according to Section 2712 of Article 10 of this chapter and shall include recordation of the observations made and the liquid level in the underground storage tank at the time of the each inspection. These records shall also include a description of any sampling, analyses, and testing procedures conducted to satisfy Paragraph (b) of this section, including any minimum levels of detection used.

d]

b) The observation of The owner or operator shall undertake all of the following activities if any liquid around or on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually is observed: monitored shall cause the owner or operator to implement all of a portion of the following actions///The applicable/

(1) Any and all action necessary to promptly actions and their timing shall be based on the site-specific situation/ shall be intended to determine if the observed liquid constitutes an unauthorized release and shall be included in the permit/ shall be taken;

[I] Laboratory or field analysis of the observed liquid which shall include minimum levels of detection/

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(2) Observed liquid shall be analyzed in the field or laboratory to determine if an unauthorized release has occurred; and

[2]

(3) [Testing of] The underground storage tank shall be tested utilizing [the procedures described in Section 2643] a quantitative release detection method which complies with one or more of the performance standards set forth in Section 2643 of this article.

[3] Removing all hazardous substances from the underground storage tank]

(c) If the steps in Paragraph 2642(b) indicate that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter, and shall replace, repair or close the underground storage tank pursuant to Article 3, 6, or 7 of this chapter.

[c]

(d) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a non-visual monitoring alternative as specified in Section 2641 this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25293

[2643] Underground Storage Tank Testing

[(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies underground storage tank testing shall implement a testing program pursuant to subsections 2643 (b) through (g) of this section]

[(b) Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance at a rate of 0.05 gallons per hour.]/[These methods are limited to those tests that make adjustments for all of the following, if applicable]

[(1) The presence of vapor pockets]

[(2) Thermal expansion or contraction of the hazardous substance] which include any density considerations]

[(3) Temperature stratification in the underground storage tank]

[(4) Evaporation]

[(5) Pressure variations in the underground storage tank] and

[(6) Deflection of the underground storage tank ends]

(c) Testing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test required in subsection (b) of this section. This hydrostatic pressure test shall be conducted at a pressure of 30 psi (2000 mm Hg) or greater. The test shall be performed for at least 6 minutes. A pressure drop of more than 5 psi (200 mm Hg) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 psi (200 mm Hg) but greater than zero is inconclusive, and a pursuant to subsection (b) of this section shall be performed.

(d) The tests required in this section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test described in subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified and is capable of measuring leaks of 0.05 gallons per hour. Additionally, 1 year after the development of a listing or certification procedure by a nationally recognized independent testing organization which evaluates the accuracy of the test for the type of test described in subsection (b) of this section, only listed or certified tests shall be accepted.

(e) Within 30 days of completion of either of the leak detection test described in subsection (b) or (c) of this section, the underground storage tank owner shall provide the local agency with a report which includes the following information, if applicable:

(1) The procedures used (including any deviations from those recommended by the developer of the underground storage tank test procedure) for the leak detection method.

(2) The test results used in determining the volumetric rate of product loss.

(3) The volumetric rate of product loss, and

(4) The information shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the test procedure used.

(f) Underground storage tanks which are found to lose product shall be repaired or replaced as specified in Articles 6 and 7 of this subchapter, respectively.

(g) The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test.

Section 2643. Non-Visual Monitoring/Quantitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a quantitative release detection method is used. Examples of release detection method(s) that may be used to meet the performance standards of this section are presented in Appendix IV.

(b) At a minimum, any quantitative release detection method(s) used as part of non-visual monitoring shall comply with the performance standards specified in Paragraph (c) of this section for the monitoring of underground storage tanks Paragraph (d) of this section for the monitoring of pressurized piping, *and Paragraph (e) of this section for the monitoring of suction piping.*

(c) Any quantitative release detection method(s) used for the monitoring of underground storage tanks shall comply with at least one of the following performance standards:

(1) Monitoring shall be conducted at least monthly (once per calendar month after tank filling) and be capable of detecting a release of 0.2 gallon *per hour defined at any operating product level in the underground* storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(2) Monitoring shall be conducted which complies with both of the following:

(A) Monitoring shall be conducted at least annually (once per calendar year after tank filling) and be capable of detecting a release of *0.1 gallon per hour defined at or above the maximum product level* determined by the overfill protection system in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; and

(B) Monitoring shall be conducted at least monthly and be capable of detecting a *minimum release of 1.0 gallon per hour with a 95* percent probability of detection and not more than a 5 percent probability of false alarm defined at any normal operating product level in the underground storage tank.

(d) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under pressure shall comply with the performance standards specified below in Paragraph 1, and either Paragraph 2 or Paragraph 3 as follows:

(1) Monitoring shall be conducted at least *hourly at any pressure*, provided that the method is capable of detecting a release equivalent to 3.0 *gallons per hour defined at 10 pounds per square inch pressure within* one hour of its occurrence with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. The leak detection method shall have the capability of alerting the operator of the presence of an unauthorized release by restricting or shutting off the flow of product through the piping or by triggering a visual or audible alarm. (After December 22, 1998 the leak detection method shall shut off the pump when a release occurs.) If pipeline use is intermittent, leak detection monitoring is required only at the beginning or end of the period during which the pipeline is under pressure, but in any event there *shall not be more than one hour between* the time the pipeline is put under pressure and detection of an unauthorized release; and

(2) Monitoring shall be conducted at least monthly at any pressure provided that the method is capable of detecting a minimum release equivalent to 0.2 gallon per hour defined at normal operating pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(3) Monitoring shall be conducted at least annually (once per calendar year) at a pressure designated by the equipment manufacturer provided that the method is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at 150 percent (one and one half times) the normal operating pressure of the product piping system at the test pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm.

(e) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under less than atmospheric pressure shall include monitoring conducted at least every three years which is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at a minimum of 40 psi with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. Daily monitoring shall be performed as described in Appendix II.

(f Inventory reconciliation and manual tank gauging do not require certification of compliance with the performance standards of Paragraph (b) of this section. Manual tank gauging and inventory reconciliation release detection methods shall comply with Sections 2645 and 2646 of this article, respectively.

(g) Each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, shall have a certification stating that it complies with the performance standard(s) specified in this section. This certification shall be provided as a result of one of the following evaluation procedures:

(1) An independent third party testing laboratory shall evaluate and approve the method using the appropriate "EPA Standard Test Procedure" for leak detection equipment presented in Appendix V; or

(2) An independent third party testing laboratory shall evaluate and approve the method using a voluntary consensus standard that is intended for the method being evaluated; or

(3) An independent third party testing laboratory shall evaluate and approve the method using a procedure deemed equivalent to an EPA procedure. Any resultant certification shall include a statement by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as used in the EPA standard test procedure. This certification shall include a statement that:

(A) The method was tested under various conditions that simulate interferences likely to be encountered in actual field conditions (no fewer nor less rigorous than the environmental conditions used in the corresponding EPA test procedure);

(B) Each condition under which the method was tested was varied over a range expected to be encountered in 75 percent of the normal test cases;

(C) All portions of the equipment or method evaluated received the same evaluation;

(D) The amount of data collected and the statistical analysis are at least as extensive and rigorous as the data collected and statistical analysis used in the corresponding EPA test procedure and are sufficient to draw reasonable conclusions about the equipment or method being evaluated;

(E) The full-sized version of the leak detection equipment was physically tested; and

(F) The experimental conditions under which the evaluation was performed and the conditions under which the method was recommended for use have been fully disclosed and that the evaluation was not based solely on theory or calculation.

(4) The evaluation results must contain the same information and shall be reported following the same general format as the EPA standard results sheet as any corresponding EPA test procedure.

(h) The underground storage tank owner shall notify the local agency 48 hours prior to conducting any tank integrity test. The 48-hour notification requirement may be waived by the local agency. Within 30 days of completion of an underground storage tank integrity test, the tank owner shall provide the local agency with a report. The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank has a release shall be reported by the owner or operator to the local agency within 30 days of completion of the test. The report shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the release detection method used.

(i) If an automatic tank gauge is used as a method of release detection, the automatic tank gauge shall generate a hard copy of all data reported, including time and date; tank identification; fuel depth; water depth; temperature; liquid volume; the time automatic tank gauging is performed; and hourly temperature corrected volume data during the automatic tank test.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.40 - 280.45

2644. Non-Visual Monitoring/Qualitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a qualitative release detection method is used. Each qualitative release detection method shall have an independent third party evaluation to certify accuracy and response time of the detection method in accordance with procedures presented in Appendix V. Examples of qualitative release detection method(s) that may be used are presented in Appendix IV.

(b) Vadose zone monitoring release detection methods shall be conducted in accordance with the requirements of Section 2647.

(c) Ground water monitoring release detection shall be conducted in accordance with the requirements of Section 2648.

(d) Any qualitative release detection method which includes the installation of monitoring wells or the drilling of other borings shall include installation, construction, and sampling and analysis procedures according to the requirements of Section 2649 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2648/ Soil Testing

[a] All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires borings for vadose zone or ground water monitoring shall implement soil testing pursuant to Subsections (b) through (h) of this Section/

[b] Undisturbed (intact) soil samples shall be recovered from all borings used for the installation///This requirement may be waived by the local agency when borings cannot be drilled and sampled using accepted techniques that do not introduce liquids into the boring/

[c] Soil samples shall be taken at intervals of 5 feet or less beginning at the ground surface/ but sampling shall not be required below the water table nor in unweathered bedrock which has little or no primary permeability/

[d] A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval/

[e] Borings shall be drilled and sampled by techniques that do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water/ If this cannot be accomplished using accepted techniques/ the requirement for soil sampling may be waived by the local agency/ However/ the vadose zone or ground water monitoring system shall still be installed/ Furthermore/ once below the water table/ it is not required that the wells be advanced using the same method that was used in the vadose zone/

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(I) Borings shall be described in accordance with the provisions of Subsections 2608 (I) and (M) of this Article/

(G) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide replicate analyses/ if specified/.

(H) If more than one boring is utilized/ composite samples consisting of soil from the same depth from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis and any pollutant in a sample will not be diluted below detection limits by mixing with uncontaminated samples or samples that contain low concentrations of the pollutant/

(I) Soil samples shall be acquired/ prepared/ preserved/ stored/ transported/ and analyzed by methods that are appropriate for the objectives of the investigation and that will safeguard sample integrity///Some acceptable methods may be found in the references listed in Appendix I/ Table C of this Subchapter///Other similar or superior methods may be approved by the local agency/

(J) Samples shall be analyzed by field or laboratory methods that provide quantitative or qualitative results///If qualitative methods are used/ their lower detection limits shall be verified by the developer/ distributor or manufacturer of the testing method or devised/ or by actual field tests in the case of sensory/type tests/ The analyses shall be by methods that are

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appropriate for the objectives of the investigation and that will safeguard sample integrity///Some acceptable methods may be found in the references listed in Appendix I/ Table C of this Subchapter///Other similar or superior methods may be approved by the local agency///The analytical method approved for soil testing shall have a detection limit that is lower than the concentration that would interfere with any of the long-term monitoring methods that could be used at the site/

(K) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank///If the use of the underground storage tank has historically changed/ then analysis shall be for at least one constituent from each period of use///If the hazardous substance is known to degrade or transform to other constituents in the soil environment/ the analysis shall include these degradation and/or transformation constituents/

(L) Samples may be analyzed in any order of depth/ If levels of hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site)/ further soils analysis is not necessary pursuant to this subsection and the hazardous substance(s) shall be assumed to have originated from the underground storage tank///In this situation/ the remainder of the soil samples need not be analyzed pursuant to these regulations///A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank/systems is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the

~~underground storage tank can be detected despite the presence of the hazardous substance already in the environment.~~

~~(m) If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or close the underground storage tank pursuant to Article 6 or 7 of this subchapter.~~

~~(n) If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be installed pursuant to Section~~ 2642 2641 of this article.

2645. Manual Tank Gauging and Testing

(a) Manual tank gauging shall only be used as part of non-visual monitoring for existing underground storage tanks which have a total system capacity of 2,000 gallons or less and which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year.

(b) Manual tank gauging shall not be used on tanks with secondary containment and shall not be used under this article after December 22, 1998 for underground storage tanks with a capacity of 1,001 gallons or greater.

(c) Owners of existing underground storage tanks who utilize manual tank gauging as part of non-visual monitoring shall, at a minimum, conduct weekly gauging according to the following specifications:

(1) Tank liquid level measurements shall be taken at the beginning and ending of a gauging period which shall be at least 36 continuous hours during which no liquid is added to or removed from the tank. The underground storage tank shall be secured to prevent inputs or withdrawals during the gauging period. No inputs shall occur within the 12-hour period preceeding the gauging period. The liquid level measurements shall be based on an average of two consecutive stick readings at both the beginning and ending of the period; and

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

(3) If the variation between beginning and ending measurements exceeds the weekly or monthly standards set forth in Table 4.1, a second 36 hour test shall be commenced immediately and all measurements and calculations checked for possible errors. If the second test confirms a variation which exceeds the weekly or monthly standards in Table 4.1, then an unauthorized release shall be suspected and a tank integrity test shall be conducted within 72 hours. The local agency may extend this 72-hour period up to 30 days, if all the contents of the underground tank are safely and properly removed within the 72-hour period.

(d) If the results of a tank integrity test conducted under the requirements of Paragraph (c)(3) of this section confirm an unauthorized release, the owner shall comply with the requirements of Article 5 of this chapter and replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Table 4.1

MANUAL TANK GAUGING MEASUREMENT STANDARDS

Tank Size (Gallons)	Weekly Standard (One Test) (Gallons)	Monthly Standard (Average of Four Tests) (Gallons)
550-or-Less	10	5
551 to 1,000	13	7
1,001 to 2,000	26	13

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292, 25293

40 CFR 280.43

2648) Vadose Zone Monitoring

(A) All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires vapor or another form of vadose zone monitoring shall implement the vadose zone detection monitoring system pursuant to Subsections (B) through (H) of this section.

(B) Vadose zone monitoring shall consist of vapor monitoring, soil/pore liquid monitoring, or other forms of vadose zone monitoring. Combinations of these methods may be used.

(C) Wells for vapor monitoring shall be fully perforated except for that portion adjacent to a surface seal and that portion of the bottom of a well where a plugged, blank segment of casing is used as a free liquid trap.

(D) The number, location, and depths of vadose zone monitoring points shall be selected so as to give the earliest possible warning of any unauthorized release from the underground storage tank.

(E) Subsurface vadose zone monitoring systems shall, if possible, be located within the backfill surrounding the underground storage tank.

(F) Vapor monitoring for underground storage tanks shall be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection:

(1) Before any method of vapor monitoring is approved for a specific site, it shall be demonstrated by an actual on-site demonstration, using an appropriate tracer substance, that vapor would actually be detected by the installed system. This requirement may be waived by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground storage tanks in equal or less favorable situations. The following factors shall be considered in comparing the demonstration to the actual on-site conditions:

(A) Backfill materials and grain size distribution;

(B) Type and homogeneity of native soils;

(C) Range of moisture contents of the backfill and native soils that will be encountered, and their effect on vapor migration and detection;

(2) The location and depth at which each sensor is placed relative to the underground storage tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(3) Vapor monitoring wells shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well;

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(g) Soil/pore liquid monitoring and other forms of vadose zone monitoring may be approved if the discharger can clearly show that:

(1) The stored substance is susceptible to detection by the proposed technique;

(2) The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable;

(3) The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system;

(4) The proposed technique will be effective in providing early detection underground storage tank leakage;

(h) Borings shall be described in accordance with the provisions of the subsections 2648(t) and (u) of this article.

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2646. Inventory Reconciliation

(a) Inventory reconciliation shall only be used as part of non-visual monitoring for existing underground storage tanks which contain motor vehicle fuels.

(b) After January 1, 1993, inventory reconciliation, and any other leak detection method that utilizes manual stick readings, shall not be used as part of non-visual monitoring for existing underground storage tanks containing a hazardous substance including motor vehicle fuel, where the existing ground water level or the highest anticipated ground water level is less than 20 feet below the bottom of the tank. These ground water levels shall be determined according to the requirements of Section 2649(c) of this article.

(c) Inventory reconciliation that utilizes manual stick readings shall not be used after December 22, 1998.

(d)

(d) All/Owners or operators of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies/who utilize inventory reconciliation as part of non-visual monitoring shall comply with implement an inventory reconciliation program as described in Subsections (b) through (f) the requirements of this section. This requirement may be transferred to the operator pursuant to the appropriate provisions of Chapter 6.7 of Division 20 of the Health and Safety Code.

4.48

~~(b)~~

(e) Each ~~All~~ underground storage tank~~s~~ shall be individually monitored ~~utilizing~~ an ~~daily~~ inventory reconciliation system that takes into account:

(1) Separate daily underground storage tank quantity measurements for both the stored hazardous substance and any water layer; ~~and~~

(2) Daily ~~meter~~ readings for underground storage tank input and withdrawals; and

(3) Checking of product inputs indicated by delivery receipt by measurement of the tank inventory volume before and after delivery. Underground storage tanks that are connected by a manifold may ~~be monitored as a unit instead of individually///Underground storage tank~~ require time for the level to stabilize before a measurement is taken.

(f) Meters used for determining inputs and withdrawals ~~meters~~ shall comply with California ~~Administrative~~ Code of Regulations, Title 4, Chapter 9, Subchapter 1, "Tolerances and specifications for commercial weighing and measuring devices". Meters shall be inspected by the County Department of Weights and Measures or a device repairman as defined in the California Business and Professions Code, Division 5, Chapter 5.5.

~~(c)~~

(g) For the purpose of this section, "daily" ~~shall be defined as~~ means at least 5 days per week. ~~This minimum~~ The number of days involved may be reduced ~~during weeks that a public holiday occurs on Monday through Friday~~ by the number of public holidays that occur during any such week. Local agencies may reduce

the frequency of monitoring to no less than once every 3 days at facilities that are not staffed on a regular basis, provided that the monitoring is performed on every day the facility is staffed or ~~that~~ when inputs or withdrawals are made from the underground storage tank.

~~(d)~~

(h) Underground storage tank quantity measurements shall be based on liquid level ~~divination~~ measurements which are:

(1) Performed during periods when no additions or withdrawals are being made to the underground storage tank;

(2) Performed by the underground storage tank owner, operator, or other designated ~~personnel~~ persons who have had appropriate training;

(3) Based on the average of two readings if stick or tape measurements are used;

(4) Determined by equipment capable of measuring the level of the product over the full range of the tank's height to the nearest one-eighth of an inch;

~~(e)~~

(5) Determined by equipment capable of ~~detecting~~ a measuring, to the nearest one-eighth of an inch, water ~~layer~~ at present in the bottom of the underground storage tank. If the underground storage tank is not level, and the measurements are taken manually then the measurement should occur at the lowest end of the underground storage tank;

[5]

(6) Measured at the center of the longitudinal axis of the underground storage tank if access is available or measured at the lowest end of the underground storage tank, with a calibration measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and

[6]

(7) Converted to volume measurements based on a calibration chart for the underground storage tank. This chart shall, [if possible] where feasible, take into account the actual tilt of the underground storage tank [as determined initially as described in Subsection (5) above].

(i) The daily variation in inventory reconciliation shall be the difference between physically measured inventory in storage and the calculated inventory in storage. The physically measured inventory shall be determined at approximately the same time each day by taking liquid level measurement and converting it to gallons using the calibration chart. The calculated inventory shall be determined at approximately the same time of day for each business day by adding the inputs and subtracting the withdrawals from the physically measured inventory determined the day before. These variations shall be summed for a period of one month. Monthly variations exceeding a variation of 1.0 percent of the monthly tank delivery plus 130 gallons must be investigated in accordance with this section.

[4]

(j) The owner or operator shall, on a [quarterly] an annual basis, submit a statement to the local agency [under penalty of perjury] that [either] the which states that all inventory reconciliation data [is] are within allowable variations or which includes a listing of the [dates] period of times and the corresponding variations [that] which exceed the allowable variations. Said statement shall be executed under penalty of perjury.

[7]

(k) If the monthly inventory reconciliation, conducted under Paragraph (i) of this section, exceeds the allowable variation, [indicates a loss of the hazardous substance greater than that specified] the owner or operator as appropriate or permittee shall: [implement the following:] [If the inventory reconciliation indicates a gain of hazardous substance greater than that specified] the operator or permittee shall implement subsections [1][(2)][(3)] and [5] of this section. [The steps may be implemented sequentially or concurrently] However, they must be completed within the specified time periods. [Reporting as required in Article 8 of this subchapter shall be followed]

[If completion of the steps described in subsections [2] [3] or [5] of this subsection indicates inventory reconciliation error that] when corrected cause the levels specified not to be exceeded, then the remainder of the steps need not be completed. [If completion of the steps described in subsections [4] or [6] through [8] of this subsection reveal the source of the loss] then the remainder of the steps need not be completed.

[The transfer of hazardous substances into and out of the underground storage tank may continue during implementation of the steps provided that the steps are completed within the specified periods and any loss or gain did not exceed two times the specified level.//Daily reconciliation shall continue during implementation of the steps.]

(i) Notify the local agency of a suspected unauthorized release within 24 hours of completing any inventory reconciliation which exceeds the allowable variation;

[(I) The operator shall notify the owner verbally or in writing of the fact that inventory reconciliation indicates a loss of hazardous substances or gain of water within 24 hours of the completion of the daily reconciliation which indicates the loss or gain.]

(2) Within 24 hours of discovering a variation which exceeds the allowable variation, the operator shall review the inventory records for the preceding 30 days and within 2 hours to determine if a calculation error exists which would that caused the gain or loss apparent excessive variation. to be less than that specified.]

[(3) The operator shall have performed by a qualified person, a//complete review of all inventory records/from the last time a zero loss or gain condition existed. This shall include a new inventory reconciliation which was/taken/at least/8 hours after the/inventory reconciliation which triggered this evaluation. This shall be completed within 24 hours of the conclusion of/Subsection (1)(2) of this section.]

[(4) The readily accessible physical facilities shall be carefully inspected for leakage.//This shall be completed by trained personnel within 24 hours of completion of/Subsection (1)(3) of this section.]

(3) Within 24 hours of discovering a variation which exceeds the allowable variation, have all readily accesible facilities carefully inspected for leakage by appropriately trained persons;

[(5)

(4) Have all dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completing of the procedure required in Subsection (1)(4)Paragraph (4) immediately above of this section.]

[6] All piping shall be tested within 24 hours of completion of Subsection (f)(5) of this section.//The piping shall be isolated and hydrostatically pressure tested at/50 psi (2600 mm Hg) or greater.// If the pressure drops more than 5 psi (260 mm Hg) per minute/ it indicates the probability of a leak in the line.//Repeat the test at least once to ensure against compression of entrained air.//Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling.//This step may be completed after/the step described in Subsection(f)(7) of this section if excavation is necessary to perform the tests and if/the step described in/Subsection (f)(7) of this section is completed within 48 hours of the completion of Subsection (f)(5) of this section.//If this occurs/ then this subsection shall be completed within 24 hours of the completion of Subsection (f)(7) of this section/

[7] The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of Subsection (f)(6) of this section/

(5) Continue to conduct inventory reconciliation according to the requirements of this section. If a second 30-day period of data confirms the initial results, the owner or operator shall comply with the requirements of Article 5 of this chapter; and

[8]

(6) Conduct such additional tests or investigations as may be required by the local agency.

(l) Whenever any of the steps in Paragraph (k) of this section are performed, the results shall be documented in the monitoring record required under Section 2712 of Article 10 of this chapter. If completion of any one of these steps indicates an inventory reconciliation error that, when corrected, indicates that allowable variations have not been exceeded, then the remainder of the steps need not be completed. If completion of any of these steps indicates that the apparent excessive variation is not due to a release or tank failure, then the remainder of the steps need not be completed.

(m) The transfer of hazardous substances into and out of the underground storage tank may continue while the steps indicated in Paragraph (k) are being implemented provided the steps indicated are completed within the specified periods. Daily inventory readings and monthly reconciliation shall continue while the steps are being implemented.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292.

40 CFR 280.43

2647/ Ground Water Monitoring

(a) All owners of existing underground storage tanks/ implementing one of the monitoring alternatives in Section 2641 of this article which requires ground water monitoring shall implement a ground water monitoring system pursuant to Subsections (b) through (d) of this section/

(b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster/

(c) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 10 feet below the underground storage tank bottom///However/ wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick///In these situations/ the well shall be terminated 1 to 2 feet into this clay layer/

(d) Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point 1 foot above the bottom of the casing to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface/ whichever is the lowest point above the highest anticipated ground water level/

(e) Ground water monitoring wells shall be constructed as filter-packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well/

(f) All well casings shall have a bottom cap or plug/

(g) Filter packs shall extend at least 2 feet above the top of the perforated zone except where the ground surface is less than 10 feet above the highest ground water level/ in which case this requirement may be waived by the local agency provided the filter pack extends to the top of the perforated zone/

(h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the inside diameter of the casing/

(i) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack/

(j) Borings shall be described in accordance with the provisions of Sections 2648 (f) and (h) of this article/

Authority: H&SC 25299.3
Reference: H&SC 25292

JAN 17 1991

2647. Vadose Zone Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize vadose zone monitoring as part of non-visual monitoring shall comply with the requirements of this section. Vapor monitoring, soil-pore liquid monitoring, or a combination of these or other vadose zone monitoring methods may be used.

(b) Vadose zone monitoring shall not be used as the sole release detection method of non-visual monitoring for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than ten feet below the bottom of the tank. Ground water levels shall be determined according to the requirements of Section 2649(c) of this article.

(c) Vadose zone vapor monitoring shall be conducted either daily or continuously. Other vadose zone monitoring shall be conducted at least weekly. At a minimum, all manual sampling shall comply with the requirements of Section 2649(g) of this article.

(d) The number, location, and depths of vadose zone monitoring points shall be selected to achieve the objective specified in Section 2641(a) of this article. Where possible, monitoring points shall be located within the excavation backfill surrounding the underground storage tank. The owner or operator shall determine the exact location of the underground storage tank before attempting to install monitoring wells and/or devices as approved by the local agency.

(e) Vadose zone vapor monitoring shall comply with the following minimum requirements:

(1) The vapor characteristics of the stored product, or a tracer compound placed in the underground tank system, shall be sufficiently volatile to result in a vapor level that is detectable by the monitoring devices;

(2) Backfill materials and soils surrounding monitoring points shall be sufficiently porous to readily allow diffusion of vapors;

(3) The level of background contamination in the excavation zone and surrounding soils shall not interfere with the method used to detect releases from the underground storage tank;

(4) The monitoring devices shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system;

(5) To maximize release detection, the location and depth of each monitoring point shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(6) Vapor monitoring wells located in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well; and

(7) All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in Sections 2649(b)(c)(e)&(f) of this article.

(f) Soil-pore liquid monitoring and other forms of vadose zone monitoring shall comply with the following minimum requirements:

(1) The stored substance shall be susceptible to detection by the proposed release detection method;

(2) The stored substance shall not corrode or otherwise attack the materials from which the detection system is constructed or otherwise render the detection system inoperable or inaccurate; and

(3) Site-specific conditions (e.g., precipitation, ground water, soil-moisture, background contamination) shall not interfere with the operability and accuracy of the release detection method.

(g) Compliance with the requirements of Paragraphs (e) and (f) of this section shall be based on a site-assessment, including assessment of the underground storage tank excavation zone.

Authority: H&SC 25299.3, 25299.9

Reference: H&SC 25292

40 CFR 280.43

2648/ General Construction and Sampling Methods

(a) Soil and water sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance and shall not degrade/ capture/ mask/ nor alter the constituents for which analyses will be made/

(b) Representative samples of all imported materials used for filter packs//and to construct seals shall be evaluated to determine their acceptability with regard to Subsection (a) of this section/

(c) All drilling tools shall be thoroughly cleaned immediately before a boring is started/

(d) All well casings/ casing fittings/ screens/ and all other components that are installed in the well shall be thoroughly cleaned before installation in the boring/.

(e) All soil and water samplers shall be cleaned before each sample is taken/

(f) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the provisions of Subsection (a) of this section. All additives used and the depth in which they were used shall be accurately recorded in the boring log.

(g) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents.

(h) All ground water monitoring wells shall be appropriately developed until the discharge water contains less than 10 ppm settleable solids.

(i) Well heads shall be provided with a water-tight cap.

(j) Well heads shall be enclosed in a surface security structure that protects the well from the entry of surface water, accidental damage, unauthorized access, and vandalism. This may be accomplished by providing a locked well cap or by securing the facility within which a well is located.

(k) Pertinent well information including well identification, well type, well depth, well casing diameters if more than one size is used, and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(l) Surface seals for vapor wells that are completed no more than 5 feet below the bottom of the underground storage tank and which are above any free water zones shall be required at the discretion of the local agency on a site specific basis.

(m) If surface seals for vapor wells that are completed in or below a free water zone are required, the seal shall not extend below the top of the underground storage tank.

(n) Vapor wells constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface need not be sealed against infiltration of surface water.

(o) The need for surface seals for other types of vadose zone installations shall be determined on a case-by-case basis.

(p) In order to implement monitoring Alternatives 2, 3, 4, and the ground water monitoring well portion of 6, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by a review of all available water level records for wells within 1 mile of the site. Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all existing wells, for which records are available, that are within 500 feet of the facility and which are perforated in the zone of interest, or by drilling at least 1 exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than 500 feet from the underground storage tank.

(2) The exploratory boring may be of any diameter capable of allowing the detection of first water.

(3) The exploratory boring shall be drilled to first permanent ground water or to a minimum depth of 100 feet for Alternatives 2, 3, and 6 or to a minimum depth of 30 feet for Alternative 4.

(4) If ground water is encountered and ground water monitoring is part of the monitoring alternative, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section and Section 2647 of this article.

(5) If ground water is encountered but monitoring is not required or if the exploratory boring does not encounter ground water it shall be sealed in accordance with the provisions of Subsections 2648 (d) and (e) of this article.

(d) All borings that are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with bentonite grout.

(e) All borings that are converted to vadose zone monitoring wells in which the monitored interval is shallower than the total depth of the boring shall have the portion of the boring which is below the monitored interval sealed with bentonite grout.

(f) All slurry-type grouts used to abandon a boring or for well seals shall be emplaced by the tremie method.

(g) All borings shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. A technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeness of the logs.

(h) All wet zones above the free water zone shall be noted and accurately logged.

(i) If evidence of contamination is detected by sight, smell, or other field analytical methods, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

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2648. Ground Water Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize ground water monitoring as part of non-visual monitoring shall comply with the requirements of this section. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where permissible under this section, as the sole release detection method.

(b) *Ground water monitoring may be used as the sole release detection method of* non-visual monitoring for existing underground tanks only where all of the following conditions exist:

(1) The hazardous substance stored in the underground storage tank is immiscible with water and has a specific gravity of less than one;

(2) Continuous monitoring devices or manual methods are used which are capable of detecting the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells. This capability shall be certified by an independent third party using an appropriate evaluation procedure. Examples of acceptable evaluation procedures are provided in Appendix V of this chapter;

(3) The existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than 20 feet from the ground surface. *These ground water levels shall be determined* according to the requirements of Section 2649(c) of this article;

(4) The hydraulic conductivity of *the soil(s) between the underground storage* tank and the monitoring wells or devices is at least 0.01 cm/sec (e.g. the soil consists of gravels, coarse to medium sands, or other permeable materials);

(5) The ground water proposed for monitoring has no present beneficial uses (e.g., domestic, municipal, *industrial, agricultural supply) or is not* hydraulically connected to ground or surface water which has actual beneficial uses; and

(6) Monitoring wells or devices are located within the excavation zone or as close to the excavation zone as feasible.

(c) Compliance with the conditions specified in Paragraph (b) of this section shall be based on a site-assessment, including assessment of the areas within *and immediately below the underground storage tank* excavation zone. If ground water monitoring is approved as the sole release detection method of non-visual monitoring, the number and location of the monitoring wells and/or devices as approved by the local agency shall also be based on this site-assessment with minimum requirements as follows:

(1) *Single tank - two wells, one at each end of the tank.*

(2) Two or three tanks - three wells equally spaced.

(3) Four or more tanks - four wells, at least two of which shall be downgradient and the remainder equally spaced.

(4) Pipelines - additional wells, if needed, as determined by the local agency.

(d) Ground water monitoring shall be conducted at least monthly or continuously. Any continuous monitoring system shall be capable of detecting the presence of hazardous substance on top of the ground water in the monitoring well and allow collection of periodic samples. Ground water samples shall be analyzed by visual observation or field or laboratory analysis as approved by the local agency depending on the method of monitoring and the constituents being evaluated. The local agency may require periodic laboratory analysis where visual observation or field analysis does not provide an adequate degree of detection as compared to that of laboratory analysis. Sampling conducted which requires field or laboratory analysis shall comply with the minimum requirements of Section 2649(g) of this article.

(e) The number, location, and depths of ground water monitoring wells shall be selected to achieve the objective specified in Section 2641(a) of this article. Monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster, subject to the review and approval of the local agency.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2649. Well Construction and Sampling Requirements

(a) Owners of existing underground tanks who utilize a qualitative release detection method shall comply with the requirements of this section and any applicable requirements of Sections 2644, 2647, and 2648 of this article.

(b) The installation of all monitoring wells and the drilling of all other borings shall be in accordance with local permitting requirements or in their absence, with the following requirements:

(1) All monitoring wells and all other borings shall be logged during drilling according to the following requirements:

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5, and 6, published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention: Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225);

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation;

(C) All wet zones above the water table shall be noted and accurately logged. Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log; and

(D) Geologic logs shall be described by a professional geologist or civil engineer, who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System, or by a technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals, provided that the professional must review the logs and assume responsibility for the accuracy and completeness of the logs.

(2) All drilling tools shall be thoroughly steam cleaned immediately before each boring is started;

(3) All well casings, casing fittings, screens, and all other components that are installed in a well shall be thoroughly cleaned before installation;

(4) Soil and water sampling equipment and materials used to construct a monitoring well shall be compatible with the stored hazardous substance and shall not donate, capture, mask, or alter the constituents for which analyses will be made. All perforated casings used in the construction of monitoring wells shall be factory perforated;

(5) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the requirements of Paragraph (b)(4) of this section. All additives used shall be accurately recorded in the boring log;

(6) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents;

(7) If evidence of contamination is detected by sight, smell, or field analytical methods, drilling shall be halted until a responsible professional determines if further drilling is advisable;

(8) All borings which are converted to vadose zone monitoring wells shall have the portion of the boring which is below the monitored interval sealed with approved grout;

(9) All borings which are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with an approved grout. All slurry-type grouts used to seal an abandoned boring or an abandoned well shall be emplaced by the tremie method; and

(10) All monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering. Surface seals may be required by the local agency.

(c) When installing a vadose zone or ground water monitoring well, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by reviewing all available water level records for wells within one mile of the site. Existing site ground water levels shall be established either by reviewing all available water level measurements taken within the last two years at all existing wells, within 500 feet of the underground storage tank which are perforated in the zone of interest, or by drilling at least one exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient, if possible, and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than ten feet from the underground storage tank;

(2) The exploratory boring may be of any diameter capable of allowing the detection of first ground water;

(3) The exploratory boring shall be drilled to first perennial ground water, or to a minimum depth of 20 feet for vadose zone monitoring wells, or to a minimum depth of 30 feet for ground water monitoring wells if permitted by site lithology;

(4) If ground water is encountered, and ground water monitoring is the monitoring method, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section; and

(5) If ground water is encountered, but ground water monitoring is not the monitoring method, or if the exploratory boring does not encounter ground water, the boring shall be sealed in accordance with the provisions of Paragraph (b)(9) of this section.

(d) In addition to the requirements of Paragraph (b) of this section, all ground water monitoring wells shall be designed and constructed according to the following minimum requirements:

(1) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the bottom level of the underground storage tank. However, wells shall not extend through laterally extensive impermeable zones that are below the water table and that are at least five feet thick. In these situations, the well shall be terminated one to two feet into the impermeable zone;

(2) Ground water monitoring wells shall be designed and constructed as filter packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well;

(3) Ground water monitoring well casings shall extend to the bottom of the boring and shall be factory perforated from a point of one foot above the bottom of the casing to an elevation which is either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation;

(4) All well casings shall have a bottom cap or plug;

(5) Filter packs shall extend at least two feet above the top of the perforated zone except where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones or where the ground surface is less than ten feet above the highest anticipated ground water level, the local agency may reduce the height of the filter pack so long as the filter pack extends at least to the top of the perforated zone. Under such circumstances, additional precautions shall be taken to prevent plugging of the upper portion of the filter pack by the overlying sealing material;

(6) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of two inches which are installed in a boring whose diameter is at least four inches greater than the outside diameter of the casing;

(7) Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction;

(8) Seventy-two or more hours following well construction, all ground water monitoring wells shall be adequately developed and equilibrium shall be established prior to any water sampling;

(9) Well heads shall be provided with a water-tight cap and shall be enclosed in a surface security structure that protects the well from surface water entry, accidental damage, unauthorized access, and vandalism. Traffic lids shall be clearly marked as monitoring wells; and

(10) Pertinent well information including well identification, well type, well depth, well casing diameters (if more than one size is used), and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(e) In addition to the requirements of Paragraph (b) of this section, all vadose zone vapor monitoring wells shall be cased and sealed as follows:

(1) Well casings for vapor monitoring shall be fully perforated except for the portion adjacent to a surface seal and that portion used as a free liquid trap;

(2) Surface seals for vapor wells that are completed no more than five feet below the bottom of the underground storage tank and which are above any free water zones may be required at the discretion of the local agency on a site-specific basis;

(3) If surface seals for vapor wells are completed in or below a potential free water zone, the seal shall not extend below the top of the underground storage tank; and

(4) Vapor wells need not be sealed against infiltration of surface water if constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface.

(f) Undisturbed (intact) soil samples shall be obtained from all borings for the installation of monitoring wells and all other borings and analyzed according to the following minimum requirements, unless the local agency waives this requirement under this subsection:

(1) Borings shall be drilled and sampled using accepted techniques which do not introduce liquids into the boring and which will allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using acceptable techniques, the requirement for soil sampling may be waived by the local agency provided, however, that installation of the vadose zone or ground water monitoring system shall be completed; and provided further, that once below the water table, borings need not be advanced using the same method that was used in the vadose zone;

(2) Soil samples shall be obtained at intervals of five feet or less and at any significant change in lithology, beginning at the ground surface. Sampling is not required in unweathered bedrock which has little or no permeability;

(3) A soil sample shall be obtained at the termination depth of a dry boring regardless of the spacing interval;

(4) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide any specified replicate analyses;

(5) Soil samples shall be acquired, prepared, preserved, stored, and transported by methods that are appropriate for the objectives of the investigation which safeguard sample integrity and satisfy the requirements of Paragraph (g) of this section;

(6) Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative or qualitative results. Lower detection limits shall be verified by the laboratory;

(7) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then samples shall be analyzed for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents;

(8) If hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soil analysis is not necessary pursuant to this subsection. The hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations and the owner or operator shall comply with Paragraph (9) of this subsection. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment; and

(9) If soil analysis indicates that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank pursuant to Article 3, 6 or 7 of this chapter.

(g) The qualitative release detection method shall include consistent sampling and analytical procedures, approved by the local agency, that are designed to ensure that monitoring results provide a reliable indication of the quality of the medium (e.g., ground water, soil-pore liquid, soil vapor, or soil) being monitored. Some acceptable procedures are listed as references in Appendix I, Table C of this chapter. At a minimum, the owner or operator shall provide a written detailed description, to be specified in the permit and to be maintained as part of the records required under Section 2712 of Article 10 of this chapter, of the procedures and techniques for:

(1) Sample collection (e.g., purging techniques, water level, sampling equipment, and decontamination of sampling equipment);

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain-of-custody control.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

DEC 1 4 1990

Article 5. Release Reporting and Initial Abatement Requirements

2650. Reporting and Recording Applicability

(a) The requirements of this article apply to all owners or operators of one or more underground storage tanks storing hazardous substances.

(b) The owner or operator shall record or report any unauthorized release from the underground storage tank, and any spill or overfill, in accordance with the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(c) The owner or operator of an underground storage tank with secondary containment shall record any unauthorized release described in Section 25294 of the Health and Safety Code in accordance with Section 2651 of this article.

(d) Owners or operators subject to the requirements of this article shall record all spills and overfills in accordance with the requirements of Section 2651 of this article.

(e) The owner or operator of an underground storage tank shall report on a form provided by the Board any unauthorized release described in Section 25295 of the Health and Safety Code, and any of the following conditions according to Section 2652 of this article:

(1) Any unauthorized release recorded under Paragraphs (c) or (d) of this section which the owner or operator is unable to cleanup or which is still under investigation within eight hours of detection;

(2) The discovery by the owner or operator, local agency, or others of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;

(3) Unusual operating conditions observed by the owner or operator including erratic behavior of product dispensing equipment, the sudden loss of product from the underground storage tank, or an unexplained presence of water in the tank, unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced; and

(4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

(f) The reporting requirements of this article are in addition to any reporting requirements specified by Section 13271 of Division 7 of the California Water Code and other laws and regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25294, 25295

40 CFR 280.52

2651. Unauthorized Releases Requiring Recording Requirements for Unauthorized Releases

(a) Owners or operators required by section 2650 to record a release or condition shall comply with the requirements of this section.

[A]

(b) The operator's monitoring records, as required under Section 2712 of Article 10 of this chapter report required by subsection 2650(b) of this article shall include:

(1) The operator's name and telephone number;

[1]

(2) A list of the types, quantities, and concentrations of hazardous substances released;

[2] Method of cleanup;

(3) A description of the actions taken to control and cleanup the release;

[3]

(4) The method and location of disposal of the released hazardous substances (indicate whether a hazardous waste manifest[s] is was/will be utilized);

[4] Method of future leak prevention or repair/if this involves a change as defined in Article 10, Section 2712, subsection [a], of this subchapter, then appropriate reports pursuant to that article shall also be filed.

(5) A description of the actions taken to repair the underground storage tank and to prevent future releases. If this involves a change as described in Section 25286 of the Health and Safety Code, then notification pursuant to that section shall be made.

[5]

(6) If the primary container is to continue to be used, then A description of how the method used to reactivate the interstitial monitoring system between the primary and secondary container after replacement or repair of the primary containment.

[6] Facility operator's name and telephone number.

[7] The approximate costs for cleanup to be submitted including voluntarily.

(c) The integrity of the secondary containment should be reviewed for possible deterioration under the following conditions:

(1) Hazardous substance in contact with the secondary containment is not compatible with the material used for secondary containment;

(2) The secondary containment is prone to mechanical damage from the mechanical equipment used to remove or clean up the hazardous substance collected in the secondary containment; or

(3) Hazardous substances, other than those stored in the primary containment system, are added to the secondary containment to treat or neutralize the released hazardous substance and the added substance or resulting substance from such a combination is not compatible with the secondary containment.

(d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts (e.g., secondary containment is breached due to deterioration), the release shall immediately be treated as a reportable release be reported pursuant to Section 2652 of this article.

[b]

(e) Whenever the local agency shall reviews the operator's monitoring reports and finds that one or more recordable unauthorized releases have occurred, the local agency shall review the information submitted included in the monitoring records pursuant to subsection Paragraph 2651 (a), of this section and shall review the permit, and may inspect the underground storage tank pursuant to the provisions of Article 10 Section 2712 Subsections 2712 [g] (e) and [h] (f)//of this subchapter Article 10. If the local agency shall finds that the containment and monitoring standards of Article 3 of this subchapter can no longer continue to be met, detected or the local agency shall revoke the permit require the operator to cease the operation of the underground storage tank system until appropriate modifications are made to allow compliance comply with the standards.

[c] Deterioration of the secondary container is likely when any of the following conditions exist:

[1] The secondary container will have some loss of integrity due to contact with the stored hazardous substance;

[2] The mechanical means used to cleanup the released hazardous substance could damage the secondary container; or

[3] Hazardous substances, other than those stored in the primary container, are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the cleanup process.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292, 25294, 25295

40 CFR 280.52

2652. Reporting, Investigation and Initial Response Requirements for Unauthorized Releases Requiring Reporting

[a] All other unauthorized releases shall be reported as specified in this section.

(a) Owners or operators required, by Section 2650 of this article, to report a release or condition shall comply with the requirements of this section.

(b) Within 24 hours after the an unauthorized release or condition has been detected, or should have been detected, using required monitoring, the owner or operator shall notify the local agency by submitting a leak report form and the State Office of Emergency Services or the regional Board, shall investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board.

(c) Within 5 working days of detecting the an unauthorized release, the owner or operator or permittee shall submit to the local agency a full written report to which includes all of the following information which is known at the time of filing the report:

(1) Operator's name and telephone number;

[1]

(2) A list of the types, quantities, and concentrations of hazardous substances released;

(3) The approximate time the unauthorized release occurred;

(4) The time the unauthorized release was discovered;

(5) The time the unauthorized release was stopped;

(6) A description of the actions taken to control and/or stop the release;

[2]

(7) A description of the corrective and remedial actions including investigations which were undertaken and will be the results of all investigations completed at that time conducted to determine the nature, and extent of soil, or ground water or surface water contamination due to the release;

[3]

(8) The method(s) of cleanup implemented to date, proposed cleanup actions, and approximate cost of actions taken to date a time schedule for implementing the proposed actions;

[4]

(9) The method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water [indicate whether a hazardous waste manifest[s] is utilized]. Copies of any hazardous waste manifests completed for off-site transport of these media shall be attached to the report;

[5]

(10) A description of the proposed method(s) of repair or replacement of the primary and secondary containment. If this involves a change as defined in Subsection 2712(a) of Article 10 of this subchapter] described in Section 25286 of the Health and Safety Code, then notification appropriate reports pursuant to that article section shall also be filed made.

(11) A description of the actions taken to prevent future releases.

[6] Facility operator's name and telephone number]

(d) Until investigation and cleanup is are complete, the owner or operator of permitted shall submit reports to the local agency and the or regional board, whichever is overseeing the cleanup, every 3 months or at a more frequent intervals as specified by a responsible agency the local agency or regional board. At a minimum, the reports shall include the information requested in Subsections Paragraphs (c)[2](7), (c)[3](8), and (c)[4](9) of this section. The reports shall be submitted as attachments to the Leak Site Update Form provided by the Board and obtained from the agency overseeing the cleanup. These reports shall contain all data and analyses resulting from

investigations and corrective actions. Information obtained in Sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency.

(e) Free product removal reports prepared in compliance with Section 2655 of this article shall be submitted to the local agency within 45 days of release confirmation.

[f] The reporting requirements of this section are in addition to any reporting requirements specified by Section 13271 of Division 7 of the Water Code and other laws and regulations].

(f) The owner or operator shall conduct the initial abatement and site characterization actions according to the requirements of Sections 2653 and 2654 of this article.

(g) If the test results from either an investigation conducted under Paragraph (f) of this section or any other procedures approved by the local agency do not confirm that a release from the underground storage tank has occurred, no further investigation or corrective action is required.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286, 25288, 25295

40 CFR 280.50 - 280.53

2653. Initial Abatement Actions

(a) *Owners or operators required by Paragraph 2652(f) this article, to conduct* initial abatement actions shall comply with the requirements of this section. Owners and operators shall:

(1) Remove as much of the hazardous substance from the underground storage tank as is necessary to prevent further release to the environment.

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

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

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

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(5) Investigate to determine the possible presence of free product, and if free product is present begin removal thereof as soon as practicable in accordance with the requirements of Section 2655 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.61, 280.62

2654. Initial Site Characterization

(a) Owners or operators required by Paragraph 2652(f) of this article to conduct initial site characterization actions shall comply with the requirements of this section.

(b) The owner or operator shall promptly assemble information about the underground storage tank site and the nature of the unauthorized release, including information gained while confirming the release or completing the *initial abatement actions in Section 2653* of this article. This information must include, but is not necessarily limited to, the following:

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

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

(3) Results of any investigation conducted under Paragraph 2652(f) of this article;

(4) Results of the free product investigations required under Paragraph 2653(a) (5) of this article to be used by the owner or operator to determine whether free product must be recovered;

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.63

2655. Free Product Removal

(a) At sites where investigations under Section 2653 of this article indicate the presence of free product, owners or operators shall comply with the requirements of this section and remove free product to the maximum extent practicable as determined by the local agency while continuing, as necessary, any actions required under Sections 2652 through 2654 of this article.

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

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c) The owner or operator shall use abatement of free product migration as a minimum objective for the design of the free product removal system.

d) The owner or operator shall handle any flammable products in a safe and competent manner.

e) The owner or operator shall prepare and submit to the local agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

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

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

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

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

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

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

(7) The means of disposal and/or proposed disposition of the recovered free product.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.64

Article 6. Allowable Repairs and Upgrade

2660. Applicability

(a) This article describes the conditions which must be met to repair or upgrade underground storage tank systems.

(b) Section 2661 of this article describes the repair requirements for underground storage tanks and piping.

(c) Section 2662 of this article describes upgrade requirements for corrosion protection for all underground storage tanks installed on or before January 1, 1984. Underground storage tanks constructed of fiberglass, steel clad with fiberglass or noncorrosive materials do not require upgrade to prevent releases due to corrosion.

(d) Section 2663 of this article describes the upgrade requirements for spill and overfill prevention equipment.

(e) Section 2664 of this article describes the upgrade requirements for underground pressurized piping.

(f) Upgrade requirement for underground storage tanks, for spill and overfill prevention, and for underground pressurized piping shall be completed on or before December 22, 1998.

Authority: HSC 25299.3

Reference: HSC 25295

(g) The owner may line an underground storage tank containing motor vehicle fuel not under pressure as a preventative measure. The owner shall notify the local agency of his intent to line the tank. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release. The owner shall notify the local agency prior to taking soil samples. If there has been no unauthorized release, the owner may line the tank in accordance with Section 2662 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25292.1, 25296

40 CFR 280

2661. Underground Storage Tank Repairs

(a) The evaluations described in Paragraphs (b) through (d) of this section must be completed before a primary container repair can be authorized by the local agency. The local agency shall deny the proposed repair if the owner fails to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below.

(b) It shall be determined if the cause of failure is isolated to the actual failure or is affecting other areas of the underground storage tank, or if any other causes of failure is affecting the primary container.

(c) Appropriate tests shall be conducted to determine the thickness of the underground storage tank(1) An ultrasonic test(2) and certified by a special inspector that the shell will provide structural support if the tank is repaired using the interior lining method. The special inspector shall make this certification by entering and inspecting the entire interior surface of the underground storage tank and shall base this certification upon the following procedures and criteria:

(A)

(1) If the underground storage tank is made of glass fiber, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section of the tank has compressed more than 1 percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service unless the tank is excavated and rehabilitated to correct the compression. The special inspector shall also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fiber reinforcing is required for certification before the underground storage tank may be lined.

(B)

(2) If the underground storage tank is made of steel, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank interior surface shall be abrasive blasted completely free of scale, rust, and foreign matter. The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness THE SPECIAL INSPECTOR SHALL SOUND ANY PERFORATIONS OR AREAS SHOWING CORROSION PITTING WITH A BRASS BALLPEEN HAMMER TO ENLARGE THE PERFORATION OR BREAK THROUGH A POTENTIALLY THIN STEEL AREA/ or the underground storage tanks THAT HAVE has any of the following defects SHALL NOT BE CERTIFIED OR RETURNED TO SERVICE:

(i) AN UNDERGROUND STORAGE TANK WHICH HAS An open seam or a split longer than 3 inches.

(ii) AN UNDERGROUND STORAGE TANK WHICH HAS A perforation larger than 1-1/2 inches in diameter or below a gauging opening larger than 2-1/2 inches in diameter.

(iii) AN UNDERGROUND STORAGE TANK WITH Five or more perforations in any 1 square-foot area. AND ANY SINGLE PERFORATION WHICH IS LARGER THAN 1/2 INCH IN DIAMETER

(IV) AN UNDERGROUND STORAGE TANK WITH 20 OR MORE PERFORATIONS IN A 500 SQUARE-FOOT AREA AND ANY SINGLE PERFORATION WHICH IS LARGER THAN 1/2 INCH IN DIAMETER/

(V) ANY FAILURE OR OPENING WITHIN 6 INCHES OF ANY SEAM OR WELD/

(iv) Multiple perforations of which any single perforation is larger than 1/2 inch in diameter.

(3) A test approved by the board as comparable to the tests specified in SUBParagraph (A) OF (B) (1) or (2) OF THIS SUBSECTION immediately above.

(d) It shall be demonstrated to the satisfaction of the local agency based on ONE OF the tests in SUBSECTION Paragraph (c) of this section that a serious corrosion or structural problem does not exist. If the local agency determines that a serious corrosion or structural problem exists, an interior lining repair may be used ALLOWED BY THE LOCAL AGENCY if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structural integrity or containment ability of the underground storage tank.

(e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

2662. Repair Methodology

(a) If an interior lining of an underground storage tank is approved by the local agency based on satisfactory demonstration of the issues raised in Section 2661 of this article, then the repair must be accomplished according to the applicable subsections of this section.

(b)

(f) If interior lining (coating) is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices.

(c)

(g) The repair material and any adhesives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the hazardous substance being stored.

(d)

(h) The repair material and lining process shall be listed or certified by a nationally recognized an independent testing organization based on voluntary consensus standards. The requirement shall become effective 1 year after the effective date of these regulations or 1 year after a listing or certification procedure is available, whichever is later.

(i) Holes shall be plugged using self-tapping bolts or boiler plugs or by welding and shall be repaired as follows:

(1) Repair areas shall be covered with epoxy or isophthalic polyester based resin. The resin shall be compatible with the intended use of the tank.

(2) Fiberglass cloth with a minimum weight of 1.5 oz/yd that is silane treated shall be worked completely into the resin base. The resin base shall be installed a minimum of two inches beyond the fiberglass cloth.

(3) All repairs shall include installation of fiberglass cloth with a minimum dimension of 12 x 12 inches centered over the area to be repaired. Larger repairs shall require the cloth to be large enough to provide cloth coverage of at least five inches of cloth bonded to the tank wall, measured from the outermost edge of the repair area, to the cloth's edge.

(4) A second layer of fiberglass cloth of the same weight as specified in Paragraph 2 above, shall be installed directly over the primary cloth layer, and shall be cut so to overlap the primary patch by 1.5 inches on all sides.

(5) This repair shall be allowed sufficient cure time, as determined by the resin manufacturer, to provide an acceptable base for tank lining installation.

(j) Steel underground storage tanks that exhibit external corrosion during the course of inspection or repair shall comply with the cathodic protection requirements in Section 2635.

(k) Repaired tanks shall be internally inspected by a coatings expert for conformance with the standards under which it was repaired. Certification of this repair work shall be provided to the local agency by the owner or operator and the party performing the internal inspection.

(l) Repairs to non-steel underground storage tanks shall be properly conducted in accordance with the tank manufacturer's specifications.

(m) Sections of piping and fittings that have released product as a result of corrosion or other damage must be replaced. Soil samples shall be taken in accordance with the requirements in Section 2672(d) of Article 7 of this chapter.

(n) Repaired tanks and piping must be tested for tightness within 30 days following the date of completion of the repair in accordance with the tank manufacturer's specifications. Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate article of this chapter.

(o) Underground storage tank owners and operators must maintain records of repairs for the remaining operating life of the tank that demonstrate compliance with the requirements of this section.

(p) A vapor or ground water monitoring system shall be installed to continuously monitor the repaired underground storage tank for future unauthorized releases, in accordance with Section 2647 or 2648, if no secondary containment system exists.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296

40 CFR 280.33

2662. Underground Storage Tank Upgrade

(a) All underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

(b) Owners of motor vehicle fuel tanks made of steel shall, on or before December 22, 1998, provide both interior lining and exterior cathodic protection by complying with the following upgrade requirements:

(1) Tank owners shall provide interior lining by complying with all requirements set forth in Section 2661 except Paragraph 2661(p) and those pertaining to non-steel tank and piping, and

(2) Cathodic protection shall be designed, installed, and inspected as specified in Section 2635(a)(2). All cathodic protection wells must be constructed in accordance with applicable state and local well regulations.

(3) The upgraded underground storage tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter as follows:

(A) The tank shall be cleaned so that no residue remains on the tank walls.

(B) The tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute.

(C) The inspector shall take interior diameter measurements and visually inspect the lining.

(D) If the liner shows discontinuity, compression or tension cracking or the tank cross-section has compressed more than one percent of the diameter measurement made at the time of lining, the tank shall be replaced or closed in accordance with Articles 3 or 7, respectively.

(E) The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thickness recorded on a form that identifies the location of each reading. If any area shows metal thickness less than 75 percent of the original wall thickness the tank shall be closed in accordance with Article 7.

(4) The upgraded underground storage tank shall be replaced or closed in accordance with Articles 3 or 7 at the end of the tank's operational life.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296

40 CFR 280.21

2663. Primary Container Monitoring Spill and Overfill Prevention Equipment Upgrade Requirements

[a] After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the underground storage tank test as described in Section 2643 of Article 4 of this subchapter.///The underground storage tank shall also be vacuum tested at a vacuum of 5.3 inches (135 mm) Hg for 1 minute. The vacuum test shall not be required if technology is not available for testing the underground storage tank onsite using accepted engineering practices.

[b] All pipelines shall be pressure tested following repair to assure the adequacy of the repair.///The testing shall be accomplished using accepted procedures.///Some acceptable procedures for pressure testing are provided in Appendix I of this subchapter.

Authority: H&SC 25299.3

Reference: H&SC 25296

(a) Underground storage tank systems shall have an overfill prevention system and a spill container which meets the requirements specified in Section 2635(c) of this article. The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. This requirement applies to all existing underground storage tanks, regardless of the date of installation, and must be complied with on or before December 22 1998.

(b) Owners or operators must use care to prevent releases due to spilling or overfilling. The owner, operator, or their agent must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25292.1

40 CFR 280.21

2664. Underground Pressurized Piping Upgrade Requirement

(a) All underground pressurized piping containing non-petroleum hazardous substances shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998.

(b) All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other materials compatible with stored products and resistant to corrosion. The secondary containment system shall meet the requirements specified in Section 2635(b). Any retrofitting of such piping which is required shall be completed no later than December 22, 1998.

(c) All underground pressurized piping shall be equipped with automatic line leak detectors no later than December 22, 1990.

(d) All underground pressurized piping and secondary containment shall be tested for tightness after installation and annually in accordance with the requirements specified in Section 2635(b)(4) and (5).

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292,25292.1

40 CFR 280.21

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Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of Section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased, for 12 consecutive months but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years will again be used for the storage of hazardous substances. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances consistent with permit conditions.

(c) The permanent closure requirements of Section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and where the owner or operator has no intent within the next 2 years to use the underground storage tank the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. even though there is no use being made of the stored substance/ In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to Section 2671 or 2672 of this article, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(f) At least thirty (30) days prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with Section 2671 or 2672 of this article, as appropriate. The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release///In this situation/ the underground storage tank owner shall submit the required proposal within 14 days of either the discovery of an unauthorized release or the implementation of actions taken to prevent or minimize the effects of the unauthorized release/

(g) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release do not qualify for temporary closure pursuant to Section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made which would ~~allow~~ make the underground storage tank ~~to be~~ capable of storing hazardous substances ~~pursuant to~~ in accordance with the permit issued by the local agency.

(h) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 ~~of this article~~.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to Section 13304 of the Water Code and any other applicable law or regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70, 280.71, 280.73

2671. Temporary Closure Requirements

~~(a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.~~

~~(b)~~

(a) The owner or operator shall comply with all of the following requirements to complete and maintain temporary closure of an underground storage tank:

(1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank~~, either in part or as a whole,~~ shall be inerted, as often as necessary ~~purged of the flammable vapors~~ to levels that ~~would~~ will preclude an explosion or to such lower levels as may be required by the local agency.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and the test results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.

(4) Except for required venting, all fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs.

(5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank ~~except if~~ unless the ~~pump~~ power services some other equipment which is not being closed such as the impressed current cathodic protection system.

~~(c)~~

(b) The monitoring required pursuant to the permit may be modified ~~by eliminated~~ by the local agency during the temporary closure period ~~by the local agency~~. In making a decision to modify such monitoring the local agency shall consider~~/ in making the above decision/~~ the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet ~~reached the monitoring locations and~~ been detected.

~~(d)~~

(c) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to ~~assure~~ verify that the temporary closure ~~actions~~ measures are still in place. ~~This~~ Such inspection shall include at least the following actions:

(1) Visual inspection of all locked caps and concrete plugs.

(2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to ~~subsection (b)~~ Paragraph (a)(3) of this section.

(d) The owner may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in Sections 2662, 2663, and 2664.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either ~~subsection~~ Paragraph (b) of this section for underground storage tank removal or ~~subsection~~ Paragraph (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate ~~subsection~~ paragraph of this section. ~~Subsections~~ Paragraphs (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks ~~proposing to remove the underground storage tank~~ subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code~~/ in addition to the following~~ and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank/ either in part or as a whole/ shall be inerted purged of the flammable vapors to levels that would shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.

(4) An owner of an underground storage tank or any part of an underground storage tank thereof that is destined for a specific reuse shall identify to advise the local agency of:

(A) The future name of the new owner of the underground storage tank owner;

(B) Name of the new operator;

(C) The location of use; and

(D) Nature of use.

(5) An owner of an underground storage tank or any part of an underground storage tank that is destined for reuse as scrap material shall identify this reuse to the local agency/

(c) Closure of Owners of underground storage tanks in place subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code/ and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

(3) The underground storage tank, except for the piping that is closed pursuant to subsection Paragraph (2) of this subsection, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

(A) A notice shall be placed in the deed to the property//The notice shall describe the exact vertical and areal location of the closed underground storage tank/ the hazardous substances it contained/ and the closure method/

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(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration can shall be based on the ongoing leak detection monitoring, ground water monitoring, or soil sampling analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If feasible the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, then soil samples shall be taken from the soils immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank shall be taken in accordance with Section 2649. A separate sample shall be taken for every 200 square feet for underground storage tanks or every for each 20 lineal-feet of trench for piping, at a minimum.

(2) If the underground storage tank or any portion thereof is not removed, soils sampling pursuant to Section 2645 of Article 4 of this subchapter shall be implemented, if feasible, at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank.

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If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with Section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this subchapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.71

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Article 8. Categorical and Site-Specific Variance Procedures

2680. General Applicability of this Article

(a) This article sets up procedures for categorical and site-specific variances from the requirements for the construction and monitoring of new and existing underground storage tanks as described in Chapter 6.7 of Division 20 of the Health and Safety Code and Articles 3 and 4 of this subchapter. A site-specific variance, if approved, would apply only to the specific site(s) approved for a variance. A categorical variance, if approved, would apply to the region, area, or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific. These procedures are in addition to those established by the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2681 of this article specifies the procedures that must be followed by the applicant and the State Board for categorical variance requests.

(c) Section 2682 of this article specifies the procedures that must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: H&SC 25299.3

Reference: H&SC 25299.4

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2681. Categorical Variances

(a) A categorical variance allows an alternative method of construction or monitoring which would be applicable at sites in more than one local agency's jurisdiction. Application for a categorical variance shall be made by the petitioner to the State Board on a form provided by the State Board.

(b) Application for a categorical variance shall include, but not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A description of the proposed alternative program, method, device, or process.

(3) A description of the region, area, or circumstances under which the variance would apply.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6) Written comments or recommendations from impacted local agencies.

(7) An initial payment fee of $11,000.

(c) The applicant will be required to pay a fee based on the actual costs of considering the application. The ~~State~~ Board will bill the applicant for additional costs or refund any ~~remaining part~~ unused portion of the initial fee~~, if necessary~~.

(d) The ~~State~~ Board, shall review all applications submitted and ~~shall~~ notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

~~(e) The State Board shall complete any documents necessary to satisfy the California Environmental Quality Act (Division 13), commencing with Section 21000, of the Public Resources Code).~~

~~(f)~~

(e) The ~~State~~ Board shall remand the application to the appropriate regional board if it determines that the application falls within Section 2682 of this article.

~~(g)~~

(f) The ~~State~~ Board shall hold at least 2 public hearings as set forth in Section 25299.4 of the Health and Safety Code. ~~In different areas of the state within 180 days of receipt of a complete variance application to consider the request for a categorical variance.~~

~~(h) Upon the close of a hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days, to allow any interested person to file additional exhibits, reports or affidavits.~~

~~(i)~~

(g) If the ~~State~~ Board grants the variance, it will prescribe the conditions the applicant must maintain and will describe the specific alternative for which the variance is being granted.

~~(j)~~

(h) All permit applicants who intend to utilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the local agency concurs in the applicability of the variance ~~applies~~, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the ~~State~~ Board provided all other permit conditions are met.

~~(k)~~

(i) The ~~State~~ Board shall modify or revoke a categorical variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The ~~State~~ Board shall not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and ~~with~~Chapters 1.5 and 6 of Division 3 of Title 23 of the California Code of Regulations ~~this chapter~~. The ~~State~~ Board shall notify all affected local agencies of ~~the~~ any modification or revocation. Local agencies shall appropriately modify or revoke all permits which were based on the categorical variance.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

2682. Site-Specific Variances

(a) A site-specific variance allows an alternative method of construction or monitoring which would be applicable at one or more sites within the a local agency's jurisdiction. Application for a site-specific variance shall be made by the permittee to the appropriate regional board on a form provided by the regional board.,

(b) At least 60 days Prior to applying to the Regional Board for a variance, the permittee applicant shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods or if the local agency does not act within 60 days of its receipt of the permittee's a complete construction and monitoring plan from the permittee/applicant, then the applicant may proceed with a submit the variance application to the Regional Board.

(c) An application for a site-specific variance shall include, but need not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device, or process shall be clearly identified.

(3) Any special circumstances on which the applicant would rely relies to justify the findings necessary for the variance, as prescribed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) Any documents necessary to satisfy environmental information or documentation requested by the Regional Board pursuant to the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(6) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6)

(7) A fee of $2,750 for variance requests at one site. A fee of $5,500 for variance requests at more than one site within one local agency's jurisdiction.

(d) The Regional Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

(e) The Regional Board shall hold a hearing on the proposed alternative variance as specified in Section 25299.4(c) of the Health and Safety Code. Within 90 days after receiving a complete variance application, however, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 5.7 of Division 20 of the Health and Safety Code for local agencies to join in the application.

(f) Any site-specific variance shall prescribe appropriate additional conditions and shall describe the specific alternative system for which the variance is being granted. The Regional Board shall notify the applicant, and the local agency, and the Board of its decision.

(g) The regional board shall consider the local agency's recommendations in rendering its decision.// The regional board shall consider the completeness and accuracy of the information provided by the applicant in subsection (c) of this section in rendering its decision.

(h) If the variance request is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the Regional Board. A local agency shall not modify the permit unless it determines that the modification is consistent with the variance that has been granted.

(i) The Regional Board shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The Regional Board shall not modify nor revoke the variance until it has followed procedures comparable to those prescribed in this section and Chapters 1.5 and 6 of Division 3 this chapter of Title 23 of the California Code of Regulations. The Regional Board shall notify the local agency and the Board of the modification or revocation. The local agency shall modify or revoke the permit for the site.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

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Article 9. Local Agency Additional Standards Request Procedures

2690. Applicability

This article sets up procedures for local agencies to request State Board authorization for more stringent design and construction standards other than those set by Article 3 of this subchapter. These procedures are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25299.2, 25299.4

2691. Additional Standards Request Procedures

(a) A local agency application for additional design and construction standards shall include:

(1) A description of the proposed design and construction standards which are in addition to those described in Article 3 of this subchapter.

(2) Clear and convincing evidence that the additional standards are necessary. Clear and convincing evidence that the additional standards are necessary to would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.

(3) Any documents required by the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(4) An initial fee of $5,500.

(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any remaining part unused portion of the initial fee, if necessary as appropriate.

(c) The Board shall conduct an investigation and public hearing on the proposed standards and their the need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards.

(d) The Board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The Board shall not modify nor revoke the authorization until it has followed procedures comparable to those presented in subChapters 1.5 and 6 of this chapter Division 3 of Title 23 of the California Code of Regulation.

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25299.4

Article 10. Permit Application, ~~Annual~~ Quarterly Report and Trade Secret Requirements

2710. General Applicability of Article

(a) This article describes specific administrative actions that must be ~~accomplished~~ undertaken by all underground storage tank owners, local agencies, and the ~~State~~ Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2711 of this article lists the information that must be submitted by the underground storage tank owner to the local agency as part of the permit application.

(c) Section 2712 of this article describes the conditions associated with a permit for the operation of an underground storage tank ~~that local agencies must include in all permits issued~~ and the conditions which local agencies must meet prior to permit issuance.

(d) Section 2713 of this article describes the ~~annual~~ quarterly report requirements for local agencies for unauthorized releases.

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(e) Section 2714 of this article specifies conditions that must be met by an underground storage tank owner when requesting trade secret ~~provisions~~ protection for any information submitted to the local agency, ~~State~~ Board, or Regional Board. It also specifies how the local agency, the ~~State~~ Board, or Regional Board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284; 25285, 25286, 25288, 25289, 25290, 25293

2711. Permit Application and Information

(a) The permit application shall include, but not be limited to, the following information ~~if it is applicable~~ to the extent such information is known to the permit applicant:

(1) The name and address of the person who owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number where the underground storage tank is located, and type of business, if any, involved.

(3) The name, address, and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.

(4) The name and telephone number of the person making the application, if other than the owner.

(5) A description of the underground storage tank including, but not limited to, the underground storage tank and auxiliary equipment manufacturer, year date of manufacture/ installation and tank capacity/ history of repairs/ and operation methods schedule/

[6] In the case of new underground storage tanks installed with systems for secondary containment utilizing membrane liners/ a certification by the membrane liner material manufacturer that the membrane liner meets the standards set forth in Subsection 2631[c] and [3][1] and [2] of Article 3 of this subchapter/ or/ if applicable/ Subsection 2633[e][1] and [2] of Article 3 of this subchapter/ and a certification by the membrane liner fabrication that the membrane liner meets the standards set/forth in Subsection 2631[c] and [3][3] of Article 3 of this subchapter/

[7]

(6) Construction details of the underground storage tank and any auxiliary equipment including, but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures/ backfill/ spill and overfill prevention equipment, interior lining, wrapping/ and cathodic corrosion protection methods (if applicable).

(7) A description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection.

(8) As an addendum to the permit application form, provide a scaled diagram or design or as-built drawing which indicates the location of the underground storage tank (underground storage tank, piping, auxiliary equipment) with respect to buildings or other landmarks.

(9) The description of the proposed monitoring program including, but not limited to, the following where applicable:

(A) Visual/inspection procedures;

(B) Underground storage tank testing release detection methods or inspection procedures;

(C) Inventory reconciliation including gauging and reconciliation methods;

(D) Soils sampling locations and methods and analysis procedures Pipeline leak detection methods;

(E) Vadose zone sampling locations and methods and analysis procedures;

(F) Ground water well(s) locations construction and completion development methods, sampling, and analysis procedures; and

[G] Frequency and sensitivity of any monitoring method sensing instrument or analytical method/

(10) A list of all the substances which previously, currently, or are proposed to be stored in the underground storage tank or tanks.

(11) Documentation to show compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

[11]

(12) If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the underground storage tank.

[12]

(13) The permit application must be signed by:

(A) The owner of the underground storage tank or a duly authorized representative of such owner;

(B) If the tank is owned by a corporation, partnership, or public agency, the application must be signed by;

(i) A principal executive officer at the level of vice-president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the underground storage tank(s) are located;

(ii) A general partner proprietor; or

(iii) A principal executive officer, ranking elected official, or authorized representative of a public agency.

(b) The owner or operator must inform the local agency of any changes to the information provided in paragraph (a) of this section within 30 days unless required to obtain approval before making the change.

(H)

(c) The permit application form provided by the Board shall be used and shall be accompanied by the local government and state surcharge fees set by the local agency.

(d) The local agency shall provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286, 25287

2712. Permit Conditions

[a] As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within 30 days after any changes in the usage of any underground storage tank, including:

[1] The storage of new hazardous substances;

[2] Changes in monitoring procedures; or

[3] The replacement or repair of all or part of any underground storage tank;

[b]

(a) As a condition of any permit to operate an underground storage tank, the permittee owner or operator shall report to the local agency any comply with the reporting and recording requirements for unauthorized releases [occurrences] as defined in Article 2 of this subchapter] within the time frame specified in Subsection 2652 [b] and [c] of Article 5 of this subchapter.

[c]

(b) Written records of all monitoring and maintenance performed shall be maintained on-site or off-site at a readily available location, by the operator if approved by the local agency, for a period of at least 3 years. [from the date the monitoring was performed] These records must be made available, upon request within 36 hours, to the local agency or the Board. The local agency may [require the submittal of the monitoring records or a summary at a frequency that they may establish] The written records of all monitoring performed in the past 3 years shall be shown to the local agency [regional Board, State Board] or duly authorized representative upon demand during any site inspection. Monitoring records shall include:

(1) The date and time of all monitoring or sampling;

(2) Monitoring equipment calibration and maintenance records;

(3) The results of any visual observations;

(4) The results of all sample analysis performed in the laboratory or in the field, including laboratory data sheets and analysis used;

(5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and

(6) The results of inventory readings and reconciliations.

[d]

(c) A permit to operate issued by the local agency shall be effective for 5 years. The permit shall show the state underground storage tank identification number(s) for which the permit was issued. Before a local agency shall not issues a new permit or renewal to operate an underground storage tank until the local agency shall inspect the underground storage tank and determines that the underground storage tank complies with the provisions of these regulations. The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.

[e] The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks.

[f]

(d) Permits may be transferred to new underground storage tank owners if: (1) the new underground storage tank owner does not change any conditions of the permit, (2) the transfer is registered with the local agency within 30 days of the change in ownership, and (3) any necessary modifications are made to the information in the initial permit application due to the change in ownership. State permit application forms are completed to show the changes. Transferred permits shall expire and be renewed on the original expiration date. A local agency may review, modify, or terminate the permit to operate the underground storage tank upon receiving the an ownership transfer request.

(g)

(e) The local agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected by the local agency or a special inspector within the prior 3 years and the inspection ~~revealed~~ indicated that the underground storage tank complies~~d~~ with Article 3 or 4 of this ~~sub~~chapter, as applicable, and with all existing permit conditions. The inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code. ~~If~~ the inspection ~~revealed~~ indicated noncompliance then the local agency must verify by a follow-up inspection that all required corrections have been implemented before renewing the permit.

(h)

(f) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall implement the corrections specified in the inspection report ~~file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance~~ and comply with either Article 3 or Article 4 of this ~~sub~~chapter, as appropriate, ~~or~~ and the permit conditions. ~~This plan and time schedule~~ The corrective action shall ~~also implement~~ include all of the recommendations ~~of~~ made by the local agency or special inspector. The local agency may ~~except~~ waive the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that ~~the~~ failure to implement the recommendation will not cause an unauthorized release.

(g) The local agency shall take appropriate enforcement action pursuant to Section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring

requirements specified in Article 3 or 4 of this chapter or the reporting requirements specified in Article 5 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284, 25285, 25286, 25288, 25289, 25293, 25294
40 CFR 280

2713. ~~Annual~~ Transmittal of Unauthorized Release Reports

(a) ~~The local agency shall notify the State Board of any changes in permits as defined in Subsections (d) or (f) of Section 2712 of this Article or any unauthorized releases as defined in Article 1 of this Subchapter annually on the State Board's annual report forms or other methods determined by the State Board.//This information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.//~~

Each local agency shall transmit unauthorized release information, submitted by the owner or operator pursuant to Article 5 of this chapter to the appropriate Regional Board.

(b) Local agencies shall transmit unauthorized release update report information, submitted by the owner or operator pursuant to Section 2712 of this Article, to the appropriate Regional Board for sites where they are overseeing cleanup. Local agencies shall transmit this unauthorized release update information on a quarterly schedule established by the Board.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286.

2714. Trade Secret Provisions

(a) Any person providing information in an application for a permit to operate an underground storage tank or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:

(1) Which portions of the information submitted are believed to be trade secrets;

(2) How long this information should be treated as confidential;

(3) Measures that have been taken to protect this information as confidential; and

(4) A discussion of why this information is ~~a~~ subject to trade secret/ protection, including references to statutory and case law as appropriate.

(b) If the local agency, the ~~State~~ Board, or the regional board determines that a request for ~~confidentiality~~ trade secret protection is clearly valid, the material shall be given trade secret protection as discussed in ~~subsection~~ Paragraph (f) of this section.

(c) If the local agency, the ~~State~~ Board, or the regional board determines that the request for ~~confidentiality~~ trade secret protection is clearly frivolous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency, the ~~State~~ Board, or the regional board is instructed otherwise by a court within 10 working days of the date of the letter.

(d) If the validity of the request for ~~confidentiality~~ trade secret protection is unclear, the local agency, the ~~State~~ Board, or the regional board will inform the person claiming trade secrecy that the burden is on him to justify the claim. The applicant will be given a fixed period of time to submit such additional information as the local agency, the ~~State~~ Board, or the regional board may request. The local agency, the ~~State~~ Board, or the regional board shall then evaluate the request on the basis of the definition of "trade secrets" contained in the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code and issue its decision. If the local agency, the ~~State~~ Board, or the regional board determines that the information is not a trade secret, it shall act in accordance with ~~subsection~~ Paragraph (c) of this section.

(e) All information received for which trade secrecy status is requested shall be treated as confidential as discussed in ~~subsection~~ Paragraph (f) of this section until a final determination is made.

(f) Information which has been found to be confidential or ~~regarding which a final determination has not been made~~ which is being reviewed to determine if confidentiality should exist, shall be immediately filed in a separate "confidential" file. If a document or portion of a document is filed in a confidential file, a notation should be filed with the ~~remainder of the~~ file document indicating that further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized representatives of the applicant or other governmental agencies ~~only~~ in connection with the ~~State~~ Board's, the regional board's, or the local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code or Division 7 of the Water Code.

(h) Nothing contained herein shall limit an applicant's right to prevent disclosure of information pursuant to other provisions of law.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25290

APPENDIX

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APPENDIX I, TABLE A

2635

SUGGESTED SPECIFICATIONS

APPLICABLE TO REGULATORY REQUIREMENTS

SECTION NUMBER		
2631(d)(6)	ASTM D-751,	"Coated Fabrics"
	ASTM D-1004	"Initial Tear Resistance of Plastic Film and Sheeting"
2631(d)(6)	ASTM D-413	"Rubber Property - Adhesion to Flexible Substrate"
	ASTM D-471	Rubber Property - Effect of Liquids"
	ASTM D-638	"Tensile Properties of Plastics"
	ASTM E-96	"Water Vapor Transmission of Materials"

ASME,	"ASME Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code"
UL-58,	"Steel Underground Tanks for Flammable and Combustible Liquids"
UL-1316,	"Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products"
UL-1746,	"External Corrosion Protection Systems for Steel Underground Storage Tanks"
UL-3615-1977,	"Standard for Reinforced Plastic Underground Storage Tanks for Petroleum Products"
ASTM G-1-72,	"Standard Recommended Practice for Preparing, Cleaning, and Evaluating Test Specimens"
ASTM G-31-72,	"Standard Recommended Practice for Laboratory Immersion Corrosion Testing of Metals"

	ULC CAN4-S603-M85	"Standard for Steel Underground Tanks for Flammable and Combustible Liquids"
	ULC CAN4-S603-1M85	"Standard for Galvanic Corrosion Protection Systems for Steel Underground Storage Tanks for Flammable and Combustible Liquids"
	ASTM D-4021-86	"Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks"
	NACE TM-10-69	"Laboratory Corrosion Testing of Metals for the Processing Industry"
	NACE TM-02-70,	"Method for Conducting Laboratory Controlled Velocity Laboratory Corrosion Tests"
2661(f)	API 1631	"Interior Lining of Underground Storage Tanks"
2663(b)	NFPA 329-1987	"Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquid".

APPENDIX I, TABLE B

ORGANIZATIONS THAT ADOPT VOLUNTARY CONSENSUS STANDARDS

ANSI	American National Standards Institute 1430 Broadway New York, NY 10018 (212) 354-3300
API	American Petroleum Institute 1220 L Street, N.W. Washington, D.C. 20005 (202) 682-8000
ASME	The American Society of Mechanical Engineers 1916 Race Street Philadelphia, PA 10017 (215) 299-5400
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103 (215) 299-5400
NACE	National Association of Corrosion Engineers 1440 South Creek Drive Katy, TX 77450 (713) 492-0535

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269
(617) 328-9290

NSF National Sanitation Foundation
3475 Plymouth Road
Post Office Box 1468
Ann Arbor, MI 48106
(313) 769-8010

UL Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

ULC Underwriters Laboratories of Canada, Inc.
7 Crouse Road
Scarborough, Ontario

"Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule", EPA *Fed. Reg. Vol. 49, No. 209, October 26, 1984.*

"Manual of Methods for the Chemical Analysis of Water and Wastes", EPA 600/4-79-020, March 1979.

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities", EPA 530/SW-611, August 1977.

"Soil Sampling Quality Assurance User's Guide", EPA 600/4-84-043, May 1984.

"Hazardous Waste Land Treatment", EPA SW-874, April 1983.

"Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", EPA 600/4-82-057, July 1982.

"Handbook for Sampling and Sample Preservation of Water and Wastewater", EPA 600/4-82-029, September 1982.

"Manual of Analytical Quality Control for Pesticides and Related Compounds in Human and Environmental Samples", EPA 600/2-81-059, April 1981.

"EPA Test Methods for Evaluating Solid Waste - Physical/Chemical Method", SW-846

"Manual of Analytical Methods for the Analysis of Pesticides in Human and Environmental Samples", EPA 600/8-80-038.

"Standard Methods for the Examination of Water and Wastewater", American Public Health Assoc., American Water Works Assoc., Water Pollution Control Federation, 15th Edition, 1981.

"Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency", Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater, 1981.

"Guidelines on Sampling and Statistical Methodologies for Ambient Pesticide Monitoring", Federal Working Group on Pest Management, October 1974.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Part 31, Water", 1982.

"Methods for Determination of Inorganic Substances in Water and Fluvial Sediments of the USGS Geological Survey".

"Methods for Analysis of Organic Substances in Water", U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A3, 1972.

"Criteria for Identification of Hazardous and Extremely Hazardous Wastes", Article 11, Chapter 30, Division 4, Title 22.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Parts 23-25, Petroleum Products and Lubricants, 1981".

"Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)".

APPENDIX II.

SUCTION PIPING MONITORING

Suction pipelines shall be monitored for the presence of air in the pipeline by observing the suction pumping system for the following indicators:

(1) The cost/quantity display wheels on the meter suction pump skip or jump during operation;

(2) The suction pump is operating, but no motor vehicle fuel is being pumped;

(3) The suction pump seems to overspeed when first turned on and then slows down as it begins to pump liquid; and

(4) A rattling sound in the suction pump and erratic flow indicating an air and liquid mixture.

If any of the above indicators are observed during testing of the suction piping system, the pipeline check valve should be inspected to determine if it is seated tightly. If there is any doubt following the inspection that the valve seats tightly, it should be repaired, replaced, or sealed off. Then the suction pumping test should be repeated and, if air is still entering the suction line, it is assumed that the pipe is leaking underground.

Appendix III.

Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in Section 25292(b)(5) of Chapter 6.7 of Division 20 of the Health and Safety Code (see below). This section refers to Section 2641(c)(7) of the California Code of Regulations as it existed on August 13, 1985 as follows:

2641(c)(7) Underground Storage Tank Gauging and Testing:

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + or - 5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

(B) The underground storage tank gauging shall be performed according to the following specifications:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals.

(ii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred. The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

H&SC 25292(b) (5) For monitoring underground storage tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:

(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985.

(B) If the tank has a capacity of more than 5,000 gallons, the tank shall be monitored pursuant to the methods for all other tanks specified in this subdivison.

APPENDIX IV

Examples of

Quantitative Release Detection Methods for Tanks

Detection Method	Performance Standards
Automatic Tank Gauging (Monthly)	Subsection 2643 (c)(1)
Tank Integrity Test (Annually) and Inventory Reconciliation (Monthly)	Subsection 2643 (c)(2)(A) and Subsection 2643 (c)(2)(B)
Manual Tank Gauging (Weekly)	Section 2645

Examples of

Quantitative Release Detection Methods for Pressure Piping

Detection Method	Performance Standards
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Monthly)	Subsection 2643 (d)(1) and Subsection 2643 (d)(2)
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Automatic Line Leak Detector (Hourly) and Line Tightness Test (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Electronic Line Leak Detector (Hourly)	Subsection 2643(d)(3)

Examples of

Quantitative Release Detection Methods for Suction Piping

Line Tightness Test (Triannually)	Section 2643 (e)
and	
Daily Monitoring	Appendix II

Examples of

Qualitative Release Detection Methods

Vapor Monitoring	Section 2644 (b) and 2647
or	
Ground Water Monitoring	Sections 2644 (c) and 2648

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APPENDIX V

EVALUATION PROCEDURE FOR LEAK DETECTION EQUIPMENT

Leak detection equipment can be evaluated for performance in accordance with one of the following three evaluation procedures:

1. EPA Standard Test Procedures

EPA has developed a series of standard test procedures that cover most of the methods commonly used for underground storage tank leak detection. These include:

a. "Standard Test Procedures for Evaluating Leak Detection Methods: Volumetric Tank Tightness Testing Methods"

b. "Standard Test Procedures for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods"

c. "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems"

d. "Standard Test Procedures for Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods"

e. "Standard Test Procedures for Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors"

f. "Standard Test Procedures for Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors"

g. "Standard Test Procedures for Evaluating Leak Detection Methods: Pipeline Leak Detection Systems"

Each test procedure provides an explanation of how to conduct the test, how to perform the required calculations, and how to report the results. The results from each standard test procedure provide the information needed by tank owners and operators to determine if the method meets the regulatory requirements.

EPA standard test procedures must be conducted by an independent third party under contract to the manufacturer in order to prove compliance with the regulations. Independent third-parties may include consulting firms, test laboratories, not-for-profit research organizations, or educational institutions with no organizational conflict of interest. In general, evaluations are more likely to be fair and objective the greater the independence of the evaluating organization.

2. National Consensus Code or Standard

A second way for a manufacturer to prove the performance of leak detection equipment is to have an independent third party evaluate the system following a national voluntary consensus code or standard developed by a nationally recognized association (e.g., ASTM, ASME, ANSI, etc.). Throughout the technical regulations for underground storage tanks, EPA has relied on national voluntary consensus codes to help tank owners decide which brands of equipment are acceptable. Although no such code presently exists for evaluating leak detection equipment, one is under consideration by the ASTM D-34 subcommittee. Guidelines for developing these standards may be found in the U.S. Department of Commerce "Procedures for the Development of Voluntary Product Standards" (FR, Vol. 51, No. 118, June 20, 1986) and OMB Circular No. A-119.

3. Alternative Test Procedures Deemed Equivalent to EPA's

In some cases, a specific leak detection method may not be adequately covered by EPA standard test procedures or a national voluntary consensus code, or the manufacturer may have access to data that makes it easier to evaluate the system another way. Manufacturers who wish to have their equipment tested according to a different plan (or who have already done so) must have that plan developed or reviewed by a nationally recognized association or independent third-party testing laboratory (e.g. Factory Mutual, National Sanitation Foundation, Underwriters Laboratory, etc.). The results should include an accreditation by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as the EPA standard test procedure. In general, this will require the following:

a. The evaluation tests the system both under the no-leak condition and an induced-leak condition with an induced leak rate as close as possible to (or smaller than) the performance standard. In the case of tank testing, this will mean testing under both 0.0 gallon per hour and 0.10 gallon per hour leak rates. In the case of ground water monitoring, this will mean testing with 0.0 and 0.125 inch of free product.

b. The evaluation should test the system under at least as many different environmental conditions as the corresponding EPA test procedure.

c. The conditions under which the system is evaluated should be at least as rigorous as the conditions specified in the corresponding EPA test procedure. For example, in the case of volumetric tank tightness testing, the test should include a temperature difference between the delivered product and that already present in the tank, as well as the deformation caused by filling the tank prior to testing.

d. The evaluation results must contain the same information and should be reported following the same general format as the EPA standard results sheet.

e. The evaluation of the leak detection method must include physical testing of a full-sized version of the leak detection equipment, and a full disclosure must be made of the experimental conditions under which: (1) the evaluation was performed, and (2) the method was recommended for use. An evaluation based solely on theory or calculation is not sufficient.

APPENDIX VI

CERTIFICATE OF TANK AND PIPE INSTALLATIONS

The owner or operator can use the form below to certify that the UST and piping were installed properly.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
UNDERGROUND STORAGE TANK INSTALLATION
CERTIFICATION OF COMPLIANCE

FORM C

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM

I. SITE LOCATION

STREET _____

CITY _____ COUNTY _____

II. INSTALLATION (mark all that apply):

- ☐ The installer has been certified by the tank and piping manufactures.
- ☐ The installation has been inspected and certified by a registered professional engineer.
- ☐ The installation has been inspected and approved by the implementing agency.
- ☐ All work listed on the manufacturer's installation checklist has been completed.
- ☐ The installation Contractor has been certified or licensed by the Contractors State License Board.
- ☐ Another method was used as allowed by the implementing agency. (Please specify.)

_____

III. OATH I certify that the information provided is true to the best of my belief and knowledge.

Tank Owner/Agent _____ Date _____

Print Name _____ Phone ( ) _____

Address _____

LOCAL AGENCY USE ONLY

STATE TANK I.D. #	COUNTY #	JURISDICTION #	FACILITY #	TANK #

FORM C (5/91) THIS FORM MUST BE ACCOMPANIED BY PERMIT APPLICATION FORMS A & B UNLESS THEY HAVE BEEN FILED PREVIOUSLY FORM2C/CS

APR 12 1991

PROPOSED AMENDMENTS. (NEW TEXT IS UNDERLINED; DELETED TEXT IS CROSSED OUT.)

CALIFORNIA CODE OF REGULATIONS

TITLE 23 WATERS

DIVISION 3 WATER RESOURCES CONTROL BOARD

~~SUB~~CHAPTER 16 UNDERGROUND STORAGE TANK REGULATIONS

Article 2/ 1. Definition of Terms

~~2620~~

2610. Definitions/Applicability of Definitions

(a) Unless the context clearly requires otherwise, the terms used in this ~~SUB~~chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by Section 2611 of this article.

(b) Except as otherwise specifically provided herein, the following terms are defined in Section 25281 of Chapter 6.7 of Division 20 of the Health and Safety Code:

NOT IN CCR. P. 129 of CCR HAS IN THE APPROPRIATE SECTION " Here

Automatic line leak detector

Board

Department

Facility

Federal act

Hazardous substance

error in CCR please refer to letter

Local agency

Operator

Owner

Person

Pipe

Primary containment

Product-tight

Release

Secondary containment

Single-walled

Special inspector

Storage/store

SWEEPS

Tank

Tank integrity test

Tank tester

Unauthorized release

Underground storage tank

Underground tank system/tank system

Authority: Health and Safety Code (H&SC) 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25291

~~2621~~

2611. Additional Definitions

Unless the context clearly requires otherwise, the following definitions shall apply to terms used in this ~~SUB~~chapter.

"Coatings expert" means a person who, by reason of thorough training, knowledge and experience in the coating of metal surfaces, is qualified to engage in the practice of internal tank lining inspections. This person must be independent of any lining manufacturer or applicator and have no financial interest in the tank or tanks being monitored.

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Corrosion specialist" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on metal underground storage tanks and associated piping. The term includes only persons who have been certified as being qualified by the National Association of Corrosion Engineers or registered professional engineers who have certification or licensing that requires education and experience in corrosion control of underground storage tanks and associated piping.

"Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. The term includes only persons who have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

~~"Double walled tank" means a container with two complete shells which provide both primary and secondary containment. The outer shell must provide structural support and must be constructed primarily of noncorrosive materials including but not limited to concrete, steel, and plastic.~~

"Emergency containment" means a containment system for accidental spills which are infrequent and unpredictable.

"Existing underground storage tank" means any underground storage tank that was installed prior to January 1, 1984. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid).

"Farm tank" means any one or combination of tanks located on a farm that holds no more than 1,100 gallons of motor vehicle fuel which is used primarily for agricultural purposes and is not held for resale.

"First ground water" means the uppermost saturated horizon encountered in a bore hole.

"Ground water" means subsurface water which will flow into a well.

"Heating oil tank" means a tank located on a farm or at a personal residence which holds no more than 1,100 gallons of home heating oil which is used consumptively at the premises where the tank is located.

"Holiday" when used with respect to underground storage tank coating or cladding means a pinhole or void in a protective coating or cladding.

"Hydraulic lift tank" means an underground storage tank which holds hydraulic fluid to operate lifts, elevators, and other similar equipment.

"Independent testing organization" means an organization which tests products or systems for compliance with voluntary consensus standards. To be acceptable as an independent testing organization, the organization must not be owned or controlled by any client, industrial organization, or any other person or institution with a financial interest in the product or system being tested. For an organization to certify, list, or label products or systems in compliance with voluntary consensus standards, it shall maintain formal periodic inspections of production of products or systems to ensure that a listed, certified or labeled product or system continues to meet the appropriate standards.

"Independent third party" means independent testing organizations, consulting firms, test laboratories, not-for-profit research organizations and educational institutions with no financial interest in the matters under consideration. An independent third party must not be owned or controlled by any client, industrial organization, or any other institution with a financial interest in the matter under consideration.

"Integral secondary containment" means a secondary containment system manufactured as part of the underground storage tank.

"Interstitial space" means the space between the primary and secondary containment systems.

"Liquid asphalt tank" means an underground storage tank which contains steam-refined asphalts.

"Liquefied petroleum gas tank" means an underground storage tank which contains normal butane, isobutane, propane, or butylene (including isomers) or mixtures composed predominantly thereof in liquid or gaseous state having a vapor pressure in excess of 40 pounds per square inch absolute at a temperature of 100 degrees of Fahrenheit.

"Manufacturer" means any business which produces any item discussed in these regulations.

"Membrane liner" means any membrane sheet material used in a system for secondary containment system. A membrane liner must be compatible with the substance stored.

"Membrane liner fabricator" means any company which converts a membrane liner into a system for secondary containment.

"Membrane manufacturer" means any company which processes the constituent polymers into membrane sheeting from which the membrane liner is fabricated into a system for secondary containment.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn.

Motor vehicle fuel tank" means an underground storage tank that contains a product which is intended to be used primarily to fuel motor vehicles or fuel aircraft engines.

"Nationally recognized independent testing organization" means any one of the following organizations or other organizations approved by the Board:

American National Standards Institute (ANSI)
American Society of Mechanical Engineers (ASME)
American Society for Testing and Materials (ASTM)
National Association for Corrosion Engineers (NACE)
National Sanitation Foundation (NSF)
Underwriters Laboratories (UL)
Underwriters Laboratories of Canada, Inc. (ULC)

"New underground storage tank" means any underground storage tank subject to this §§chapter which is installed after the effective date of this §§chapter as amended or which complies with the requirements of Article 3 of this §§chapter as amended; or which was installed after January 1, 1984, and before the effective date of this §§chapter as amended pursuant to a permit issued by the local agency implementing the provisions of Chapter 6.7 of Division 20 of the Health and Safety Code relating to new underground storage tanks.

"Non-volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and consideration of circumstances and physical phenomena internal or external to the tank.

"Perennial ground water" means ground water that is present throughout the year.

"Petroleum" means crude oil, or any fraction thereof, which is liquid at standard conditions of temperature and pressure, which means at 60 degrees Fahrenheit and 14.7 pounds per square inch absolute.

"Pipeline leak detector" means a continuous monitoring system for underground piping capable of detecting at any pressure a leak rate equivalent to a specified leak rate and pressure with a probability of detection of 95 percent or greater and a probability of false alarm of 5 percent or less.

"Probability of detection" means the likelihood, expressed as a percentage, that a test method will correctly identify a leaking underground storage tank.

"Probability of false alarm" means the likelihood, expressed as a percentage, that a test method will incorrectly identify a "tight" tank as a leaking underground storage tank.

"Qualitative release detection method" means a method which detects the presence of a hazardous substance or suitable tracer outside the underground storage tank being tested.

"Quantitative release detection method" means a method which determines the integrity of an underground storage tank by measuring a release rate or by determining if a release exceeds a specific rate.

"Release detection method" means a method used to determine whether a release of a hazardous substance has occurred from an underground tank system into the environment or into the interstitial space between an underground tank system and its secondary containment.

"Septic tank" means an underground storage tank designed and used to receive and process biological waste and sewage.

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground ~~storage~~ tank system volume, including the volume of any *connected piping, is below the ground surface* or enclosed below earthen materials.

"Sump", "pit", "pond", or "lagoon" means a depression in the ground which lacks independent structural integrity and depends on surrounding earthen material for structural support of fluid containment.

"Tank integrity test" means a test method that can ascertain the physical integrity of an underground storage tank. The term includes only test methods which are able to detect a leak of 0.1 gph with a probability of detection of at least 95 percent and a probability of false alarm of 5 percent or less. The test method may be either volumetric or non-volumetric in nature. A leak rate is reported *using a volumetric test method, whereas, a non-volumetric test method* reports whether or not a substance or physical phenomenon is detected which may indicate the presence of a leak.

"Unauthorized release" as defined in Chapter 6.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, use, or disposal.

"Volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and comparison of tank volume.

"Voluntary consensus standards" means standards that are developed after persons with a direct and material interest have had a right to express a viewpoint and, if dissatisfied, to appeal at any point. Voluntary consensus standards shall be developed after everyone with a direct and material interest has had a right to express a viewpoint and, if dissatisfied, to appeal at any point (a partial list of the organizations that adopt voluntary consensus standards are shown in Appendix I, Table B).

"Wastewater treatment tank" means an underground storage tank located inside a public or private wastewater treatment facility. The term includes untreated wastewater holding tanks, oil water separators, clarifiers, sludge holding tanks, filtration tanks, and clarified water tanks that do not continuously contain hazardous substances.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25282, 25283

Code of Federal Regulations, Title 40, Part 280.10 (40 CFR 280.10)

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Article 1/ 2 General Provisions

2610/

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this ~~sub~~chapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure/ of underground storage tanks; ~~requirements~~/ and specify variance request procedures.

(b) Persons who own one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. ~~In Section 2611 of this article/~~ If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to/ monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable ~~the~~ permit/. ~~and properly close the underground storage tank as required by the permit/~~ The owner shall remain responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

DIFFERENT ORDER IN CCR - see p. 126

CCR ERROR see p 128 of CCR

(c) Counties shall implement the regulations in this ~~sub~~chapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits [operating permit(s)] to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this ~~sub~~chapter within its boundaries in accordance with Section 25283 of the Health and Safety Code. Local agencies ~~A permit may be~~ shall issued an operating permit for each underground storage tank, for several underground storage tanks, or for ~~a~~ each facility, as appropriate, within their jurisdiction.

(d) ~~All~~ Owners of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this ~~sub~~chapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this ~~sub~~chapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this ~~sub~~chapter. In addition, ~~All~~ owners ~~and/or operators~~ of underground storage tanks subject to this ~~sub~~chapter must comply with the release reporting requirements of Article 5 of this ~~sub~~chapter, the repair and upgrade requirements of Article 6 of this ~~sub~~chapter, the closure requirements of Article 7 of this ~~sub~~chapter, and the underground storage tank operating permit application requirements of Article 10 of this ~~sub~~chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25283, 25284, 25299.1, 25299.3, 40 CFR 280

~~2611/~~

2621. Exemptions

(a) The ~~owners of~~ term "underground storage tank" ~~s that part~~ does not include any of the following ~~conditions shall be exempt from the provisions of this subchapter~~:

(1) A farm tank.

(2) A heating oil tank.

(3) Hydraulic lift tanks with a capacity of less than 110 gallons.

(4) A liquefied petroleum gas tank.

(5) A liquid asphalt tank.

(6) A septic tank.

(7) A sump, pit, pond, or lagoon.

(8) A wastewater treatment tank except a tank which is part of an underground storage tank system.

(9) A pipeline located in a refinery or in an oil field.

(10) Tanks and catch basins designed for storm water collection.

(11) Tanks containing radioactive material that are regulated by other federal, state or local agency such as; spent fuel pools, radioactive waste storage tanks, and similar tanks.

(12) An emergency containment tank kept emptied to receive accidental spills and approved for such use by the appropriate local agency.

(13) Drums located in basements which contain 55 gallons or less of material.

~~(1) Underground storage tanks that are located within the jurisdictions// of counties or cities where the county or city had, prior to January 1, 1984, adopted an ordinance which, at a minimum, implements the requirements of Subchapter 8/7 of Division 20 of the Health and Safety Code pertaining to construction and monitoring standards for new and existing underground storage tanks provided that/~~

(A) The ordinance as it may be amended continues to meet at a minimum the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code; and

(B) The county or city issues permits for underground storage tanks pursuant to the ordinance.

(2)

(14) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the underground storage tank has been issued a hazardous waste facilities permit for the underground storage tank by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

b) Sumps which are a part of a monitoring system as required under Article 3 of this subchapter are considered part of the secondary containment or leak detection system of the primary containment and are required to meet the appropriate construction criteria.

c) The owner of a farm or heating oil tank or any other tank which is excluded from regulation as an underground storage tank by virtue of its use shall, within 120 days after change in or discontinuance of the use which provided the exclusion:

62lc

(1) Apply for and promptly obtain a valid operating permit; or

(2) Close the tank in accordance with Article 7 of these regulations.

Resumption of a use which justifies an exclusion from regulation within 120 days after change or discontinuation of the use which provided the exclusion will reactivate the exclusion.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299.1

40 CFR 280.10, 280.12

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Article 3. New Underground Storage Tank Construction and Monitoring Standards

2630. General Applicability of Article

~~(a) This article contains statewide minimum standards for the construction/ installation/ and monitoring of new underground storage tanks that contain hazardous substances/~~

(a) The standards in this article apply to owners of new underground storage tanks. Underground storage tanks installed between January 1, 1984 and the effective date of these amendments may be deemed to be in compliance with the standards in this article if they were installed in accordance with Federal and State standards that existed at the time of installation. However, the requirements in Article 6 must be complied with if applicable.

(b) Sections 2631 and 2632 of this article specify construction and monitoring standards for all new underground storage tanks. New underground storage tanks that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in Sections 2633 and 2634 of this article in lieu of those specified in Sections 2631 and 2632 of this article./ ~~respectively/~~ However, if the construction standards in Section 2633 of this article are used, then the monitoring standards of Section 2634 of this article ~~must~~ shall also be used.

(c) All new underground storage tanks, piping, and secondary containment systems ~~must~~ shall comply with Section 2635 of this article.

APR 1[illegible]19

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

'SMALL "a" ~ CCR

2631. Construction Standards for New Underground Storage Tanks

(a) ~~Primary and secondary levels of containment shall be required for~~ All new underground storage tanks including associated piping used for the storage of hazardous substances shall be required to have primary and secondary levels of containment. Secondary containment can be manufactured as an integral part of the primary containment or it can be constructed as a separate containment system. ~~as defined in Article (2) of this subchapter/~~

(b) All primary containment including any integral secondary containment system, shall be ~~produced/tight/~~ designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components such as special accessories, fittings, coatings or linings, monitoring systems and level controls used to form the underground storage tank system shall bear an approval from an independent testing organization. This requirement shall become effective on July 1, 1991 for underground storage tanks, January 1, 1992 for piping, and July 1, 1992 for all other components. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the following minimum information:

(1) Engineering standard used;

(2) Nominal diameter in feet;

(3) Nominal capacity in gallons;

(4) Degree of Secondary Containment;

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SMALL "m" in CCR "OF" in CCR p130

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(5) Useable capacity in gallons;

(6) Design pressure in psig;

(7) Maximum operating temperature in degrees Fahrenheit;

(8) Construction materials;

(9) Year manufactured; and

(10) Manufacturer.

(c) A primary containment system with or without an integral secondary containment system shall have wear plates (striker plates) installed, center to center, below all accessible openings. The plates shall be made of steel or other appropriate material if steel is not compatible with the hazardous substance stored. The width of the plate shall be at least eight inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 1/8 inch and those made of other materials shall be of sufficient thickness to provide equivalent protection. The plate, if under 1/4 inch thick, shall be rolled to the contours of the underground storage tank and all plates shall be bonded or tack welded in place.

~~(d)~~

(d) A secondary containment system such as vaults, shall be designed and constructed according to an engineering specification approved by a state licensed engineer or according to a nationally recognized industry code or engineering standard. The engineering specification shall include the construction procedures. ~~All secondary containers shall be constructed of~~

Materials used to construct the secondary containment system shall have sufficient thickness, density, and corrosion resistance ~~composition~~ to prevent structural weakening or damage to ~~of~~ the secondary containment system as a result of contact with any released hazardous substance. ~~and shall be capable of containing any unauthorized release of the hazardous substance stored within the primary container(s) for at least the maximum anticipated period sufficient to allow detection and removal of the unauthorized release.~~ The following requirements apply to all secondary containment systems:

~~(d) If a hazardous substance has come into contact with the secondary container and either additional primary containers exist within the secondary container or the leaking primary container is repaired as specified in Article 6 of this subchapter or closed as specified in Article 7 of this subchapter and replaced by a new primary container, the owner shall demonstrate to the satisfaction of the local agency that the requirements of Subsection (c) of this section are still achievable or replace the secondary container.~~

~~(e)~~

(1) The secondary containment system shall be constructed ~~have the ability~~ to provide at least ~~contain~~ the following volumes:

~~(1)~~

(A) ~~At least~~ 100 percent of the usable capacity of ~~volume of~~ the primary containment system where only one primary container is within the secondary containment system.

~~(2)~~

(B) In the case of multiple primary containers within a single secondary containment system, the secondary containment system shall be large enough to contain 150 percent of the volume of the

largest primary container ~~placed in~~ within it, or 10 percent of the aggregate internal volume of all primary containers ~~in~~ within the secondary containe~~r~~ment/ system whichever is greater. When all primary containers are completely enclosed within the secondary containment system, the restrictions of this subparagraph do not apply.

~~(f)~~

(2) If the secondary containe~~r~~ment system is open to rainfall, ~~then~~ it shall be constructed ~~able~~ to accommodate the volume of precipitation which could enter the secondary containe~~r~~ment system during a 24-hour, 100 25-year storm in addition to the volume ~~of hazardous substance storage~~ required in Paragraph ~~subsection (c)~~ (d)(1) of this section.

~~(g)~~

(3) If backfill material is placed in the secondary containment system, the volumetric requirements for the pore space ~~of a granular material placed in the secondary container as backfill for the primary container~~ shall be equal to ~~or greater than that~~ the requirement in Paragraph ~~subsection 260.11(c)~~ (d)(1) of this section. The available pore space in the secondary containe~~r~~ment system backfill shall be determined using ~~appropriate~~ standard engineering methods and safety factors. ~~and shall consider~~ The specific retention and specific yield of the backfill material, the location of any ~~the~~ primary container within the secondary containe~~r~~ment, and the proposed method of operation for the secondary containe~~r~~ment system shall be considered in determining the available pore space.

~~(h)~~

(4) The secondary containe~~r~~ment system shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any

~~precipitation/ subsurface infiltration/ of hazardous substance released from the primary container~~ liquid within the system.

~~(i)~~

P.130 NOT IN CCR NEED TO UNDERLINE TO ADD. P.130

(5) The floor of the secondary containe~~r~~ment system shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and be covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access; and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism. ~~If this access casing is within a secured facility/ the requirements for a locked cap may be waived by the local agency.~~ The casing shall have sufficient thickness ~~be thick enough~~ to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.

~~(j)~~

(6) ~~Systems for~~ Secondary containment systems utilizing membrane liners shall be certified by an independent testing organization. A membrane liner shall not contain any primary nutrients or food-like substances attractive to rodents and must meet the requirements in Table 3.1 after 30-day immersion in the stored hazardous substance ~~following requirements~~.

Table 3.1

Standards for Membrane Liners

	Property	Test Method		Requirement
		Unsupported Liners	Supported Liners	
(A)	Tensile strength	ASTM 638	ASTM D751	
	Tensile strength at yield		Procedure B (Cut Strip Method)	>300 lbs/in of width
	Tensile strength at break			>200 lbs/in of width
(B)	Permeability	ASTM E96	ASTM E96	<0.65 gram/meter^2-hr
(C)	Seam strength	ASTM D413	ASTM D751	= Parent material
(D)	Solubility	ASTM D471	ASTM D471	<0.10% by weight
(E)	Puncture		FTMS 101B Method 2031	350 lbs.
		FTMS 101 Method 2065		80 lbs.
(F)	Tear		ASTM D751	125 lbs.
		ASTM D1004 DIEC		50 lbs.

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(1) The membrane liner shall have a permeability factor of 0.25 ounces per square foot per 24 hours or less///Such permeability shall constitute the maximum rate of transport over time of the hazardous substance proposed for storage///Permeability shall be evaluated according to accepted engineering practices for materials testing///Some acceptable methods for determining the permeability are provided in Appendix I of this subchapter/

(2) The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(e) of this section only if the liner material meets the following standards///The material properties specified in these standards shall be determined using accepted engineering practices for materials testing///Some acceptable methods for determining these properties are provided in Appendix I of this subchapter/

(A) The volume swell after a 24/hour period of immersion in the stored hazardous substance shall not exceed 3 percent of the original liner membrane material thickness/

(B) The maximum change in elongation//of the liner membrane material at break after 24 hours of immersion in the stored hazardous substance shall not exceed 2 percent of the original elongation/

[C] The liner membrane material shore A hardness [brittleness] after 24 hours of immersion in the hazardous substance shall be within 5 percent of the original hardness;

[D] For a containment test, the rate of transport through the liner membrane material of the hazardous substance after a period of 24 hours shall not exceed 5 percent by weight of the hazardous substance being tested;//The liquid weight for the test shall be no greater than that expected in actual site conditions;

[E] The rate of solubility of the liner membrane material in the hazardous substance for a period of 24 hours shall not exceed 0/1 percent by weight of the section of liner being tested;

[3] The liner seam strength shall be equal to the tensile strength of the parent material when tested in accordance with accepted engineering practices for materials testing;//Some acceptable methods for determining the liner seam strength are provided in Appendix I of this subchapter;

(K)

(7) The A membrane liner, if used, shall be installed under the direct supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.

J]

(8) The excavation base and walls for the synthetic a membrane liner shall be prepared to the membrane liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects or protrusions.

M]

e) Laminated, coated, or clad materials shall be considered a single walled and shall do not be construed to fulfill the requirements of both primary and secondary containment.

N]

f) Double walled Underground storage tanks with integral secondary containment systems, which satisfy the construction standards of Section Paragraph 2631(b) of this section and [E] of this article shall be considered to fulfill the volumetric requirements for secondary containment specified in Section 2631[e] Paragraph (d)(1) of this article of this section.

O] The design of double walled underground storage tanks shall allow for monitoring of the annular space;

P] Testing the annular space of a double-walled underground storage tank as a monitoring method shall not be allowed unless a strike plate or other approved devices used to protect underground storage tank are located directly under the monitoring opening;

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[d]

(g) THE DOUBLE WALLED Underground storage tanks with secondary containment systems shall be so designed and installed that any loss of hazardous substance from the primary containment will DRAIN TO A SPECIFIC LOCATION WITHIN THE ANNULAR SPACE/ AS REQUIRED/ to be detected by an interstitial monitoring device or method.

(h) An underground storage tank which is designed with an integral secondary containment system must provide 100 percent secondary containment unless it is equipped with the overfill prevention system in accordance with Section 2635(c)(2)(C) of this Article. In this case the top portion of the tank, no greater than two feet wide along the length of the tank, may be single-walled.

[i] ANY SPECIAL ACCESSORIES/ FITTING/ COATING/ OR LINING NOT INHERENT WITHIN THE INITIAL DESIGN OF THE PRIMARY CONTAINER OF DOUBLE-WALLED UNDERGROUND STORAGE TANK SHALL BE APPROVED BY A NATIONALLY RECOGNIZED/ INDEPENDENT TESTING ORGANIZATION OR A DEMONSTRATION OF INTEGRITY WITH THE PRIMARY CONTAINER OF DOUBLE/WALLED UNDERGROUND STORAGE TANK SHALL BE REQUIRED BY THE LOCAL AGENCY/

[j] ALL PRIMARY CONTAINERS AND DOUBLE/WALLED UNDERGROUND STORAGE TANKS SUBJECT TO FLOATATION SHALL BE WEIGHTED OR ANCHORED USING METHODS SPECIFIED BY THE MANUFACTURER OR/ IF NONE EXIST/ BEST ENGINEERING JUDGMENT/

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2632. Monitoring Requirements, Initial Responses, Standards and Response Plan for New Underground Storage Tanks

(a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of Section 2631 of this article.

(b) The owners or operators of underground storage tanks subject to this section shall implement a monitoring program THAT IS approved by the local agency and REQUIRED specified in the underground storage tank operating permit. The program shall utilize ONE OR MORE OF THE METHODS interstitial space monitoring as described in SUBSECTION Paragraph (c) of this section and shall ADDRESS include the items listed in SUBSECTION [d] Paragraph (e) of this section.

(c) Monitoring of the interstitial space BETWEEN THE PRIMARY AND SECONDARY CONTAINER shall utilize either visual monitoring of the primary containment system CONTAINER as described in Paragraph SUBSECTION (1) of this subsection or one or more of the methods listed in Paragraph SUBSECTION (2) of this subsection.

(1) A program which relies on the visual monitoring of the primary containment system CONTAINER shall incorporate all of the following:

(A) PROVISIONS THAT All exterior surfaces of the underground storage tanks and the surface of the floor directly beneath the underground storage tanks shall be capable of being monitored by direct viewing.

(B) Visual inspections shall be performed daily, except on weekends and recognized state and/or federal holidays. ~~and~~ Inspections may be more frequent if required by the local agency~~/~~ or ~~T~~the local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tanks are very infrequent. In these instances, the minimum frequency of visual inspection shall be no less than once per week and the inspection schedule shall take into account the minimum anticipated time during which the secondary containment system is capable of containing any unauthorized release and the maximum length of time any hazardous substance released from the primary ~~container~~ containment system will remain observable on the surface of the secondary containment system. The inspection schedule shall be ~~established~~ such that inspections will occur on a routine basis when the liquid level in the underground storage tanks is at its highest. The inspection frequency shall be ~~selected~~ such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tanks between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tanks.

(C) The ~~recordation of the~~ liquid level in the underground storage tanks shall be recorded at the time of each inspection.

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(D) The observation of any liquid ~~on the exterior of or the surface immediately~~ around or beneath an ~~the~~ underground storage tank ~~being visually monitored~~ shall ~~cause~~ require the owner or operator to undertake ~~implement all or a portion of~~ the following action or actions: ~~/ The applicable actions and their timing shall be based on the site-specific situation/ be intended to determine if the observed liquid constitutes an unauthorized release/ and shall be included in the permit/~~

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(i) Conduct an appropriate laboratory or field analysis of the observed liquid. If the liquid is a hazardous substance, the owner or operator shall proceed with the actions indicated in Paragraphs (ii) and (iii) below.

2 (ii) Conduct an appropriate tank integrity test; ~~testing of the underground storage tank/ utilizing the//procedures described in Section 2643 of Article 4 of this Subchapter;~~ and

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3 (iii) If a leak is confirmed, immediately remove ~~Removal of~~ all hazardous substances from the underground storage tank and the secondary containment system. ~~(as specified in Subsection (A) of this Section)/~~

(2) A program which relies on detecting the hazardous substance in the interstitial space ~~between the primary and secondary container~~ shall utilize one or more of the methods provided in Table 3.12 of this article. The following requirements shall apply when appropriate:

(A) The interstitial space of the underground storage tank shall be monitored using a continuous monitoring system.

(B) The continuous monitoring ~~devices~~ system shall be connected to an audible and visual alarm system as approved by the local agency.

P.131 AUDIBLE\VISUAL IN CCR DELETE SLASH AND UNDERLINE "AND"

~~(B) Manual monitoring shall be performed daily except on weekends and recognized state and/or federal holidays///Manual monitoring may be required on a more frequent basis as specified by the local agency~~

(C) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, ~~(i.e., liquid level measurements)~~, the monitoring program shall specify the proposed method(s) for determining the presence or absence of the hazardous substance in the interstitial space if the indirect methods indicate a possible unauthorized release.

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(d) Underground piping with secondary containment shall be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system, and

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of

detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with Section 2643(g)of these regulations.

(3) Other monitoring methods may be used in lieu of the requirement in Paragraph 2 above if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section. A continuous monitoring system, in Paragraph 1 above, which also shuts down the pump in addition to activating the alarm system, satisfies the automatic line leak detector requirement in Paragraph 2.

~~(d)~~

(e) All monitoring programs shall include the following:

(1) A written routine monitoring procedure which establishes ~~(methods)~~ when ~~applicable~~:

(A) The frequency of performing the monitoring method;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) ~~from which~~ where the monitoring will be performed;

(D) The name(s) ~~of~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) ~~and~~ The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(2) A response plan ~~developed by the permit applicant~~ which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary containment system within ~~the shortest possible time and no longer than~~ the time consistent with the ability of the secondary containment system to contain the hazardous substance, but not more than 30 days. The response plan shall include, but is not limited to, the following:

(A) A description of the proposed methods and equipment to be used for removing and properly disposing of any ~~the~~ hazardous substances, including the location and availability of the required equipment if not permanently on-site, and an equipment maintenance schedule for the equipment located on-site.

(B) The name(s) ~~of~~ and title(s) of the person(s) responsible for authorizing any the work ~~to be performed~~ necessary under the response plan.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.43

Table 3.12

Methods of Monitoring for Hazardous Substances in the ~~Secondary Container~~ Interstitial Space of an Underground Storage Tank System

See p 131 CCR + 1985 Text

To add underlining

Condition of the Secondary System [1]	Type of Substance Stored (INDICATOR)	Methods of Monitoring: Liquid Level (Indicator) [2] (NOT IN CCR)	Hazardous Substances Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X	X	X
Wet	Nonvolatile	X	X		X

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[1] A "dry" system does not contain liquid within the secondary containment during normal operating conditions while a "wet" system does.

[2] ~~Includes/ continuously operated mechanical or electronic devices/. manual determinations using mechanical/ electronic/ or visual readings/ or visual determinations to detect the presence of any liquid in dry systems or a change in liquid levels in wet/ systems/~~

[3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.

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[4] ~~Primarily used for double/walled underground storage tanks to~~ Detects changes in pressure or vacuum in the interstitial space of an underground storage tank with secondary containment. ~~between primary and secondary container///The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized independent testing organization/~~

1985 TEXT

TYPE OF SUBSTANCE STORED — LIQUID LEVEL INDICATOR [2] — WET VOLATILE — VAPOR MONITOR X

2633. Alternate Construction Requirements ~~Standards~~ for New Motor Vehicle Fuel Underground Storage Tanks

(a) This section specifies alternate construction ~~standards~~ requirements for new underground storage tanks which only contain motor vehicle fuels. ~~This section may be utilized by permit applicants~~ Owners of new underground storage tanks which only contain motor vehicle fuels may comply with this section in lieu of Section 2631 of this article. If this section is used ~~in lieu of Section 2631 of this article~~, then the monitoring ~~standards~~ requirements specified in Section 2634 shall be used in lieu of those specified in Section 2632 of this article.

(b) ~~Primary containers~~ Underground storage tanks used for ~~the underground~~ storage of motor vehicle fuel and constructed under this section shall be composed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with fiberglass reinforced plastic. ~~and~~ These tanks shall be installed n conjunction with the leak interception and detection system decribed in Paragraphs ~~subsections~~ (d) through (g) of this section. The primary containment system shall meet the requirements described in Sections 2631(b) and 2631(c) of this article.

(c) ~~Primary containers~~ Underground storage tanks used for ~~the underground~~ storage of motor vehicle fuel ~~and~~ that are constructed of materials other than those specified in ~~subsection~~ Paragraph 2633(b) ~~of this article~~ above shall be subject to the requirements of Sections 2631 and 2632 of this article.

d) The ~~permit applicant~~ owner of an underground storage tank shall demonstrate to the satisfaction of the local agency that the leak interception and detection system used ~~achieves the criteria of Section 2631(c) of this article~~ is capable of detecting a release before it can escape from the containment system.

e) The floor of any leak interception and detection system shall be constructed on a firm base and sloped to a collection sump. Methods of construction for the leak interception and detection system ~~for~~ utilizing membrane liners shall comply with the requirement of Section 2631(d)(6) of this article. ~~be considered to have satisfied the requirements of 2631(c) if, and only if, the liner material meets the following standards:~~

~~(1) The membrane liner material shall have the permeability factor specified in subsection 2631(d)(1) of this article as tested against ASTM Reference Fuel B.~~

~~(2) The membrane liner material shall be suitable for containment of the motor vehicle fuel in that such material shall meet the criteria set forth in subsections 2631(d)(2)(A) through (E) of this article as tested against the motor vehicle fuel to be stored considering its variability or against ASTM Reference Fuel B.~~

~~(3) The membrane liner shall meet the requirements set forth in subsection 2631(d)(3) of this article.~~

[(4) The liner has been installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator;]

[(5) The excavation base and walls which will come into contact with the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions;]

(f) Access casings shall be installed in the collection sump of any secondary containment system with backfill in the interstitial space. The access casing shall be:

(1) Designed and installed to allow the liquid to flow into the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

(3) Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donate, capture, nor mask constituents for which analyses will be made;

(4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

(5) Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system;

(6) Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism; and

(7) Capable of meeting requirements of local well permitting agencies.

[(f)]

(g) The leak interception and detection system [and the response plan] shall [preclude] prevent the contact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water elevation. Proof that the leak interception and detection system [and response plan] will protect ground water must be demonstrated by the [permit applicant] owner of the underground storage tank to the satisfaction of the local agency. [The requirement for this demonstration may be waived by the local agency for underground storage tanks that comply with the requirements of Subsections (e), (f), and (g) of Section 2631 of this Article. The demonstration shall, at a minimum, consider the following:] In determining whether the leak interception and detection system will adequately protect ground water, the local agency shall consider, at a minimum, the following:

(1) The containment volume of the leak interception and detection system;

(2) The maximum leak which could go undetected under the monitoring method required in Section 2634 of this article and the maximum period during which the leak will ~~occur~~ go undetected;

(3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system;

(4) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(5) The nature of the unsaturated soils under the leak interception and detection system and their ability to adsorb contaminants or to allow ~~vertical~~ movement of contaminants;

(6) The effect of any precipitation or subsurface infiltration on the movement of any leak of hazardous substance and the available volume of the leak interception and detection system; and

(7) The nature and timing of the response plan required by Section 2634 of this article to clean up ~~the~~ any hazardous substances which have been discharged from the primary container.

~~(g) Pressurized piping systems that are connected to an underground storage tank that is be constructed pursuant to the requirements of this section/and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system requirements of this section/ provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6/7 of Division 20 of the Health and Safety Code/~~

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25291

40 CFR 280.20

2634. Monitoring and Response Plan Standards for New Motor Vehicle Fuel Underground Storage Tanks Constructed Pursuant to Section 2633

(a) Motor vehicle fuel ~~underground~~ storage tanks ~~used for the storage of motor vehicle fuel~~ and constructed pursuant to ~~the~~ standards of Section 2633 of this article shall be monitored ~~according to the requirements of the//appropriate sections of Chapter 6/7 of Division 20 of the Health and Safety Code///in addition/~~ as follows:

(1) ~~Monitoring of~~ The leak interception and detection system shall be monitored pursuant to ~~subsections~~ Paragraph (b)~~/ (f)/~~ and ~~(g)~~ of this section;

(2) The motor vehicle fuel inventory shall be reconciled according to the performance requirements in Section 2646; and

(3) All underground pressurized piping shall be tested in accordance with the requirements of Section 2635(b) and monitored in accordance with the requirements of Section 2632(d).

[B] The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a collection sump/

[C] Access casing[s] shall be installed in the collection sump///The access casing shall be/

[1] Capable of allowing any liquid that may be moving along the upper surface of the leak interception and detection system to enter the casing/

[2] Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors/

[3] Constructed of materials that will not be structurally weakened by the stored hazardous substances nor dented/ captured/ nor mask constituents for which analyses will be made/

[4] Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system/

[5] Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system/ and

[6] Extended to the ground surface and covered with a locked watertight cap or enclosed in a surface security structure that will protect the access casing[s] from entry of surface water/ accidental damage/ unauthorized access/ and vandalism///A secure facility will satisfy the requirements for protection against unauthorized access and vandalism/

[d]

(b) Monitoring of programs for the leak interception and detection system shall incorporate all of the following must meet the following requirements:

(1) The use of a leak interception and detection system shall detect any unauthorized release of the motor vehicle fuel collected utilizing one or more of the monitoring methods for volatile hazardous substances provided in Table 3.2 of this article. The following requirements shall apply as appropriate:

(A) Continuous monitoring device systems shall be connected to an audible and visual alarm system approved by the local agency. of

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(B) Manual monitoring, if used, shall be performed daily, except on weekends and recognized state and/or federal holidays, but no less than once in any 72 hour period. Manual monitoring may be required on a more frequently basis as specified by the local agency. Based on an assessment of the available volume of the leak interception and detection system and the accuracy of the proposed monitoring method///Approved methods of monitoring the leak interception and detection system include liquid level indicators/ hazardous substance sensors/ and vapor monitors as specified for volatile hazardous substances in Table 3.1 of this article/

(2) A written routine monitoring procedure ~~which includes~~ shall be prepared and shall establish:

(A) The frequency of performing the monitoring ~~method~~;

(B) The methods and equipment to be used for performing the monitoring;

(C) The location(s) ~~from which~~ where the monitoring will be performed;

(D) The name(s) ~~of~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment;

(E) The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(3) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination, (i.e., liquid level measurements), the monitoring program shall specify the proposed

method(s) for determining the presence or absence of the hazardous substance if the indirect method indicates ~~the possible presence~~ a possible unauthorized release of ~~the~~ motor vehicle fuel.

~~(c)~~

(c) A response plan for an unauthorized release shall be developed prior to the underground tank system being put into service. ~~For any leak interception and detection system which does not meet the volumetric requirements of Subsection 2631(c), (f), and (g) of this Article, for those underground storage tanks~~ If the leak interception and detection system that meets the volumetric requirement of Subsection 2631(d) of this article, the local agency shall require the owner to develop a plan pursuant to the requirements of Subsection 2632(d)(e)(2) of this article. If the leak interception and detection system does not meet the volumetric requirements of Subsections 2631(d) the response plan shall consider the following:

(1) The volume of the leak interception and detection system in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection system must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked material;

(3) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system and their ability to absorb contaminants or to allow ~~vertical~~ movement of contaminants; and

(5) The methods and scheduling for removing all of the hazardous substances which may have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sump.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, ~~25299/I~~ 25291, 25292
40 CFR 280.41

2635. ~~General Construction Standards~~ Installation and Testing Requirements for New Underground Storage Tanks and Piping

~~(A) The following subsections shall apply to all primary and secondary containers including leak interception and detection systems/~~

(a)

~~(B)~~ Primary ~~containers~~ and ~~double walled underground storage tanks~~ secondary containment systems shall be designed, and constructed, tested, and certified to comply, as applicable, with all of the following requirements:

~~(1) Cathodically protected steel underground storage tanks/ steel underground storage tanks clad with glass fiber-reinforced plastic/ and glass fiber plastic underground storage tanks shall be fabricated and designed to standards developed by a nationally recognized independent testing organization or be listed by the testing organization///Applicable design standards shall include/ but are not limited to/ those provided in Appendix I of this subchapter/~~

~~(2) Underground storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chemical compatibility with the hazardous substances to be stored using recognized engineering practices for materials testing///Some acceptable methods for determining durability/and chemical compatibility with the hazardous substances are provided in Appendix I of this subchapter/~~

[3] Except for steel underground storage tanks, a wear plate (striker plate) shall be centered under all accessible openings of the underground storage tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material resistant to the stored hazardous substance.///The width of the plate shall be at least 8 inches wide and have an area of 1 square foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.093 inch (11GA mm), and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of the underground storage tank and bonded or seam welded in place.

(6)

(1) All underground storage tanks shall be tested, at the factory before being put into service transported, in accordance with the applicable sections of the industry code or engineering standard under which they were are built. The ASME code stamp or listing mark of Underwriters Laboratories, Incorporated (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement.//

[4] Single-walled primary containers of steel and double-walled underground storage tanks constructed of steel which are not clad with glass fiber reinforced plastic, shall be protected by a properly installed, maintained, and monitored cathodic protection system.///Selection of the type of protection to be employed shall be based on a certification

listing by a nationally recognized independent testing organization or the judgment of a registered corrosion engineer or a National Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion history of the area.///Underground storage tanks with listed corrosion resistant materials, nonmetallic glass fiber reinforced plastic coatings, composites, or equivalent systems shall be initially tested immediately//prior to installation.

The protection system shall be inspected under the direction of a registered corrosion engineer or NACE corrosion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the the system designer, but no less than semi-annually.///Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

(2) The outer surface of underground storage tanks constructed of steel shall be protected from corrosion as follows, except that primary containment systems installed in a secondary containment system and not backfilled do not need cathodic protection:

(A) Field installed cathodic protection systems shall be designed and certified as adequate by a corrosion specialist. The cathodic protection systems shall be tested under the direction of a cathodic protection tester within six months of installation and at least every three years thereafter. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed in accordance with voluntary consensus standards. Impressed current

cathodic protection systems shall also be inspected to ensure that they are in proper working order not less than every 60 days by a cathodic protection tester.

(B) Underground storage tanks protected with glass fiber reinforced plastic coatings, composites, or equivalent non-metallic exterior coatings or coverings, including coating/sacrificial anode systems, shall be tested at the job site using an electric resistance holiday detector. All holidays detected shall be repaired and checked by a factory authorized repair service prior to tank installation. During and after tank installation, care shall be taken to prevent damage to the protective coating or cladding. Preengineered corrosion protection systems with sacrificial anodes shall be checked once every three years in accordance with the manufacturers instructions.

[7]

(3) Before being installation, covered, enclosed, or placed in use, all the underground storage tank and piping shall be tested for tightness at the installation site in accordance with the manufacturer's written guidelines. If there are no guidelines, the primary and secondary containment shall be tested for tightness hydrostatically or with air pressure at not less than 3 pounds per square-inch (20.68 k Pa) and not more than 5 pounds per square-inch (34.48 k Pa). In lieu of the above, an equivalent differential pressure test, expressed in inches of mercury vacuum, in the interstitial space of the secondary containment is acceptable. Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system or pneumatically tested to 110 percent of the maximum anticipated pressure of the system but not less than 5 pounds per square inch (34.48 kPa) gauge at the highest point of the system.///This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least ten minutes.///In lieu of the above, a test using accepted engineering practices shall be used.///Some acceptable test methods for testing pipelines are provided in Appendix I of this subchapter.///Double-walled underground storage tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing. The pressure (or vacuum in the interstitial space) shall be maintained for a minimum of 30 minutes to determine if the tank is tight. If a tank fails the test, as evidenced by soap bubbles, or water droplets, installation shall be suspended until the tank is replaced, remanufactured or repaired by a factory authorized repair service and passes a retest.

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(4) All other secondary containment systems shall pass a post-installation test which meets the approval of the local agency.

(5) After being installed but before the underground storage tank is placed in service it shall receive a tank integrity test to ensure that no damage occurred during installation. The tank integrity test is not required if the tank is equipped with an interstitial monitor certified to meet the performance standards of a "tank integrity test", as defined in Section 2611, in accordance with Section 2643 (g) of these regulations.

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(5)

(6) All primary containers and double-walled underground storage tanks shall be installed according to a code of practice developed in accordance with voluntary consensus standards and the manufacturer's written installation instructions. Recommendations of: If no written recommendations exist, best engineering practice. The owner or operator shall certify that the underground storage tank is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(7) All underground storage tanks subject to flotation shall be anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

(8) When required by the local agency, all underground storage tanks shall be equipped with an overfill protection system which includes the following elements:

(A) A spill containment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment; A level sensing device that continuously monitors and indicates the liquid level in the underground storage tank and either (B) or (C) of this subsection or both;

(B) An audible/visual alarm system triggered by a liquid level sensor to alert the operator of an impending overfill condition; or

(C) An automatic shutoff device that stops the flow of product being delivered to the underground storage tank when the underground storage tank is full;

(9) The overfill protection system required in subsection (8)(B) of this section shall be waived for underground storage tanks containing motor vehicle fuels in which a spill containment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment and:

(A) Both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank;

(B) The available capacity of the underground storage tank to be filled is determined immediately prior to filling to be at least 103 percent of the volume of the entire tank compartment to be delivered or the volume of the entire tank compartment to be delivered plus 200 gallons, whichever is less, as determined by underground storage tank gauging; or

(C) The hazardous substance being delivered can be metered into the underground storage tank and the available underground storage tank capacity is determined immediately prior to filling;

(b) All underground piping, if in direct contact with backfill material, shall be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection must meet the requirements in Paragraph 2635(a)(2) of this section. Underground piping shall meet all of the following requirements:

(1) All underground primary piping in contact with hazardous substances under *normal operating conditions shall be installed inside a secondary* containment system which may be a secondary pipe, or a lined trench. All *secondary containment systems shall be sloped so that all releases will* flow to a collection sump located at the low point of the underground piping.

(2) Primary piping and secondary containment systems shall be installed in *accordance with a code of practice developed in accordance with voluntary* consensus standards. The owner or operator shall certify that the piping is installed in accordance with the above requirements as required by Paragraph (e) of this section.

(3) If a lined trench system is used as part of a secondary containment system, it shall be designed and constructed according to a code of *practice or engineering standard approved by a state licensed engineer.* The following requirements shall also apply:

(A) All trench materials shall be compatible with the substance stored and certified by an *independent testing organization for their* compatibility or adequacy of the trench design, construction, and *application.*

(B) The trench shall be covered and shall be capable of supporting any expected vehicular traffic.

(4) All new primary piping and secondary containment systems shall be tested for tightness after the installation in accordance with the *manufacturer's guidelines.* As a minimum, the primary piping shall be tested for tightness hydrostatically at 150 percent of designed and operating pressure or pneumatically at 110 percent of design pressure. If the calculated test pressure is less than 40 psi, 40 psi shall be used as the test pressure. The pressure shall be maintained for a minimum of 30 minutes and all joints shall be soap tested. A failed test, as evidenced by presence of bubbles, shall require appropriate repairs and a retest. If there are no manufacturer's guidelines, secondary containment systems shall be tested using an applicable method specified in an *industry code or engineering standard.*

(5) Underground pressurized piping which meets *all of the following* requirements satisfies the annual tightness test requirement specified in Subsection 25291(f) of the Health and Safety Code:

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(A) The secondary containment system is equipped with a continuous monitoring system. The leak detection device can be located at the pump sump if the piping slopes back to this point.

(B) A continuous monitoring system is connected to an audible and visual alarm system and the pumping system.

(C) A continuous monitor shuts down the pump and activates the alarm system when a release is detected.

(D) The pumping system shuts down automatically if the continuous monitoring system fails or is disconnected. This requirement does not apply to emergency generator system if the site is manned.

SUGGESTION: "AN" would improve sentence

(6) A secondary containment system is not required for vent piping or tank riser piping provided the primary containment system is equipped with an overfill prevention system meeting the requirements specified in Paragraphs (c)(2)(B)or(C) of this section. Vapor recovery piping is also exempt from the secondary containment requirement if designed not to carry product back to the underground storage tank.

(7) Secondary containment is not required for suction piping if such piping is designed and installed in accordance with the following requirements:

(A) The below-grade piping operates at less than atmospheric pressure (suction);

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) No valves or pumps are installed in the suction line below-grade;

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(D) An inspection method is provided which readily demonstrates compliance with Paragraphs (A)-(C) immediately above.

(c) All underground storage tanks shall be equipped with a spill container and an overfill prevention system as follows:

(1) The spill container shall collect any hazardous substances spilled during tank filling operations to prevent the hazardous substance from entering the subsurface environment. The spill container shall meet the following requirements:

(A) The exterior wall must be protected from galvanic corrosion if made of metal.

(B) It must have at least a minimum capacity of five gallons (19 liters).

(C) It must have a spring-loaded drain valve which allows drainage of the collected spill into the primary container.

(2) The overfill prevention system shall not allow for manual override and shall meet one of the following requirements. It must either:

(A) Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or

(B) Restrict delivery of flow to the tank at least 30 minutes prior to tank overfill, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity, and provide audible alarm sounds at least five minutes prior to overfill; or

(C) Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent full.

(3) Owners and operators must use care to prevent releases due to spilling or overfilling. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The local agency may waive the requirement for overfill prevention equipment where the tank inlet exists in an observable area and the spill container is adequate to collect any overfill.

~~(c)~~

(d) Secondary containment systems including leak interception and detection systems installed pursuant to Section 2633 of this article shall comply with all of the following:

(1) The secondary containment system shall, at a minimum, encompass the area within the system of vertical planes surrounding the exterior of the primary containment ~~unit~~ system. If backfill is placed between the primary and secondary containment systems, ~~then~~ an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment system over the vertical distance between the primary and secondary containment systems. The secondary containment system shall extend an additional distance beyond the vertical planes described above equal to the radius of lateral spread plus 1 foot.

(2) The secondary containment system must be capable of precluding the inflow of the highest ground water anticipated into the interstitial space during the life of the underground storage tank ~~into the space between the primary and secondary containers~~.

(3) If the interstitial space ~~between the primary and secondary containers~~ is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary containment system.

(4) The secondary containment system and any with backfill material between the primary and secondary containers shall be designed and constructed to promote gravity drainage of a an unauthorized leak release of hazardous substances from any part of the primary containment system to the monitoring location(s).

(5) Two or more primary containment systems shall not utilize the same secondary containment system if the primary containment systems store materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of any part of a primary or secondary containment system.

(6) Drainage of liquid from within a secondary containment system shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged into the environment. The liquid shall be analyzed to determine the presence of any of the hazardous substance(s) stored in the primary containment systems prior to initial removal, and monthly thereafter, for any continuous discharge (removal) to determine the appropriate method for final disposal. The liquid shall be sampled and analyzed immediately upon any indication of an unauthorized release from the primary containment system.

(7) For primary containment systems installed completely beneath the ground surface, the original excavation for the secondary containment system shall have a water-tight cover which extends at least 1 foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to

drainways leading away from the excavation. Access openings shall be constructed as water-tight as practical. Underground storage tanks Primary containment systems with integral secondary containment and open vaults are exempt from the requirements of this paragraph. P134 CCR has "Subsection"

(8) The actual location and orientation of the underground storage tanks and appurtenant piping systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.

(e) Owners or their agents shall certify (see Appendix VI) that the installation of underground storage tanks and piping meets all of the following conditions:

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

(2) The installer has been certified or licensed by the Contractors State License Board;

(3) The underground storage tank, any primary piping, and any secondary containment system, was installed according to applicable voluntary consensus standards and any manufacturer's written installation instructions.

(4) All work listed in the manufacturer's installation checklist has been completed; and

(5) The installation has been inspected and approved by the local agency, or, if required by the local agency, inspected and certified by a registered professional engineer who has education and experience with underground storage tank system installations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25281, 25299

40 CFR 280.20, 280.40 thru 280.45

Article 4. Existing Underground Storage Tank Monitoring Standards

Requirements

2640. General Applicability of Article

(a) All owners of existing underground storage tanks subject to this subchapter shall implement a visual monitoring or alternative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code. A local agency shall not issue a permit unless the monitoring system is capable of determining the containment ability of the underground storage tank and/ detecting any active or future unauthorized release.// If the monitoring technique(s) selected is designed to detect the presence of the stored hazardous substance outside of the underground storage tank, then tests must be made to determine if the hazardous substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank.// The failure to implement an approved monitoring system shall be cause for the local agency to require closure of the underground storage tank pursuant to Article 7 of this subchapter.

(b) The objectives of the monitoring program for existing underground storage tanks are to detect unauthorized releases before ground water is affected. Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses.

(c) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2642 of this article for all visible portions of the underground storage tank.// If the entire underground storage tank is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored, that portion of the underground storage tank shall be monitored visually. Visual monitoring that can only be implemented during a portion of the year shall be utilized during those portions of the year.// If visual monitoring cannot be implemented for the entire underground storage tank throughout the entire year, then one of the monitoring alternatives specified in Section 2641 of this article shall also be implemented.// The monitoring alternative shall be operative during those times when visual monitoring is not feasible or for those portions of the underground storage tank which are not susceptible to visual monitoring.

(d) All owners of existing underground storage tanks subject to this subchapter, who are not able to implement visual monitoring as specified in Section 2642 of this article, shall implement one of the monitoring alternatives specified in Section 2641 of this article.

(e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums.// Local agencies, as a condition of approval of a specific monitoring alternative, shall to comply with the objectives specified in Subsection (b) of this section require additional or more frequent monitoring if necessary, and Subsection (d) of Section 2641 of this article.

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[f] Local agencies shall reduce the monitoring frequency for visual monitoring or a monitoring alternative listed in Section 2642 of this article situations where environmental conditions make it impracticable/ physically impossible/ or life threatening to complete the required monitoring/

(a) The requirements of this article apply to owners of nonexempt existing underground storage tanks.

(b) The requirements of this article apply during the following periods:

(1) Any operating period, including any period that the tank is empty as a result of withdrawal of all stored material prior to the planned input of additional hazardous substances;

(2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted; and

(3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to Section 2671(b), for a temporary closure period.

(c) This article shall not apply to underground storage tanks that are installed and monitored in accordance with Sections 2631 and 2632 or 2633 and 2634 of Article 3 of this chapter.

Authority: H&SC 25299.3 25299.7

Reference: H&SC 25292

DONT UNDERLINE ALREADY IN CCR

40 CFR 280.40 - 280.42

MISSING CITATIONS TO: 25283, 25291

2641/ Monitoring Alternatives

[a] All owners of existing underground storage tanks subject to this subchapter who cannot implement visual monitoring for the entire underground storage tank during all periods of the year shall implement/ by the statutory deadline/ one of the monitoring alternatives specified in Subsection [c] of this Section/

[b] The local agency shall base its review of the proposed monitoring alternative on the specification contained in Subsection [a] of this section and shall approve the monitoring alternative if it finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection [b] of Section 2640 of this article///If the proposed monitoring alternative cannot be approved/ then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of another monitoring alternative/

[c] The optional monitoring alternatives are as follows/

[1] Underground Storage Tank Testing///This monitoring alternative shall/ at a minimum/ utilize the procedures specified in Section 2643 of this article and shall be performed monthly at a minimum/

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(2) Vapor or other vadose zone monitoring and ground water monitoring with soil sampling.

(A) This monitoring alternative shall at a minimum include vadose zone monitoring, ground water monitoring and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.

(B) The vadose zone monitoring program shall be designed and installed pursuant to the procedures specified in Sections 2548 and 2548 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily at a minimum. Other vadose zone monitoring shall be performed weekly at a minimum.

(C) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2547 and 2548 of this article and monitored semiannually at a minimum. The minimum number of wells shall be as specified on Table 4.1 of this section for Alternative 2. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. The local agency shall require laboratory verification at periodic intervals if visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.

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(D) The soil sampling and analysis shall be performed as specified in Sections 2545 and 2548 of this article. Samples shall be taken from all boring(s) and well(s) installed.

(3) Vadose zone monitoring, soil sampling and underground storage tank testing.

(A) This monitoring alternative shall at a minimum include vadose zone monitoring and analysis of soil samples taken from the boring(s) made for vadose zone monitoring and tank testing. This alternative shall not be approved if first ground water, including intermittent, perched ground water, is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic, municipal, agricultural or industrial supply) or is hydraulically connected to ground and surface waters which has actual or potential beneficial uses.

(B) The determination that first ground water is significantly deeper than 100 feet shall be by an onsite boring(s) constructed according to the specifications in Subsection (D) of Section 2548 of this article or by evidence based on an evaluation pursuant to Subsection 2548(D) of this article.

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[C] Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Sections 2646 and 2648 of this article/ Vadose zone vapor monitoring shall be performed either continuously or daily/ at a minimum///Other vadose zone monitoring shall be performed weekly/ at a minimum/

[D] The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article///Samples shall be taken from all borings/installed/

[E] Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

[4] Ground Water and Soil Testing/

[A] This monitoring alternative shall/ at a minimum/ utilize ground water sampling and analysis of soil samples taken at the time of well installation///This alternative shall not be approved if any of the following conditions exist/

[1] First ground water/ including intermittent/ perched ground water/ is normally greater than 20 feet deep/

[2] The ground water proposed for monitoring has actual or potential beneficial uses (domestic/ municipal/ industrial/ or agricultural supply) or is hydraulically connected to ground or surface water which has actual or potential beneficial uses/ or

[3] The ground water monitoring well can not be perforated within the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest perennial ground water level///The 10-foot requirement may be waived by the local agency if ground water is less than 10 feet deep/
If the local agency waives this requirement/ the well must still be capable of being perforated above the highest anticipated ground water level/

[B] Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and shall be monitored monthly/ at a minimum///The minimum number of monitoring wells shall be as specified in Table 4-1 of this article for Alternative 4/ Analysis of/samples collected shall be by visual observation/ or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated/ If visual observation or field

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analysis is used, the local agency shall require periodic laboratory analysis if the visual observation or field analysis does not provide a degree of detection equal to that of laboratory analysis.

(2) The soils sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all wells installed.

(5) Inventory Reconciliation, Underground Storage Tank Testing, and Pipeline Leak Detectors.

(A) This monitoring alternative shall at a minimum, utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors. The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article. The owner or operator of an underground storage tank that experiences a inventory reconciliation in excess of allowable variation(s) shall implement the evaluation procedures specified in Subsection (1) of Section 2644 of this article within the times limits specified.

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(i) The daily variation in inventory reconciliation shall be the difference between the calculated volume in storage and the actual volume in storage.

(ii) If the variation is based on the previous days physically measured inventory, the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.

(iii) If the variation is based on the previous days calculated inventory, then the daily variation shall not exceed the allowable variation described in Subsection (iv). The calculated inventory on any given day shall be based on continuous calculations from the day on which the physical inventory was used. The period of continuous calculations shall be no greater than 1 month.

(iv) The allowable variation shall be the sum of the measurement error from Table 4.2 of this article and the throughput error calculated in accordance with Subsection (v) of this subsection.

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TABLE #2

TANK SIZE [GALLONS]	ALLOWABLE MEASUREMENT ERROR [GALLONS]
LESS THAN 1,000	25
1,000 TO LESS THAN 2,000	50
2,000 TO LESS THAN 12,000	75
12,000 OR GREATER	100

"* ALL VALUES IN GALLONS"

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~~(F) THE THROUGHPUT ERROR SHALL BE 0.15 PERCENT (0.0015) OF THE~~ MEASURED THROUGHPUT DURING THE PERIOD UNDER CONSIDERATION AS DESCRIBED IN EITHER SUBSECTION (II) OR SUBSECTION (III) OF THIS SUBSECTION.

(C) UNDERGROUND STORAGE TANK TESTING SHALL BE PERFORMED YEARLY, AT A MINIMUM, ACCORDING TO THE PROCEDURES SPECIFIED IN SECTION 2643 OF THIS ARTICLE.

(D) ALL PRESSURIZED PIPELINES SHALL BE MONITORED USING AN AUTOMATIC ON-LINE PRESSURE LOSS DETECTOR AND FLOW RESTRICTION DEVICE. THE DETECTOR SHALL BE CONNECTED TO AN AUDIBLE/VISUAL ALARM SYSTEM UNLESS IT PROVIDES FOR AT LEAST A 50-PERCENT REDUCTION FROM THE NORMAL FLOW RATE. SUCTION PIPELINES SHALL BE MONITORED DAILY FOR INDICATIONS OF POSSIBLE LEAKS.

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(E) INVENTORY RECONCILIATION, UNDERGROUND STORAGE TANK TESTING, PIPELINE LEAK DETECTORS, VADOSE ZONE, OR GROUND WATER MONITORING AND SOIL TESTING.

(I) THIS MONITORING ALTERNATIVE SHALL, AT A MINIMUM, UTILIZE INVENTORY RECONCILIATION, UNDERGROUND STORAGE TANK TESTING, AND PIPELINE LEAK DETECTORS. IN ADDITION, EITHER VADOSE ZONE OR GROUND WATER MONITORING SHALL BE INCLUDED AND ANALYSIS OF SOIL SAMPLES TAKEN AT THE TIME OF BORING OR WELL INSTALLATION. THE USE OF THIS ALTERNATIVE IS LIMITED TO THOSE UNDERGROUND STORAGE TANKS WHICH CONTAIN MOTOR VEHICLE FUEL.

(B) INVENTORY RECONCILIATION SHALL BE PERFORMED ACCORDING TO THE PROCEDURES SPECIFIED IN SECTION 2644 OF THIS ARTICLE. THE OWNER OR OPERATOR OF AN UNDERGROUND STORAGE TANK THAT EXPERIENCES A VARIATION IN EXCESS OF ANY OF THE FOLLOWING SHALL IMPLEMENT THE EVALUATION PROCEDURES SPECIFIED IN SUBSECTION (I) OF SECTION 2644 OF THIS ARTICLE WITHIN THE TIMES SPECIFIED:

(I) DAILY VARIATION, PLUS OR MINUS 100 GALLONS

(II) 7-DAY VARIATION, PLUS OR MINUS 0.5 PERCENT OF THROUGHPUT OR 100 GALLONS, WHICHEVER IS GREATER, BUT, IN NO CASE, GREATER THAN 250 GALLONS

- [III] more than 30-day variation///plus or minus 0.5 percent of throughput or 100 gallons whichever is less

[C] Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

[D] All pressurized pipelines and suction pipelines shall be monitored as provided for in Subsection [5][D] of this subsection/

[E] Vadose zone monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2646 and 2648 of this article///The frequency of monitoring shall be no less frequent than semi-annually/

[F] Ground water monitoring/ if used/ shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article///The minimum number of monitoring wells shall be as specified in Alternative 8 in Table 4/I of this article///Analysis of samples collected can be by visual observation/ or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated///Ground water samples shall be collected and analyzed at least semi-annually////If samples are analyzed by visual observation or field analysis/ the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods/

[G] The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article/ Samples shall be taken from all borings and wells installed/

[7] Underground Storage Tank Gauging and Testing/

[A] This monitoring alternative shall/ at a minimum/ utilize gauging and testing of the underground storage tank///This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the/underground storage tank can be measured to an accuracy of ± 5/ gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation/

[B] The underground storage tank gauging shall be performed according to the following specifications/

[I] The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals/

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(iii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days///No input or withdrawals shall occur during these periods///The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed early at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred///The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations;

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(B) Interim Monitoring

(1) This alternative monitoring method shall, at a minimum, utilize underground storage tank testing and either inventory reconciliation or tank gauging///This alternative shall be available only to any of the following categories of owners for a period of up to 3 years after the effective date of these regulations;

(i) Small businesses as defined in Subsection IIJ3Z(e) of the Government Code and nonprofit organizations which would meet the criteria for a small business; provided the owner demonstrates to the local agency that sufficient funds will be available to close the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period;

(ii) Any underground storage tank owner who provides a written, legally binding, commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 of this subchapter within

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3 years from the statutory compliance date or replaced with a new underground storage tank which complies with the provisions of Article 3 of this subchapter.// The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit or

(iii) Any governmental agency that demonstrates to the local agency that due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection. The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be performed according to the procedures specified in Section 2643 of this article and shall be performed yearly at a minimum.

(C) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article.// The owner or operator of an underground storage tank that experiences a variation in excess of the levels specified in Subsection (C)(6)(B) of this section shall implement the evaluation procedures specified in Subsection (F) of Section 2634 of this article within the time specified.

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(B) Underground storage tank gauging shall be performed according to the specifications of Subsection (C)(7)(B) of this section. Variations in excess of 1 percent of the underground storage tank volume or 50 gallons, whichever is less, shall be cause for further evaluation.

(D) The local agencies shall evaluate each monitoring alternative proposed to determine if it achieves the objectives specified in Subsection (B) of this article according to the following:

(1) Whenever possible, a primary method of monitoring other than ground water monitoring shall be performed monthly at a minimum.

(2) Where the underground storage tank is in an area where precipitation or surface runoff provides direct recharge of the ground water and the ground water being recharged has an actual or potential use (domestic, municipal, agricultural, or industrial supply), a monitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring.

(3) In addition, ground water monitoring may be required by the local agency in the areas described in Subsection (2) above.// The local agency shall review and approve the number and location of the monitoring wells.// Where 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all underground storage tanks or facilities being monitored and is within 1,000 feet of all underground storage tanks being monitored.

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2641. Monitoring Program Requirements

(a) Owners of existing underground storage tanks subject to this article shall implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to Section 25281.5 of the Health and Safety Code, or is exempt from monitoring under Paragraph (b) of this section.

(b) Underground piping shall be exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in Section 2635(b)(7) of this chapter.

(c) The monitoring program for all underground piping that operates at less than atmospheric pressure, unless it is exempt from monitoring under Paragraph (b) of this section, shall comply with Section 2643(e) and shall include daily monitoring as described in Appendix II.

(d) The monitoring program shall include visual monitoring in accordance with Section 2642 of this article for all portions of the underground storage tank system which is not exempt under this section. A portion of the underground storage tank shall be exempt from visual monitoring if the owner demonstrates to the satisfaction of the local agency that one or more of the following conditions apply to that portion:

(1) A portion of the underground storage tank is not accessible for direct viewing.

(2) Visual inspection of a portion of the underground storage tank would be hazardous or would require the use of extraordinary personal protection equipment other than such normal protective equipment such as steel-toed shoes, hard hat, or ear protection; or

(3) The underground storage tank is located at a facility which is not staffed on a daily basis.

(e) The monitoring program shall include non-visual monitoring which must be implemented for all portions of the underground storage tank which are exempt under Paragraph (d) of this section and for the underground storage tank during periods when visual monitoring required under Paragraph (d) of this section is not conducted. This non-visual monitoring shall include a quantitative release detection method as specified in Section 2643 of this article or a qualitative release detection method as specified in Section 2644 of this article or a combination of these methods as approved by the local agency.

(f) At a minimum, any non-visual monitoring shall include a quantitative release detection method for underground pressurized piping that complies with the performance requirements specified in Subsection 2643(d)(1).

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(g) The monitoring program must be approved by the local agency and as a minimum shall be in compliance with the requirements of this article and as specified in the underground storage tank operating permit. The local agency may require additional monitoring methods or increased monitoring frequencies as necessary to satisfy the objective in Subsection 2641(a) of this article. In deciding whether or not to approve a proposed monitoring program, or to *require additional methods or frequencies of monitoring*, the local agency shall consider the following factors:

(1) The volume and physical and chemical characteristics of the hazardous substance(s) stored in the underground storage tank;

(2) The compatibility of the stored hazardous substance(s) and any chemical reaction product(s) with the function of monitoring equipment or devices;

(3) *The reliability and consistency* of the proposed monitoring equipment and systems under site-specific conditions;

(4) The depth and quantity of ground water and the direction of ground water flow;

(5) The patterns of precipitation in the region and any ground water recharge which occurs as a result of precipitation;

(6) The existing quality of ground water in the area, including other sources of contamination and their cumulative *impacts*;

(7) The current and potential future uses (e.g., domestic, municipal, agricultural, industrial supply) of ground water in the area;

(8) The proximity and withdrawal rates of ground water users in the area;

(9) The type, homogenity, and range of moisture content of the backfill material and native soils and their probable effects on contaminant *migration and detection*;

(10) The presence of contamination in the excavation zone or surrounding soils;

(11) The proximity of the underground storage tank to surface waters; and

(12) Additional hydrogeologic characteristics of the zone surrounding the underground storage tank.

(h) Owners shall repair or close in accordance with the requirements of Articles 6, or 7, respectively, any underground storage tank for which an approved monitoring program is not promptly obtained.

(i) Equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calendar year) for operability or running condition. Written records shall be maintained as required in Section 2712 of Article 10 of this chapter.

(j) When an unauthorized release is indicated during the installation of a release detection system, the owner or operator shall cease the installation process and comply with the release reporting requirements of Article 5 and shall replace, repair or close the underground storage tank in accordance with Articles 3, 6 or 7 of this chapter.

(k) When implementation of the monitoring program indicates that an unauthorized release may have occurred, the owner shall comply with the release reporting requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Authority: H&SC 25299.3, 25299.7 → UNDERLINE
Reference: H&SC 25283, 25291, 25292 NOT IN COR,
40 CFR 280.40, 280.41

2642. Visual Monitoring

[a] Visual monitoring shall be utilized as the principal leak detection monitoring method where feasible for all visible exterior surfaces of an underground storage tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable.// If visual monitoring is required, the provisions of subsections (c) and (d) of this section shall be followed.

(b) The owner is exempt from visual monitoring for that portion of the underground storage tank to which the following conditions apply:

[1] Any portion of an underground storage tank that is in contact with the ground, a floor, or pad such that it cannot be seen.// An underground storage tank in a saddle should not typically qualify for an exemption.

[2] Visual inspection of the underground storage tank would put a person in a physically unsafe environment.

[3] Visual inspection of the underground storage tank would require the use of extraordinary personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.).

[4] The underground storage tank is located at a facility which is not staffed on a daily basis.

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[c]

(a) A An owner who is required, pursuant to Section 2641 of this article, to implement visual monitoring program shall incorporate comply with all of the following requirements:

small "a" in CCR

(1) Provisions for routine direct visual/inspection of All accessible visible exterior surfaces of an underground storage tank, and the including any visible horizontal surface directly beneath the underground storage tank, shall be inspected at least daily monitored by direct viewing. The inspection schedule shall be established such that some of the inspections are conducted when the liquid in the underground storage tank is at its highest level;

(2) A written statement of the routine monitoring procedure shall be prepared and be available at the facility which and the record shall includes the frequency of visual inspections, the location(s) from which observations will be made, the name(s) of and title(s) of the person(s) responsible for performing the observations and the reporting format;

[3] Visual inspections shall be performed/daily at a minimum/ and shall be more frequent if necessary/ The inspection schedule shall be established such that some of the inspections occur when the liquid/the underground storage tank is at its highest level///The inspection frequency shall be determined such that any unauthorized release will remain observable on the exterior of or the horizontal surface immediately beneath the underground storage tank between visual//inspections/ The evaluation of

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how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored/

CAPITAL "R" in CCR P138

[4]

(3) Written records shall be maintained according to Section 2712 of Article 10 of this chapter and shall include recordation of the observations made and the liquid level in the underground storage tank at the time of the each inspection. These records shall also include a description of any sampling, analyses, and testing procedures conducted to satisfy Paragraph (b) of this section, including any minimum levels of detection used.

d]

b) The observation of The owner or operator shall undertake all of the following activities if any liquid around or on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually is observed: monitored shall cause the owner or operator to implement all or a portion of the following actions///The applicable/

(1) Any and all action necessary to promptly actions and their timing shall be based on the site/specific situation/ shall be intended to determine if the observed liquid constitutes an unauthorized release and shall be included in the permit/ shall be taken;

[1] Laboratory or field analysis of the observed liquid which shall include minimum levels of detection/

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(2) Observed liquid shall be analyzed in the field or laboratory to determine if an unauthorized release has occurred; and

[2]

(3) Testing of the underground storage tank shall be tested utilizing the procedures described in Section 2643/ a quantitative release detection method which complies with one or more of the performance standards set forth in Section 2643 of this article.

[3] Removing all hazardous substances from the underground storage tank/

(c) If the steps in Paragraph 2642(b) indicate that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter, and shall replace, repair or close the underground storage tank pursuant to Article 3, 6, or 7 of this chapter.

[c]

(d) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not relieve an owner from implementing monitoring for the concealed portion of the tank using a non-visual monitoring alternative as specified in Section 2641 this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25293

2643/ Underground Storage Tank Testing

[a] All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies underground storage tank testing shall implement a testing program pursuant to subsections 2643 [b] through [g] of this section/

[b] Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance at a rate of 0.05 gallons per hour///These methods are limited to those tests that make adjustments for all of the following/ if applicable/

[1] The presence of vapor pockets/

[2] Thermal expansion or contraction of the hazardous substance/ which include any density considerations/

[3] Temperature stratification in the underground storage tank/

[4] Evaporation/

[5] Pressure variations in the underground storage tank/ and

[6] Deflection of the underground storage tank ends/

(c) Testing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test required in Subsection (b) of this section. This hydrostatic pressure test shall be conducted at a pressure of 50 psi (2500 mm Hg) or greater. The test shall be performed for at least 6 minutes. A pressure drop of more than 5 psi (250 mm Hg) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 psi (250 mm Hg) but greater than zero is inconclusive and a pursuant to Subsection (b) of this section shall be performed.

(d) The tests required in this section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test described in Subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified and is capable of measuring leaks of 0.05 gallons per hour. Additionally, 1 year after the development of a listing or certification procedure by a nationally recognized independent testing organization which evaluates the accuracy of the test for the type of test described in Subsection (b) of this section, only listed or certified tests shall be accepted.

(e) Within 30 days of completion of either of the leak detection test described in Subsection (b) or (c) of this section, the underground storage tank owner shall provide the local agency with a report which includes the following information, if applicable:

(1) The procedures used (including any deviations from those recommended by the developer of the underground storage tank test procedure) for the leak detection method.

(2) The test results used in determining the volumetric rate of product loss.

(3) The volumetric rate of product loss, and

(4) The information shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the test procedure used.

(f) Underground storage tanks which are found to lose product shall be repaired or replaced as specified in Articles 6 and 7 of this subchapter, respectively.

(g) The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test.

Section 2643. Non-Visual Monitoring/Quantitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a quantitative release detection method is used. Examples of release detection method(s) that may be used to meet the performance standards of this section are presented in Appendix IV.

(b) At a minimum, any quantitative release detection method(s) used as part of non-visual monitoring shall comply with the performance standards specified in Paragraph (c) of this section for the monitoring of underground storage tanks Paragraph (d) of this section for the monitoring of pressurized piping, and Paragraph (e) of this section for the monitoring of suction piping.

(c) Any quantitative release detection method(s) used for the monitoring of underground storage tanks shall comply with at least one of the following performance standards:

(1) Monitoring shall be conducted at least monthly (once per calendar month after tank filling) and be capable of detecting a release of 0.2 gallon per hour defined at any operating product level in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(2) Monitoring shall be conducted which complies with both of the following:

(A) Monitoring shall be conducted at least annually (once per calendar year after tank filling) and be capable of detecting a release of 0.1 gallon per hour defined at or above the maximum product level determined by the overfill protection system in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; and

(B) Monitoring shall be conducted at least monthly and be capable of detecting a minimum release of 1.0 gallon per hour with a 95 percent probability of detection and not more than a 5 percent probability of false alarm defined at any normal operating product level in the underground storage tank.

(d) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under pressure shall comply with the performance standards specified below in Paragraph 1, and either Paragraph 2 or Paragraph 3 as follows:

(1) Monitoring shall be conducted at least hourly at any pressure, provided that the method is capable of detecting a release equivalent to 3.0 gallons per hour defined at 10 pounds per square inch pressure within one hour of its occurrence with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. The leak detection method shall have the capability of alerting the operator of the presence of an unauthorized release by restricting or shutting off the flow of product through the piping or by triggering a visual or audible alarm. (After December 22, 1998 the leak detection method shall shut off the pump when a release occurs.) If pipeline use is intermittent, leak detection monitoring is required only at the beginning or end of the period during which the pipeline is under pressure, but in any event there shall not be more than one hour between the time the pipeline is put under pressure and detection of an unauthorized release; and

(2) Monitoring shall be conducted at least monthly at any pressure provided that the method is capable of detecting a minimum release equivalent to 0.2 gallon per hour defined at normal operating pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(3) Monitoring shall be conducted at least annually (once per calendar year) at a pressure designated by the equipment manufacturer provided that the method is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at 150 percent (one and one half times) the normal operating pressure of the product piping system at the test pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm.

(e) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under less than atmospheric pressure shall include monitoring conducted at least every three years which is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at a minimum of 40 psi with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. Daily monitoring shall be performed as described in Appendix II.

(f) Inventory reconciliation and manual tank gauging do not require certification of compliance with the performance standards of Paragraph (b) of this section. Manual tank gauging and inventory reconciliation release detection methods shall comply with Sections 2645 and 2646 of this article, respectively.

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(g) Each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, shall have a certification stating that it complies with the performance standard(s) specified in this section. This certification shall be provided as a result of one of the following evaluation procedures:

(1) An independent third party testing laboratory shall evaluate and approve the method using the appropriate "EPA Standard Test Procedure" for leak detection equipment presented in Appendix V; or

(2) An independent third party testing laboratory shall evaluate and approve the method using a voluntary consensus standard that is intended for the method being evaluated; or

(3) An independent third party testing laboratory shall evaluate and approve the method using a procedure deemed equivalent to an EPA procedure. Any resultant certification shall include a statement by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as used in the EPA standard test procedure. This certification shall include a statement that:

(A) The method was tested under various conditions that simulate interferences likely to be encountered in actual field conditions (no fewer nor less rigorous than the environmental conditions used in the corresponding EPA test procedure);

(B) Each condition under which the method was tested was varied over a range expected to be encountered in 75 percent of the normal test cases;

(C) All portions of the equipment or method evaluated received the same evaluation;

(D) The amount of data collected and the statistical analysis are at least as extensive and rigorous as the data collected and statistical analysis used in the corresponding EPA test procedure and are sufficient to draw reasonable conclusions about the equipment or method being evaluated;

(E) The full-sized version of the leak detection equipment was physically tested; and

(F) The experimental conditions under which the evaluation was performed and the conditions under which the method was recommended for use have been fully disclosed and that the evaluation was not based solely on theory or calculation.

(4) The evaluation results must contain the same information and shall be reported following the same general format as the EPA standard results sheet as any corresponding EPA test procedure.

(h) The underground storage tank owner shall notify the local agency 48 hours prior to conducting any tank integrity test. The 48-hour notification requirement may be waived by the local agency. Within 30 days of completion of an underground storage tank integrity test, the tank owner shall provide the local agency with a report. The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank has a release shall be reported by the owner or operator to the local agency within 30 days of completion of the test. The report shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the release detection method used.

(i) If an automatic tank gauge is used as a method of release detection, the automatic tank gauge shall generate a hard copy of all data reported, including time and date; tank identification; fuel depth; water depth; temperature; liquid volume; the time automatic tank gauging is performed; and hourly temperature corrected volume data during the automatic tank test.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.40 - 280.45

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MISSING CITATIONS TO 25291 AND 25293 - See p. 139 of CCR

2644. Non-Visual Monitoring/Qualitative Release Detection Methods

(a) An owner required, pursuant to Section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a qualitative release detection method is used. Each qualitative release detection method shall have an independent third party evaluation to certify accuracy and response time of the detection method in accordance with procedures presented in Appendix V. Examples of qualitative release detection method(s) that may be used are presented in Appendix IV.

(b) Vadose zone monitoring release detection methods shall be conducted in accordance with the requirements of Section 2647.

(c) Ground water monitoring release detection shall be conducted in accordance with the requirements of Section 2648.

(d) Any qualitative release detection method which includes the installation of monitoring wells or the drilling of other borings shall include installation, construction, and sampling and analysis procedures according to the requirements of Section 2649 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2645. Soil Testing

(a) All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires borings for vadose zone or ground water monitoring shall implement soil testing pursuant to Subsections (b) through (d) of this section.

(b) Undisturbed (intact) soil samples shall be recovered from all borings used for the installation.//This requirement may be waived by the local agency when borings cannot be drilled and sampled using accepted techniques that do not introduce liquids into the boring.

(c) Soil samples shall be taken at intervals of 5 feet or less beginning at the ground surface, but sampling shall not be required below the water table nor in unweathered bedrock which has little or no primary permeability.

(d) A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval.

(e) Borings shall be drilled and sampled by techniques that do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using accepted techniques, the requirement for soil sampling may be waived by the local agency. However, the vadose zone or ground water monitoring system shall still be installed. Furthermore, once below the water table, it is not required that the wells be advanced using the same method that was used in the vadose zone.

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(f) Borings shall be described in accordance with the provisions of Subsections 2088 (c) and (d) of this Article.

(g) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide replicate analyses, if specified.

(h) If more than one boring is utilized, composite samples consisting of soil from the same depth from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis and any pollutant in a sample will not be diluted below detection limits by mixing with uncontaminated samples or samples that contain low concentrations of the pollutant.

(i) Soil samples shall be acquired, prepared, preserved, stored, transported and analyzed by methods that are appropriate for the objectives of the investigation and that will safeguard sample integrity. Some acceptable methods may be found in the references listed in Appendix I, Table 2 of this Subchapter. Other similar or superior methods may be approved by the local agency.

(j) Samples shall be analyzed by field or laboratory methods that provide quantitative or qualitative results. If qualitative methods are used, their lower detection limits shall be verified by the developer, distributor or manufacturer of the testing method or device, or by actual field tests in the case of sensory-type tests. The analyses shall be by methods that are

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appropriate for the objectives of the investigation and that will safeguard sample integrity. Some acceptable methods may be found in the references listed in Appendix I, Table 2 of this Subchapter. Other similar or superior methods may be approved by the local agency. The analytical method approved for soil testing shall have a detection limit that is lower than the concentration that would interfere with any of the long-term monitoring methods that could be used at the site.

(k) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then analysis shall be for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents.

(l) Samples may be analyzed in any order of depth. If levels of hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soils analysis is not necessary pursuant to this subsection and the hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank/system is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the

~~underground storage tank can be detected despite the presence of the hazardous substance already in the environment.~~

~~(m) If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or close the underground storage tank pursuant to Article 6 or 7 of this subchapter.~~

~~(n) If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be installed pursuant to Section/2643~~ 2641 of this Article.

2645. Manual Tank Gauging and Testing

(a) Manual tank gauging shall only be used as part of non-visual monitoring for existing underground storage tanks which have a total system capacity of 2,000 gallons or less and which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year.

(b) Manual tank gauging shall not be used on tanks with secondary containment and shall not be used under this article after December 22, 1998 for underground storage tanks with a capacity of 1,001 gallons or greater.

(c) Owners of existing underground storage tanks who utilize manual tank gauging as part of non-visual monitoring shall, at a minimum, conduct weekly gauging according to the following specifications:

(1) Tank liquid level measurements shall be taken at the beginning and ending of a gauging period which shall be at least 36 continuous hours during which no liquid is added to or removed from the tank. The underground storage tank shall be secured to prevent inputs or withdrawals during the gauging period. No inputs shall occur within the 12-hour period preceeding the gauging period. The liquid level measurements shall be based on an average of two consecutive stick readings at both the beginning and ending of the period; and

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

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(3) If the variation between beginning and ending measurements exceeds the weekly or monthly standards set forth in Table 4.1, a second 36 hour test shall be commenced immediately and all measurements and calculations checked for possible errors. If the second test confirms a variation which exceeds the weekly or monthly standards in Table 4.1, then an unauthorized release shall be suspected and a tank integrity test shall be conducted within 72 hours. The local agency may extend this 72-hour period up to 30 days, if all the contents of the underground tank are safely and properly removed within the 72-hour period.

(d) If the results of a tank integrity test conducted under the requirements of Paragraph (c)(3) of this section confirm an unauthorized release, the owner shall comply with the requirements of Article 5 of this chapter and replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Table 4.1

MANUAL TANK GAUGING MEASUREMENT STANDARDS

Tank Size (Gallons)	Weekly Standard (One Test) (Gallons)	Monthly Standard (Average of Four Tests) (Gallons)
550 or Less	10	5
551 to 1,000	13	7
1,001 to 2,000	26	13

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292, 25293

40 CFR 280.43

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2646A/ Vadose Zone Monitoring

[A] All/owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires vapor or another form of vadose zone monitoring shall implement the vadose zone detection monitoring system pursuant to Subsections [B] through [H] of this section/

[B] Vadose zone monitoring shall consist of vapor monitoring/ soil/pore liquid monitoring/ or other forms of vadose zone monitoring///Combinations of these methods may be used/

[C] Wells for vapor monitoring shall be fully perforated except for that portion adjacent to a surface seal and that portion of the bottom of a well where a plugged/ blank segment of casing is used as a free liquid trap/

[D] The number/ location/ and depths of vadose zone monitoring points shall be selected so as to give the earliest possible warning of any unauthorized release from the underground storage tank/

[E] Subsurface vadose zone monitoring systems shall/ if possible/ be located within the backfill surrounding the underground storage tank/

[F] Vapor monitoring for underground storage tanks shall be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection/

[1] Before any method of vapor monitoring is approved for a specific site/ it shall be demonstrated by an actual on-site demonstration/ using an appropriate tracer substance/ that vapor would actually be detected by the installed system///This requirement may be waived by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground storage tanks in equal or less favorable situations/ The following factors shall be considered in comparing the demonstration to the actual on-site conditions/

[A] Backfill materials and grain size distribution/

[B] Type and homogeneity of native soils/

[C] Range of moisture contents of the backfill and native soils that will be encountered/and their effect on/vapor migration and detection/

[2] The location and depth at which each sensor is placed relative to the underground storage tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil/

[3] Vapor monitoring wells placed in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well/

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[g] Soil/pore liquid monitoring and other forms of vadose zone monitoring may be approved if the discharger can clearly show that:

[1] The stored substance is susceptible to detection by the proposed technique;

[2] The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable;

[3] The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system;

[4] The proposed technique will be effective in providing early detection underground storage tank leakage;

[h] Borings shall be described in accordance with the provisions of the subsections 2648[I] and [J] of this article.

2646.1

2646. Inventory Reconciliation

(a) Inventory reconciliation shall only be used as part of non-visual monitoring for existing underground storage tanks which contain motor vehicle fuels.

(b) After January 1, 1993, inventory reconciliation, and any other leak detection method that utilizes manual stick readings, shall not be used as part of non-visual monitoring for existing underground storage tanks containing a hazardous substance including motor vehicle fuel, where the existing ground water level or the highest anticipated ground water level is less than 20 feet below the bottom of the tank. These ground water levels shall be determined according to the requirements of Section 2649(c) of this article.

(c) Inventory reconciliation that utilizes manual stick readings shall not be used after December 22, 1998.

[d] small "o" i cer

(d) All Owners or operators of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies/who utilize inventory reconciliation as part of non-visual monitoring shall comply with implement an inventory reconciliation program as described in Subsections [B] through [I] the requirements of this section. This requirement may be transferred to the operator pursuant to the appropriate provisions of Chapter 6.7 of Division 20 of the Health and Safety Code.

(b)

(e) Each ~~All~~ underground storage tank~~s~~ shall be individually monitored utilizing an ~~daily~~ inventory reconciliation system that takes into account:

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(1) Separate daily underground storage tank quantity measurements for both the stored hazardous substance and any water layer; ~~and~~

(2) Daily ~~meter~~ readings for underground storage tank input and withdrawals; and

(3) Checking of product inputs indicated by delivery receipt by measurement of the tank inventory volume before and after delivery. Underground storage tanks that are connected by a manifold may ~~be monitored as a unit instead of individually///Underground storage tank~~ require time for the level to stabilize before a measurement is taken.

(f) Meters used for determining inputs and withdrawals ~~meters~~ shall comply with California ~~Administrative~~ Code of Regulations, Title 4, Chapter 9, Subchapter 1, "Tolerances and specifications for commercial weighing and measuring devices". Meters shall be inspected by the County Department of Weights and Measures or a device repairman as defined in the California Business and Professions Code, Division 5, Chapter 5.5.

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(c)

(g) For the purpose of this section; "daily" ~~shall be defined as~~ means at least 5 days per week. ~~This minimum~~ The number of days involved may be reduced ~~during weeks that a public holiday occurs on Monday through Friday~~ by the number of public holidays that occur during any such week. Local agencies may reduce

the frequency of monitoring to no less than once every 3 days at facilities that are not staffed on a regular basis, provided that the monitoring is performed on every day the facility is staffed or ~~that~~ when inputs or withdrawals are made from the underground storage tank.

(d)

(h) Underground storage tank quantity measurements shall be based on liquid level ~~elevation~~ measurements which are:

(1) Performed during periods when no additions or withdrawals are being made to the underground storage tank;

(2) Performed by the underground storage tank owner, operator, or other designated ~~personnel~~ persons who have had appropriate training;

(3) Based on the average of two readings if stick or tape measurements are used;

(4) Determined by equipment capable of measuring the level of the product over the full range of the tank's height to the nearest one-eighth of an inch;

(a)

(5) Determined by equipment capable of ~~detecting~~ a measuring, to the nearest one-eighth of an inch, water ~~layer~~ if present in the bottom of the underground storage tank. If the underground storage tank is not level, and the measurements are taken manually then the measurement should occur at the lowest end of the underground storage tank;

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phrase "IF POSSIBLE" IS IN CCR AT P.139

[5]

(6) Measured at the center of the longitudinal axis of the underground storage tank if access is available or measured at the lowest end of the underground storage tank, with a calibration measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and

[6]

(7) Converted to volume measurements based on a calibration chart for the underground storage tank. This chart shall, [if possible] where feasible, take into account the actual tilt of the underground storage tank [as determined initially as described in subsection (5) above].

(i) The daily variation in inventory reconciliation shall be the difference between physically measured inventory in storage and the calculated inventory in storage. The physically measured inventory shall be determined at approximately the same time each day by taking liquid level measurement and converting it to gallons using the calibration chart. The calculated inventory shall be determined at approximately the same time of day for each business day by adding the inputs and subtracting the withdrawals from the physically measured inventory determined the day before. These variations shall be summed for a period of one month. Monthly variations exceeding a variation of 1.0 percent of the monthly tank delivery plus 130 gallons must be investigated in accordance with this section.

[4]

(j) The owner or operator shall, on a [quarterly] an annual basis, submit a statement to the local agency[under penalty of perjury] that [either] the which states that all inventory reconciliation data [is] are within allowable variations or which includes a [listing of the dates] period of times and the corresponding variations [that] which exceed the allowable variations. Said statement shall be executed under penalty of perjury.

[f]

(k) If the monthly inventory reconciliation, conducted under Paragraph (i) of this section, exceeds the allowable variation, [indicates a loss of the hazardous substance greater than that specified] the owner or operator as appropriate [or permittee shall: Implement the following:///If the inventory reconciliation indicates a gain of hazardous substances greater than that specified] the [operator or permittee shall implement subsections (1)][(2)][(3)] and (5) of this section.///The steps may be implemented sequentially or concurrently[.] However[,] they must be completed within the specified time periods.///Reporting as required in Article 5 of this subchapter shall be followed]

[If completion of the steps described in subsections (2)[,] (3)[,] or (5) of this subsection indicates inventory reconciliation error that[,] when corrected[,] cause the levels specified[,] not to be exceeded[,] then the remainder of the steps need not be completed.///If completion of the steps described in subsections (4) or (6) through (8) of this subsection reveal the source of the loss[,] then the remainder of the steps need not be completed]

THE TRANSFER OF HAZARDOUS SUBSTANCES INTO AND OUT OF THE UNDERGROUND STORAGE TANK MAY CONTINUE DURING IMPLEMENTATION OF THE STEPS PROVIDED THAT THE STEPS ARE COMPLETED WITHIN THE SPECIFIED PERIODS AND ANY LOSS OR GAIN DID NOT EXCEED TWO TIMES THE SPECIFIED LEVELS//DAILY RECONCILIATION SHALL CONTINUE DURING IMPLEMENTATION OF THE STEPS/

(1) Notify the local agency of a suspected unauthorized release within 24 hours of completing any inventory reconciliation which exceeds the allowable variation;

(I) THE OPERATOR SHALL NOTIFY THE OWNER VERBALLY OR IN WRITING OF THE FACT THAT INVENTORY RECONCILIATION INDICATES A LOSS OF HAZARDOUS SUBSTANCES OR GAIN OF WATER WITHIN 24 HOURS OF THE COMPLETION OF THE DAILY RECONCILIATION WHICH INDICATES THE LOSS OR GAIN/

(2) Within 24 hours of discovering a variation which exceeds the allowable variation, THE OPERATOR SHALL review the inventory records for the preceding 30 days and WITHIN 2 HOURS TO determine if a calculation error exists WHICH WOULD that caused the gain or loss apparent excessive variation. TO BE LESS THAN THAT SPECIFIED/

"an" in CCR p. 139

(3) THE OPERATOR SHALL HAVE PERFORMED BY A QUALIFIED PERSON/ A//COMPLETE REVIEW OF ALL INVENTORY RECORDS/FROM THE LAST TIME A ZERO LOSS OR GAIN CONDITION EXISTED/ THIS SHALL INCLUDE A NEW INVENTORY RECONCILIATION WHICH WAS/TAKEN/AT LEAST/8 HOURS AFTER THE/INVENTORY RECONCILIATION WHICH TRIGGERED THIS EVALUATION/ THIS SHALL BE COMPLETED WITHIN 24 HOURS OF THE CONCLUSION OF/SUBSECTION (7)(2) OF THIS SECTION/

(4) THE READILY ACCESSIBLE PHYSICAL FACILITIES SHALL BE CAREFULLY INSPECTED FOR LEAKAGE///THIS SHALL BE COMPLETED BY TRAINED PERSONNEL WITHIN 24 HOURS OF COMPLETION OF/SUBSECTION (7)(3) OF THIS SECTION/

(3) Within 24 hours of discovering a variation which exceeds the allowable variation, have all readily accesible facilities carefully inspected for leakage by appropriately trained persons;

(5) CAPITAL "A" in CCR

(4) Have all dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completiong of the procedure required in SUBSECTION (7)(4)Paragraph (4) immediately above of THIS SECTION/.

~~(6) All piping shall be tested within 24 hours of completion of subsection (f)(5) of this section.//The piping shall be isolated and hydrostatically pressure tested at/50 psi (2600 mm Hg) or greater.// If the pressure drops more than 5 psi (260 mm Hg) per minute/ it indicates the probability of a leak in the line.//Repeat the test at least once to ensure against compression of entrained air.//Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling.//This step may be completed after/the step described in subsection(f)(7) of this section if excavation is necessary to perform the tests and if/the step described in/subsection (f)(7) of this section is completed within 48 hours of the completion of subsection (f)(5) of this section.//If this occurs/ then this subsection shall be completed within 24 hours of the completion of subsection (f)(7) of this section/~~

~~(7) The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of subsection (f)(6) of this section/~~

(5) Continue to conduct inventory reconciliation according to the requirements of this section. If a second 30-day period of data confirms the initial results, the owner or operator shall comply with the requirements of Article 5 of this chapter; and

~~(8)~~ CAPITAL "A" in CCR p. 140

(6) Conduct such additional tests or investigations as may be required by the local agency.

(l) Whenever any of the steps in Paragraph (k) of this section are performed, the results shall be documented in the monitoring record required under Section 2712 of Article 10 of this chapter. If completion of any one of these steps indicates an inventory reconciliation error that, when corrected, indicates that allowable variations have not been exceeded, then the remainder of the steps need not be completed. If completion of any of these steps indicates that the apparent excessive variation is not due to a release or tank failure, then the remainder of the steps need not be completed.

(m) The transfer of hazardous substances into and out of the underground storage tank may continue while the steps indicated in Paragraph (k) are being implemented provided the steps indicated are completed within the specified periods. Daily inventory readings and monthly reconciliation shall continue while the steps are being implemented.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25291, 25292.

40 CFR 280.43

UNDERLINE TO ADD IT TO CCR

2667/ Ground Water Monitoring

(a) All owners of existing underground storage tanks/ implementing one of the monitoring alternatives in Section 2641 of this Article which requires ground water monitoring shall implement a ground water monitoring system pursuant to subsections (b) through (i) of this section/

(b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster/

(c) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the underground storage tank bottom///However/ wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick///In these situations/ the well shall be terminated 1 to 2 feet into this clay layer/

(d) Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point 1 foot above the bottom of the casing to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface/ whichever is the lowest point above the highest anticipated ground water level/

(e) Ground water monitoring wells shall be constructed as filterpacked wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well/

(f) All well casings shall have a bottom cap or plug/

(g) Filter packs shall extend at least 2 feet above the top of the perforated zone except where the ground surface is less than 10 feet above the highest ground water level/ in which case this requirement may be waived by the local agency provided the filter pack extends to the top of the perforated zone/

(h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the inside diameter of the casing/

(i) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack/

(j) Borings shall be described in accordance with the provisions of Sections 2648 (e) and (h) of this Article/

Authority/ HSC 25299/3
References/ HSC 25292

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2647. Vadose Zone Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize vadose zone monitoring as part of non-visual monitoring shall comply with the requirements of this section. Vapor monitoring, soil-pore liquid monitoring, or a combination of these or other vadose zone monitoring methods may be used.

(b) Vadose zone monitoring shall not be used as the sole release detection method of non-visual monitoring for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than ten feet below the bottom of the tank. Ground water levels shall be determined according to the requirements of Section 2649(c) of this article.

(c) Vadose zone vapor monitoring shall be conducted either daily or continuously. Other vadose zone monitoring shall be conducted at least weekly. At a minimum, all manual sampling shall comply with the requirements of Section 2649(g) of this article.

(d) The number, location, and depths of vadose zone monitoring points shall be selected to achieve the objective specified in Section 2641(a) of this article. Where possible, monitoring points shall be located within the excavation backfill surrounding the underground storage tank. The owner or operator shall determine the exact location of the underground storage tank before attempting to install monitoring wells and/or devices as approved by the local agency.

(e) Vadose zone vapor monitoring shall comply with the following minimum requirements:

(1) The vapor characteristics of the stored product, or a tracer compound placed in the underground tank system, shall be sufficiently volatile to result in a vapor level that is detectable by the monitoring devices;

(2) Backfill materials and soils surrounding monitoring points shall be sufficiently porous to readily allow diffusion of vapors;

(3) The level of background contamination in the excavation zone and surrounding soils shall not interfere with the method used to detect releases from the underground storage tank;

(4) The monitoring devices shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system;

(5) To maximize release detection, the location and depth of each monitoring point shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(6) Vapor monitoring wells located in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well; and

(7) All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in Sections 2649(b)(c)(e)&(f) of this article.

(f) Soil-pore liquid monitoring and other forms of vadose zone monitoring shall comply with the following minimum requirements:

(1) The stored substance shall be susceptible to detection by the proposed release detection method;

(2) The stored substance shall not corrode or otherwise attack the materials from which the detection system is constructed or otherwise render the detection system inoperable or inaccurate; and

(3) Site-specific conditions (e.g., precipitation, ground water, soil-moisture, background contamination) shall not interfere with the operability and accuracy of the release detection method.

(g) Compliance with the requirements of Paragraphs (e) and (f) of this section shall be based on a site-assessment, including assessment of the underground storage tank excavation zone.

Authority: H&SC 25299.3, 25299.9

Reference: H&SC 25292

40 CFR 280.43

2648/ General Construction and Sampling Methods

(a) Soil and water sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance and shall not adsorb/ capture/ mask/ nor alter the constituents for which analyses will be made/

(b) Representative samples of all imported materials used for filter packs//and to construct seals shall be evaluated to determine their acceptability with regard to subsection (a) of this section/

(c) All drilling tools shall be thoroughly cleaned immediately before a boring is started/

(d) All well casings/ casing fittings/ screens/ and all other components that are installed in the well shall be thoroughly cleaned before installation in the boring/

(e) All soil and water samplers shall be cleaned before each sample is taken/

(f) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the provisions of Subsection (d) of this section. All additives used and the depth in which they were used shall be accurately recorded in the boring log.

(g) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents.

(h) All ground water monitoring wells shall be appropriately developed until the discharge water contains less than 10 ppm settleable solids.

(i) Well heads shall be provided with a watertight cap.

(j) Well heads shall be enclosed in a surface security structure that protects the well from the entry of surface water, accidental damage, unauthorized access, and vandalism. This may be accomplished by providing a locked well cap or by securing the facility within which a well is located.

(k) Pertinent well information including well identification, well type, well depth, well casing diameters if more than one size is used, and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(l) Surface seals for vapor wells that are completed no more than 5 feet below the bottom of the underground storage tank and which are above any free water zones shall be required at the discretion of the local agency on a site specific basis.

(m) If surface seals for vapor wells that are completed in or below a free water zone are required, the seal shall not extend below the top of the underground storage tank.

(n) Vapor wells constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface need not be sealed against infiltration of surface water.

(o) The need for surface seals for other types of vadose zone installations shall be determined on a case-by-case basis.

(p) In order to supplement monitoring alternatives 2, 3, 4, and the ground water monitoring well portion of 5, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by a review of all available water level records for wells within 1 mile of the site. Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all existing wells for which records are available that are within 500 feet of the facility and which are perforated in the zone of interest, or by drilling at least 1 exploratory boring constructed as follows:

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(I) The exploratory boring shall be drilled downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than 500 feet from the underground storage tank.

(2) The exploratory boring may be of any diameter capable of allowing the detection of first water.

(3) The exploratory boring shall be drilled to first permanent ground water or to a minimum depth of 100 feet for Alternatives 1, 2, and 3 or to a minimum depth of 50 feet for Alternative 4.

(4) If ground water is encountered and ground water monitoring is part of the monitoring alternative, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section and Section 2647 of this article.

(5) If ground water is encountered but monitoring is not required or if the exploratory boring does not encounter ground water it shall be sealed in accordance with the provisions of Subsections 2648 (b) and (c) of this article.

(h) All borings that are not used for ground water or vapor zone monitoring shall be sealed from the ground surface to the bottom of the boring with bentonite grout.

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(4) All borings that are converted to vapor zone monitoring wells in which the monitored interval is shallower than the total depth of the boring shall have the portion of the boring which is beyond the monitored interval sealed with bentonite grout.

(5) All borings shall be abandoned by the person doing the drilling.

(i) All borings shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist/ civil engineer/ or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System/// Technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings/ provided the aforementioned professionals review the logs and assume responsibility for the accuracy and completeness of the logs/

(j) All zone above the free water zone shall be noted and accurately logged/

(k) If evidence of contamination is detected by sight, smell or other field analytical methods/ drilling shall be halted until the responsible professional determines if drilling deeper is advisable/

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2648. Ground Water Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize ground water monitoring as part of non-visual monitoring shall comply with the requirements of this section. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where permissible under this section, as the sole release detection method.

(b) Ground water monitoring may be used as the sole release detection method of non-visual monitoring for existing underground tanks only where all of the following conditions exist:

(1) The hazardous substance stored in the underground storage tank is immiscible with water and has a specific gravity of less than one;

(2) Continuous monitoring devices or manual methods are used which are capable of detecting the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells. This capability shall be certified by an independent third party using an appropriate evaluation procedure. Examples of acceptable evaluation procedures are provided in Appendix V of this chapter;

(3) The existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than 20 feet from the ground surface. These ground water levels shall be determined according to the requirements of Section 2649(c) of this article;

(4) The hydraulic conductivity of the soil(s) between the underground storage tank and the monitoring wells or devices is at least 0.01 cm/sec (e.g. the soil consists of gravels, coarse to medium sands, or other permeable materials);

(5) The ground water proposed for monitoring has no present beneficial uses (e.g., domestic, municipal, industrial, agricultural supply) or is not hydraulically connected to ground or surface water which has actual beneficial uses; and

(6) Monitoring wells or devices are located within the excavation zone or as close to the excavation zone as feasible.

(c) Compliance with the conditions specified in Paragraph (b) of this section shall be based on a site-assessment, including assessment of the areas within and immediately below the underground storage tank excavation zone. If ground water monitoring is approved as the sole release detection method of non-visual monitoring, the number and location of the monitoring wells and/or devices as approved by the local agency shall also be based on this site-assessment with minimum requirements as follows:

(1) Single tank - two wells, one at each end of the tank.

(2) Two or three tanks - three wells equally spaced.

(3) Four or more tanks - four wells, at least two of which shall be downgradient and the remainder equally spaced.

(4) Pipelines - additional wells, if needed, as determined by the local agency.

(d) Ground water monitoring shall be conducted at least monthly or continuously. Any continuous monitoring system shall be capable of detecting the presence of hazardous substance on top of the ground water in the monitoring well and allow collection of periodic samples. Ground water samples shall be analyzed by visual observation or field or laboratory analysis as approved by the local agency depending on the method of monitoring and the constituents being evaluated. The local agency may require periodic laboratory analysis where visual observation or field analysis does not provide an adequate degree of detection as compared to that of laboratory analysis. *Sampling conducted* which requires field or laboratory analysis shall comply with the minimum requirements of Section 2649(g) of this article.

(e) The number, location, and depths of ground water monitoring wells shall be selected to achieve the objective specified in Section 2641(a) of this article. *Monitoring wells shall be located as close as possible to the* underground storage tank or the perimeter of the underground storage tank cluster, subject to the review and approval of the local agency.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

2649. Well Construction and Sampling Requirements

(a) Owners of existing underground tanks who utilize a qualitative release detection method shall comply with the requirements of this section and any applicable requirements of Sections 2644, 2647, and 2648 of this article.

(b) The installation of all monitoring wells and the drilling of all other borings shall be in accordance with local permitting requirements or in their absence, with the following requirements:

(1) All monitoring wells and all other borings shall be logged during drilling according to the following requirements:

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5, and 6, published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention: Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225);

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation;

(C) All wet zones above the water table shall be noted and accurately logged. Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log; and

(D) Geologic logs shall be described by a professional geologist or civil engineer, who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System, or by a technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals, provided that the professional must review the logs and assume responsibility for the accuracy and completeness of the logs.

(2) All drilling tools shall be thoroughly steam cleaned immediately before each boring is started;

(3) All well casings, casing fittings, screens, and all other components that are installed in a well shall be thoroughly cleaned before installation;

(4) Soil and water sampling equipment and materials used to construct a monitoring well shall be compatible with the stored hazardous substance and shall not donate, capture, mask, or alter the constituents for which analyses will be made. All perforated casings used in the construction of monitoring wells shall be factory perforated;

(5) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the requirements of Paragraph (b)(4) of this section. All additives used shall be accurately recorded in the boring log;

(6) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents;

(7) If evidence of contamination is detected by sight, smell, or field analytical methods, drilling shall be halted until a responsible professional determines if further drilling is advisable;

(8) All borings which are converted to vadose zone monitoring wells shall have the portion of the boring which is below the monitored interval sealed with approved grout;

(9) All borings which are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with an approved grout. All slurry-type grouts used to seal an abandoned boring or an abandoned well shall be emplaced by the tremie method; and

(10) All monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering. Surface seals may be required by the local agency.

(c) When installing a vadose zone or ground water monitoring well, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by reviewing all available water level records for wells within one mile of the site. Existing site ground water levels shall be established either by reviewing all available water level measurements taken within the last two years at all existing wells, within 500 feet of the underground storage tank which are perforated in the zone of interest, or by drilling at least one exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient, if possible, and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than ten feet from the underground storage tank;

(2) The exploratory boring may be of any diameter capable of allowing the detection of first ground water;

(3) The exploratory boring shall be drilled to first perennial ground water, or to a minimum depth of 20 feet for vadose zone monitoring wells, or to a minimum depth of 30 feet for ground water monitoring wells if permitted by site lithology;

(4) If ground water is encountered, and ground water monitoring is the monitoring method, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section; and

(5) If ground water is encountered, but ground water monitoring is not the monitoring method, or if the exploratory boring does not encounter ground water, the boring shall be sealed in accordance with the provisions of Paragraph (b)(9) of this section.

d) In addition to the requirements of Paragraph (b) of this section, all ground water monitoring wells shall be designed and constructed according to the following minimum requirements:

(1) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the bottom level of the underground storage tank. However, wells shall not extend through laterally extensive impermeable zones that are below the water table and that are at least five feet thick. In these situations, the well shall be terminated one to two feet into the impermeable zone;

(2) Ground water monitoring wells shall be designed and constructed as filter packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well;

(3) Ground water monitoring well casings shall extend to the bottom of the boring and shall be factory perforated from a point of one foot above the bottom of the casing to an elevation which is either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation;

(4) All well casings shall have a bottom cap or plug;

(5) Filter packs shall extend at least two feet above the top of the perforated zone except where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones or where the ground surface is less than ten feet above the highest anticipated ground water level, the local agency may reduce the height of the filter pack so long as the filter pack extends at least to the top of the perforated zone. Under such circumstances, additional precautions shall be taken to prevent plugging of the upper portion of the filter pack by the overlying sealing material;

(6) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of two inches which are installed in a boring whose diameter is at least four inches greater than the outside diameter of the casing;

(7) Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction;

(8) Seventy-two or more hours following well construction, all ground water monitoring wells shall be adequately developed and equilibrium shall be established prior to any water sampling;

(9) Well heads shall be provided with a water-tight cap and shall be enclosed in a surface security structure that protects the well from surface water entry, accidental damage, unauthorized access, and vandalism. Traffic lids shall be clearly marked as monitoring wells; and

(10) Pertinent well information including well identification, well type, well depth, well casing diameters (if more than one size is used), and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(e) In addition to the requirements of Paragraph (b) of this section, all vadose zone vapor monitoring wells shall be cased and sealed as follows:

(1) Well casings for vapor monitoring shall be fully perforated except for the portion adjacent to a surface seal and that portion used as a free liquid trap;

(2) Surface seals for vapor wells that are completed no more than five feet below the bottom of the underground storage tank and which are above any free water zones may be required at the discretion of the local agency on a site-specific basis;

(3) If surface seals for vapor wells are completed in or below a potential free water zone, the seal shall not extend below the top of the underground storage tank; and

(4) Vapor wells need not be sealed against infiltration of surface water if constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface.

(f) Undisturbed (intact) soil samples shall be obtained from all borings for the installation of monitoring wells and all other borings and analyzed according to the following minimum requirements, unless the local agency waives this requirement under this subsection:

(1) Borings shall be drilled and sampled using accepted techniques which do not introduce liquids into the boring and which will allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using acceptable techniques, the requirement for soil sampling may be waived by the local agency provided, however, that installation of the vadose zone or ground water monitoring system shall be completed; and provided further, that once below the water table, borings need not be advanced using the same method that was used in the vadose zone;

(2) Soil samples shall be obtained at intervals of five feet or less and at any significant change in lithology, beginning at the ground surface. Sampling is not required in unweathered bedrock which has little or no permeability;

(3) A soil sample shall be obtained at the termination depth of a dry boring regardless of the spacing interval;

(4) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide any specified replicate analyses;

(5) Soil samples shall be acquired, prepared, preserved, stored, and transported by methods that are appropriate for the objectives of the investigation which safeguard sample integrity and satisfy the requirements of Paragraph (g) of this section;

(6) Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative or qualitative results. Lower detection limits shall be verified by the laboratory;

(7) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then samples shall be analyzed for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents;

(8) If hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soil analysis is not necessary pursuant to this subsection. The hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations and the owner or operator shall comply with Paragraph (9) of this subsection. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment; and

(9) If soil analysis indicates that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank pursuant to Article 3, 6 or 7 of this chapter.

(g) The qualitative release detection method shall include consistent sampling and analytical procedures, approved by the local agency, that are designed to ensure that monitoring results provide a reliable indication of the quality of the medium (e.g., ground water, soil-pore liquid, soil vapor, or soil) being monitored. Some acceptable procedures are listed as references in Appendix I, Table C of this chapter. At a minimum, the owner or operator shall provide a written detailed description, to be specified in the permit and to be maintained as part of the records required under Section 2712 of Article 10 of this chapter, of the procedures and techniques for:

(1) Sample collection (e.g., purging techniques, water level, sampling equipment, and decontamination of sampling equipment);

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain-of-custody control.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292

40 CFR 280.43

Article 5. Release Reporting and Initial Abatement Requirements

2650. Reporting and Recording Applicability

[a] All unauthorized releases from the primary or secondary container shall be reported according to the requirements of the appropriate sections of Chapter 6/7 of Division 20 of the Health and Safety Code and this article/

[b] Certain unauthorized releases to secondary containers/ as described in Section 25294 of the Health and Safety Code/ shall be recorded on the operators monitoring reports according to Section 2651 of this article///No other report shall be required if the leak detection monitoring system in the space between the primary and secondary containers can be reactivated within 8 hours///This provision shall be applicable only to new underground storage tanks as defined in Article 2 of this subchapter/

[c] All other unauthorized releases shall be reported within 24 hours after the release has been/ or should have been / detected according to Section 2652 of this article/

(a) The requirements of this article apply to all owners or operators of one or more underground storage tanks storing hazardous substances.

(b) The owner or operator shall record or report any unauthorized release from the underground storage tank, and any spill or overfill, in accordance with the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(c) The owner or operator of an underground storage tank with secondary containment shall record any unauthorized release described in Section 25294 of the Health and Safety Code in accordance with Section 2651 of this article.

(d) Owners or operators subject to the requirements of this article shall record all spills and overfills in accordance with the requirements of Section 2651 of this article.

(e) The owner or operator of an underground storage tank shall report on a form provided by the Board any unauthorized release described in Section 25295 of the Health and Safety Code, and any of the following conditions according to Section 2652 of this article:

(1) Any unauthorized release recorded under Paragraphs (c) or (d) of this section which the owner or operator is unable to cleanup or which is still under investigation within eight hours of detection;

(2) The discovery by the owner or operator, local agency, or others of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;

(3) Unusual operating conditions observed by the owner or operator including erratic behavior of product dispensing equipment, the sudden loss of product from the underground storage tank, or an unexplained presence of water in the tank, unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced; and

(4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless: the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

(f) The reporting requirements of this article are in addition to any reporting requirements specified by Section 13271 of Division 7 of the California Water Code and other laws and regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25294, 25295

40 CFR 280.52

2651. ~~Unauthorized Releases Requiring~~ Recording Requirements for Unauthorized Releases

(a) Owners or operators required by section 2650 to record a release or condition shall comply with the requirements of this section.

~~(d)~~

(b) The operator's monitoring records, as required under Section 2712 of Article 10 of this chapter ~~report required by subsection 2650(b) of this article~~ shall include:

~~(1) The operator's name and telephone number;~~

~~(1)~~ — CAPITAL "L" in CCR p. 142

(2) A list of the types, quantities, and concentrations of hazardous substances released;

~~(2) Method of cleanup;~~

(3) A description of the actions taken to control and cleanup the release;

~~(3)~~ — CAPITAL "M" in CCR p142

(4) The method and location of disposal of the released hazardous substances (indicate whether a hazardous waste manifest~~(s)~~ is was/will be utilized);

~~(4) Method of future leak prevention or repair;//If this involves a change as defined in Article 10, Section 2712, subsection (a), of this subchapter, then appropriate reports pursuant to that article shall also be filed.~~

(5) A description of the actions taken to repair the underground storage tank and to prevent future releases. If this involves a change as described in Section 25286 of the Health and Safety Code, then notification pursuant to that section shall be made.

~~(5)~~

(6) ~~If the primary container is to continue to be used, then~~ A description of ~~how~~ the method used to reactivate the interstitual monitoring system ~~between the primary and secondary containment~~ after replacement or repair of the primary containment.

"HAS Been Reactivated" in CCR p. 142

~~(6) Facility operator's name and telephone number;~~

~~(7) The approximate costs for cleanup to be submitted included voluntarily;~~

(c) The integrity of the secondary containment should be reviewed for possible deterioration under the following conditions:

(1) Hazardous substance in contact with the secondary containment is not compatible with the material used for secondary containment;

(2) The secondary containment is prone to mechanical damage from the mechanical equipment used to remove or clean up the hazardous substance collected in the secondary containment; or

(3) Hazardous substances, other than those stored in the primary containment system, are added to the secondary containment to treat or neutralize the released hazardous substance and the added substance or resulting substance from such a combination is not compatible with the secondary containment.

TO SHOW MOVING THIS SUBSECTION TO END OF EXISTING REGULATIONS IT SHOULD ALL BE UNDERLINED

(d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts (e.g., secondary containment is breached due to deterioration), the release shall ~~immediately be treated as a reportable release~~ be reported pursuant to Section 2652 of this article.

~~(b)~~

(e) Whenever the local agency ~~shall~~ reviews the operator's monitoring reports and finds that one or more recordable unauthorized releases have occurred, the local agency shall review the information ~~submitted~~ included in the monitoring records pursuant to ~~subsection~~ Paragraph 2651 (a), of this section and shall review the permit, and may inspect the underground storage tank pursuant to ~~the provisions of Article 10, Section 2712, subSections~~ 2712 ~~(b)~~ (e) and ~~(h)~~ (f) ~~of this subchapter~~ Article 10. If the local agency ~~shall~~ finds that the containment and monitoring standards of Article 3 of this ~~subchapter~~ can no longer ~~continue to~~ be met, ~~achieved or~~ the local agency shall ~~revoke the permit~~ require the operator to cease the operation of the underground storage tank system until appropriate modifications are made to ~~bring compliance~~ comply with the standards.

~~(1) Deterioration of the secondary container is likely when any of the following conditions exist:~~

~~(I) The secondary container will have some loss of integrity due to contact with the stored hazardous substances;~~

~~(2) The mechanical means used to cleanup the released hazardous substance could damage the secondary container; or~~

[3] Hazardous substances, other than those stored in the primary container, are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the cleanup process.

Authority: H&SC 25299.3, 25299.7 UNDERLINE

Reference: H&SC 25291, 25292, 25294, 25295

40 CFR 280.52

2652. Reporting, Investigation and Initial Response Requirements for Unauthorized Releases Requiring Reporting.

[a] All other unauthorized releases shall be reported as specified in this section.

(a) Owners or operators required, by Section 2650 of this article, to report a release or condition shall comply with the requirements of this section.

(b) Within 24 hours after the an unauthorized release or condition has been detected, or should have been detected, using required monitoring, the owner or operator shall notify the local agency by submitting a leak report form and the State Office of Emergency Services or the regional board, shall investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board.

(c) Within 5 working days of detecting the an unauthorized release, the owner or operator or permittee shall submit to the local agency a full written report to which includes all of the following information which is known at the time of filing the report:

(1) Operator's name and telephone number;

[1] CAPITAL "L" IN CCR

(2) A list of the types, quantities, and concentrations of hazardous substances released;

(3) The approximate time the unauthorized release occurred;

(4) The time the unauthorized release was discovered;

(5) The time the unauthorized release was stopped;

(6) A description of the actions taken to control and/or stop the release;

[2]

(7) A description of the corrective and remedial actions including investigations which were undertaken and will be the results of all investigations completed at that time conducted to determine the nature, and extent of soil, or ground water or surface water contamination due to the release;

[3] CAPITAL "M" IN CCR.

(8) The method(s) of cleanup implemented to date, proposed cleanup actions, and approximate cost of actions taken to date a time schedule for implementing the proposed actions;

[A] CAPITAL "M" CCR

(9) The method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water [INDICATE WHETHER A HAZARDOUS WASTE MANIFEST[S] IS UTILIZED]. Copies of any hazardous waste manifests completed for off-site transport of these media shall be attached to the report;

[B] CAPITAL "P" CCR

(10) A description of the proposed method(s) of repair or replacement of the primary and secondary containment. If this involves a change [AS DEFINED IN SUBSECTION 2712(A) OF ARTICLE 10 OF THIS SUBCHAPTER] described in Section 25286 of the Health and Safety Code, then notification [APPROPRIATE REPORTS] pursuant to that [ARTICLE] section shall [ALSO be FILED] made.

(11) A description of the actions taken to prevent future releases.

[C] [FACILITY OPERATOR'S NAME AND TELEPHONE NUMBER]

(d) Until investigation and cleanup [IS] are complete, the owner or operator [OF PERMITTEE] shall submit reports to the local agency [AND THE] or regional board, whichever is overseeing the cleanup, every 3 months or at [A] more frequent intervals as specified by [A RESPONSIBLE AGENCY] the local agency or regional board. At a minimum, the reports shall include the information requested in [SUBSECTIONS] Paragraphs (c)[2](7), (c)[3](8), and (c)[4](9) of this section. The reports shall be submitted as attachments to the Leak Site Update Form provided by the Board and obtained from the agency overseeing the cleanup. These reports shall contain all data and analyses resulting from

investigations and corrective actions. Information obtained in Sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency.

(e) Free product removal reports prepared in compliance with Section 2655 of this article shall be submitted to the local agency within 45 days of release confirmation.

[E] THE REPORTING REQUIREMENTS OF THIS SECTION ARE IN ADDITION TO ANY REPORTING REQUIREMENTS SPECIFIED BY SECTION 13271 OF DIVISION 7 OF THE WATER CODE AND OTHER LAWS AND REGULATIONS.

(f) The owner or operator shall conduct the initial abatement and site characterization actions according to the requirements of Sections 2653 and 2654 of this article.

(g) If the test results from either an investigation conducted under Paragraph (f) of this section or any other procedures approved by the local agency do not confirm that a release from the underground storage tank has occurred, no further investigation or corrective action is required.

Authority: H&SC 25299.3, 25299.7 MISSING CCR HAS 25288.2 FOR AUTHORITY

Reference: H&SC 25286, 25288, 25295 25284.4 FOR REFERENCE

40 CFR 280.50 - 280.53

2653. Initial Abatement Actions

(a) Owners or operators required by Paragraph 2652(f) this article, to conduct initial abatement actions shall comply with the requirements of this section. Owners and operators shall:

(1) Remove as much of the hazardous substance from the underground storage tank as is necessary to prevent further release to the environment.

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

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

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

(5) Investigate to determine the possible presence of free product, and if free product is present begin removal thereof as soon as practicable in accordance with the requirements of Section 2655 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.61, 280.62

2654. Initial Site Characterization

(a) Owners or operators required by Paragraph 2652(f) of this article to conduct initial site characterization actions shall comply with the requirements of this section.

(b) The owner or operator shall promptly assemble information about the underground storage tank site and the nature of the unauthorized release, including information gained while confirming the release or completing the initial abatement actions in Section 2653 of this article. This information must include, but is not necessarily limited to, the following:

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

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

(3) Results of any investigation conducted under Paragraph 2652(f) of this article;

(4) Results of the free product investigations required under Paragraph 2653(a) (5) of this article to be used by the owner or operator to determine whether free product must be recovered;

Authority: H&SC 25299.3, 25299.7
Reference: H&SC 25295
40 CFR 280.63

2655. Free Product Removal

(a) At sites where investigations under Section 2653 of this article indicate the presence of free product, owners or operators shall comply with the requirements of this section and remove free product to the maximum extent practicable as determined by the local agency while continuing, as necessary, any actions required under Sections 2652 through 2654 of this article.

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

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c) The owner or operator shall use abatement of free product migration as a minimum objective for the design of the free product removal system.

d) The owner or operator shall handle any flammable products in a safe and competent manner.

e) The owner or operator shall prepare and submit to the local agency, within 45 days after confirming a release, a free product removal report that provides at least the following information:

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

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

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

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

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

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

(7) The means of disposal and/or proposed disposition of the recovered free product.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25295

40 CFR 280.64

Article 6. Allowable Repairs and Upgrade

2660. Applicability

(a) This article describes the conditions which must be met to repair or upgrade underground storage tank systems.

(b) Section 2661 of this article describes the repair requirements for underground storage tanks and piping.

(c) Section 2662 of this article describes upgrade requirements for corrosion protection for all underground storage tanks installed on or before January 1, 1984. Underground storage tanks constructed of fiberglass, steel clad with fiberglass or noncorrosive materials do not require upgrade to prevent releases due to corrosion.

(d) Section 2663 of this article describes the upgrade requirements for spill and overfill prevention equipment.

(e) Section 2664 of this article describes the upgrade requirements for underground pressurized piping.

(f) Upgrade requirement for underground storage tanks, for spill and overfill prevention, and for underground pressurized piping shall be completed on or before December 22, 1998.

[a] This article describes the conditions which must be met to allow primary container repairs of underground storage tanks containing motor vehicle fuel not under pressure utilizing the interior coating process/ the required repair methodology/ and the required underground storage tank testing following repair/

[b] Section 2661 of this article lists the required evaluations which must be completed in order to allow the repair of a primary container///A satisfactory demonstration of each part of Section 2661 of this article shall be made prior to approval by the local agency of the repair process/

[c] Section 2662 of this article describes the required methodology which must be utilized in the interior coating repair process/

[d] Section 2663 of this article lists the required primary container monitoring which shall be implemented by amendment of the permit by the local agency following primary container repair///Subsections [a] and [b] of Section 2663 of this article describe the monitoring which shall be performed prior to placing the underground storage tank back in service/

Authority/ HSC 25299/3

Reference/ HSC 25295

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(g) The owner may line an underground storage tank containing motor vehicle fuel not under pressure as a preventative measure. The owner shall notify the local agency of his intent to line the tank. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release. The owner shall notify the local agency prior to taking soil samples. If there has been no unauthorized release, the owner may line the tank in accordance with Section 2662 of this article.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25292.1, 25296

40 CFR 280

2661. Underground Storage Tank Repairs ~~Evaluation~~

(a) The evaluations described in ~~subsections~~ Paragraphs (b) through (d) of this section must be completed before a primary container repair can be authorized by the local agency. ~~Failure~~ The local agency shall deny the proposed repair if the owner fails to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below ~~shall be grounds for a local agency to deny the proposed repair~~.

(b) It shall be determined if the cause of failure ~~mechanism~~ is isolated to the actual failure or is affecting other areas of the underground storage tank, or if any other causes of failure ~~mechanism~~ is affecting the primary container.

(c) ~~One of the following~~ Appropriate tests shall be conducted ~~to determine the~~ ~~thickness of the underground storage tank:~~ ~~(1) An ultrasonic test~~ ~~(2)~~ and ~~Certification~~ certified by a special inspector that the shell will provide structural support ~~for~~ if the tank is repaired using the interior lining method. The special inspector shall make this certification by entering and inspecting the entire interior surface of the underground storage tank and shall base this certification upon the following procedures and criteria: ~~(A)~~

(1) If the underground storage tank is made of glass fiber, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section of the tank has compressed more than 1 percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service unless the tank is excavated and rehabilitated to correct the compression. The special inspector shall also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fiber reinforcing is required for certification before the underground storage tank may be lined.

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p143 TYPO — HAS IT SPELLED AS FIBRE

~~(B)~~

(2) If the underground storage tank is made of steel, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank interior surface shall be abrasive blasted completely free of scale, rust, and foreign matter. The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness ~~THE SPECIAL INSPECTOR SHALL SOUND ANY PERFORATIONS OR AREAS SHOWING CORROSION PITTING WITH A BRASS BALLPEEN HAMMER TO ENLARGE THE PERFORATION OR BREAK THROUGH A POTENTIALLY THIN STEEL AREA/~~ or the underground storage tanks ~~THAT HAVE~~ has any of the following defects ~~SHALL NOT BE CERTIFIED OR RETURNED TO SERVICE/~~

SMALL "T" - CCR - p.143

CAPITAL "U" in p.143

1 (i) ~~AN UNDERGROUND STORAGE TANK WHICH HAS~~ An open seam or a split longer than 3 inches.

SMALL A - CCR

2 (ii) ~~AN UNDERGROUND STORAGE TANK WHICH HAS A~~ perforation larger than 1-1/2 inches in diameter or below a gauging opening larger than 2-1/2 inches in diameter.

"5" in CCR p. 143

3 (iii) ~~AN UNDERGROUND STORAGE TANK WITH~~ Five or more perforations in any 1 square-foot area. ~~AND ANY SINGLE PERFORATION WHICH IS LARGER THAN 1/2 INCH IN DIAMETER~~

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~~(IV) AN UNDERGROUND STORAGE TANK WITH 20 OR MORE PERFORATIONS IN A 500 SQUARE-FOOT AREA AND ANY SINGLE PERFORATION WHICH IS LARGER THAN 1/2 INCH IN DIAMETER/~~

~~(V) ANY FAILURE OR OPENING WITHIN 6 INCHES OF ANY SEAM OR WELD/~~

(iv) Multiple perforations of which any single perforation is larger than 1/2 inch in diameter.

(3) A test approved by the board as comparable to the tests specified in ~~SUB~~Paragraph ~~(A) OF (B)~~ (1) or (2) of this ~~SUB~~section immediately above.

(d) It shall be demonstrated to the satisfaction of the local agency based on ~~ONE OF~~ the tests in ~~SUBSECTION~~ Paragraph (c) of this section that a serious corrosion or structural problem does not exist. If the local agency determines that a serious corrosion or structural problem exists, an interior lining repair may be used ~~ALLOWED BY THE LOCAL AGENCY~~ if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structural integrity or containment ability of the underground storage tank.

(e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

2662/ Repair Methodology

[A] If an interior lining of an underground storage tank is approved by the local agency based on satisfactory demonstration of the issues raised in Section 2661 of this article/ then the repair must be accomplished according to the applicable subsections of this section/

[B]

(f) If interior lining (coating) is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices.

[E]

(g) The repair material and any adhesives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the hazardous substance being stored.

[H]

(h) The repair material and lining process shall be listed or certified by a nationally recognized an independent testing organization based on voluntary consensus standards. The requirement shall become effective 1 year after the effective date of these regulations or 1 year after a listing or certification procedure is available/ whichever is later.

i) Holes shall be plugged using self-tapping bolts or boiler plugs or by welding and shall be repaired as follows:

(1) Repair areas shall be covered with epoxy or isophthalic polyester based resin. The resin shall be compatible with the intended use of the tank.

(2) Fiberglass cloth with a minimum weight of 1.5 oz/yd that is silane treated shall be worked completely into the resin base. The resin base shall be installed a minimum of two inches beyond the fiberglass cloth.

(3) All repairs shall include installation of fiberglass cloth with a minimum dimension of 12 x 12 inches centered over the area to be repaired. Larger repairs shall require the cloth to be large enough to provide cloth coverage of at least five inches of cloth bonded to the tank wall, measured from the outermost edge of the repair area, to the cloth's edge.

(4) A second layer of fiberglass cloth of the same weight as specified in Paragraph 2 above, shall be installed directly over the primary cloth layer, and shall be cut so to overlap the primary patch by 1.5 inches on all sides.

(5) This repair shall be allowed sufficient cure time, as determined by the resin manufacturer, to provide an acceptable base for tank lining installation.

(j) Steel underground storage tanks that exhibit external corrosion during the course of inspection or repair shall comply with the cathodic protection requirements in Section 2635.

(k) Repaired tanks shall be internally inspected by a coatings expert for conformance with the standards under which it was repaired. Certification of this repair work shall be provided to the local agency by the owner or operator and the party performing the internal inspection.

(l) Repairs to non-steel underground storage tanks shall be properly conducted in accordance with the tank manufacturer's specifications:

(m) Sections of piping and fittings that have released product as a result of corrosion or other damage must be replaced. Soil samples shall be taken in accordance with the requirements in Section 2672(d) of Article 7 of this chapter.

(n) Repaired tanks and piping must be tested for tightness within 30 days following the date of completion of the repair in accordance with the tank manufacturer's specifications. Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate article of this chapter.

(o) Underground storage tank owners and operators must maintain records of repairs for the remaining operating life of the tank that demonstrate compliance with the requirements of this section.

(p) A vapor or ground water monitoring system shall be installed to continuously monitor the repaired underground storage tank for future unauthorized releases, in accordance with Section 2647 or 2648, if no secondary containment system exists.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296
40 CFR 280.33

2662. Underground Storage Tank Upgrade

(a) All underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

(b) Owners of motor vehicle fuel tanks made of steel shall, on or before December 22, 1998, provide both interior lining and exterior cathodic protection by complying with the following upgrade requirements:

(1) Tank owners shall provide interior lining by complying with all requirements set forth in Section 2661 except Paragraph 2661(p) and those pertaining to non-steel tank and piping, and

(2) Cathodic protection shall be designed, installed, and inspected as specified in Section 2635(a)(2). All cathodic protection wells must be constructed in accordance with applicable state and local well regulations.

(3) The upgraded underground storage tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter as follows:

(A) The tank shall be cleaned so that no residue remains on the tank walls.

(B) The tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute.

(C) The inspector shall take interior diameter measurements and visually inspect the lining.

(D) If the liner shows discontinuity, compression or tension cracking or the tank cross-section has compressed more than one percent of the diameter measurement made at the time of lining, the tank shall be replaced or closed in accordance with Articles 3 or 7, respectively.

(E) The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thickness recorded on a form that identifies the location of each reading. If any area shows metal thickness less than 75 percent of the original wall thickness the tank shall be closed in accordance with Article 7.

(4) The upgraded underground storage tank shall be replaced or closed in accordance with Articles 3 or 7 at the end of the tank's operational life.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25296

40 CFR 280.21

2663. Primary Container Monitoring Spill and Overfill Prevention Equipment Upgrade Requirements

(a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the underground storage tank test as described in Section 2643 of Article 4 of this subchapter. The underground storage tank shall also be vacuum tested at a vacuum of 5.3 inches (135 mm) Hg for 1 minute. The vacuum test shall not be required if technology is not available for testing the underground storage tank onsite using accepted engineering practices.

(b) All pipelines shall be pressure tested following repair to assure the adequacy of the repair. The testing shall be accomplished using accepted procedures. Some acceptable procedures for pressure testing are provided in Appendix I of this subchapter.

Authority: H&SC 25299.3

Reference: H&SC 25296

(a) Underground storage tank systems shall have an overfill prevention system and a spill container which meets the requirements specified in Section 2635(c) of this article. The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. This requirement applies to all existing underground storage tanks, regardless of the date of installation, and must be complied with on or before December 22 1998.

(b) Owners or operators must use care to prevent releases due to spilling or overfilling. The owner, operator, or their agent must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292, 25292.1

40 CFR 280.21

2664. Underground Pressurized Piping Upgrade Requirement

(a) All underground pressurized piping containing non-petroleum hazardous substances shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998.

(b) All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other materials compatible with stored products and resistant to corrosion. The secondary containment system shall meet the requirements specified in Section 2635(b). Any retrofitting of such piping which is required shall be completed no later than December 22, 1998.

(c) All underground pressurized piping shall be equipped with automatic line leak detectors no later than December 22, 1990.

(d) All underground pressurized piping and secondary containment shall be tested for tightness after installation and annually in accordance with the requirements specified in Section 2635(b)(4) and (5).

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25292,25292.1

40 CFR 280.21

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Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of Section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased, for 12 consecutive months but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years will again be used for the storage of hazardous substances. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances consistent with permit conditions.

(c) The permanent closure requirements of Section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and where the owner or operator has no intent within the next 2 years to use the underground storage tank the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. even though there is no use being made of the stored substance/ In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to Section 2671 or 2672 of this article, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

CAPITAL "P" ~ CCR p. 1470

(f) At least thirty (30) days prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with Section 2671 or 2672 of this article, as appropriate. The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release///In this situation/ the underground storage tank owner shall submit the required proposal within 14 days of either the discovery of an unauthorized release or the implementation of actions taken to prevent or minimize the effects of the unauthorized release/

(g) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release do not qualify for temporary closure pursuant to Section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made which would ~~allow~~ make the underground storage tank ~~to be~~ capable of storing hazardous substances ~~pursuant to~~ in accordance with the permit issued by the local agency.

(h) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of Section 2672 ~~of this article~~.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to Section 13304 of the Water Code and any other applicable law or regulations.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70, 280.71, 280.73

2671. Temporary Closure Requirements

~~(a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.~~

~~(b)~~

(a) The owner or operator shall comply with all of the following requirements to complete and maintain temporary closure of an underground storage tank:

(1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank~~, either in part or as a whole,~~ shall be inerted, as often as necessary ~~purged of the flammable vapors~~ to levels that ~~would~~ will preclude an explosion or to such lower levels as may be required by the local agency.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and the test results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.

(4) Except for required venting, all fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs.

(5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank ~~except if~~ unless the ~~pump~~ power services some other equipment which is not being closed such as the impressed current cathodic protection system.

~~(c)~~

(b) The monitoring required pursuant to the permit may be modified ~~or eliminated~~ by the local agency during the temporary closure period ~~by the local agency~~. In making a decision to modify such monitoring the local agency shall consider~~/ in making the above decision/~~ the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet ~~reached the monitoring location~~ been detected.

CAPITAL "T" under CCR p14

~~(d)~~

(c) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to ~~assure~~ verify that the temporary closure ~~actions~~ measures are still in place. ~~This~~ Such inspection shall include at least the following actions:

(1) Visual inspection of all locked caps and concrete plugs.

(2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to ~~subsection (b)~~ Paragraph (a)(3) of this section.

(d) The owner may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in Sections 2662, 2663, and 2664.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.70

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either ~~subsection~~ Paragraph (b) of this section for underground storage tank removal or ~~subsection~~ Paragraph (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate ~~subsection~~ paragraph of this section. ~~Subsections~~ Paragraphs (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks ~~proposing to remove the underground storage tank~~ subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code~~/ in addition to the following~~ and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank/ ~~either in part or as a whole/~~ shall be inerted ~~purged of the flammable vapors~~ to levels that ~~would~~ shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.

(4) An owner of an underground storage tank or any part ~~of an underground storage tank~~ thereof that is destined for a specific reuse shall ~~identify~~ to advise the local agency of:

(A) The ~~future~~ name of the new owner of the underground storage tank ~~owner~~;

(B) Name of the new operator;

(C) The location of use; and

(D) Nature of use.

~~(5) An owner of an underground storage tank or any part of an underground storage tank that is destined for reuse as scrap material shall identify this reuse to the local agency/~~

(c) ~~Closure of~~ Owners of underground storage tanks ~~in place~~ subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code/ and with the following requirements:

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X " IN ADDITION TO ALL OF THE FOLLOWING "

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

(3) The underground storage tank, except for ~~the~~ piping that is closed pursuant to ~~subsection~~ Paragraph (2) of this ~~subsection~~, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

~~(6) A notice shall be placed in the deed to the property/// The notice shall describe the exact vertical and areal location of the closed underground storage tank/ the hazardous substances it contained/ and the closure method/~~

2672

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration ~~can~~ shall be based on ~~the ongoing leak detection monitoring, ground water monitoring, or~~ soil sampling analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If ~~feasible~~ the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, ~~the~~ soil samples shall be taken ~~from the soils~~ immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank ~~shall be taken~~ in accordance with Section 2649. A separate sample shall be taken ~~for every 200 square feet for underground storage tanks or every~~ for each 20 lineal-feet of trench for piping ~~at a minimum~~.

(2) If the underground storage tank or any portion thereof is not removed, ~~soils sampling pursuant to Section 2645 of Article 4 of this subchapter shall be implemented if feasible~~ at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank.

If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with Section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this ~~sub~~chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25298

40 CFR 280.71

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Article 8. Categorical and Site-Specific Variance Procedures

2680. General Applicability of this Article

(a) This article sets up procedures for categorical and site-specific variances from the requirements for the construction and monitoring of new and existing underground storage tanks as described in Chapter 6.7 of Division 20 of the Health and Safety Code and Articles 3 and 4 of this ~~subchapter~~. A site-specific variance, if approved, would apply only to the specific site(s) approved for a variance. A categorical variance, if approved, would apply to the region, area, or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific. These procedures are in addition to those established by the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2681 of this article specifies the procedures that must be followed by the applicant and the ~~State~~ Board for categorical variance requests.

(c) Section 2682 of this article specifies the procedures that must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: H&SC 25299.3

Reference: H&SC 25299.4

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2681. Categorical Variances

(a) A categorical variance allows an alternative method of construction or monitoring which ~~is applicable~~ would be applicable at sites in ~~to~~ more than one local agency's jurisdiction. ~~jurisdiction~~ Application for a categorical variance shall be made ~~by the permittee~~ to the ~~State~~ Board on a form provided by the ~~State~~ Board.

(b) Application for a categorical variance shall include, but not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A description of the proposed alternative program, method, device, or process.

(3) A description of the region, area, or circumstances under which the variance would apply.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6) Written comments or recommendations from impacted local agencies.

~~(6)~~

(7) An initial ~~payment~~ fee of $11,000.

(c) The applicant will be required to pay a fee based on the actual costs of considering the application. The State Board will bill the applicant for additional costs or refund any remaining part unused portion of the initial fee/ if necessary.

(d) The State Board, shall review all applications submitted and SHALL notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

[e] THE STATE BOARD SHALL COMPLETE ANY DOCUMENTS NECESSARY TO SATISFY THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (DIVISION 13)/ COMMENCING WITH SECTION 21000/ OF THE PUBLIC RESOURCES CODE].

[f]

(e) The State Board shall remand the application to the appropriate regional board if it determines that the application falls within Section 2682 of this article.

[g]

(f) The State Board shall hold at least 2 public hearings as set forth in Section 25299.4 of the Health and Safety Code. IN DIFFERENT AREAS OF THE STATE WITHIN 180 DAYS OF RECEIPT OF A COMPLETE VARIANCE APPLICATION TO CONSIDER THE REQUEST FOR A CATEGORICAL VARIANCE/

[H] UPON THE CLOSE OF A HEARING/ THE PRESIDING OFFICER MAY KEEP THE HEARING RECORD OPEN FOR A DEFINITE TIME/ NOT TO EXCEED 30 DAYS/ TO ALLOW ANY INTERESTED PERSON TO FILE ADDITIONAL EXHIBITS/ REPORTS/ OR AFFIDAVITS/

[I]

(g) If the State Board grants the variance, it will prescribe the conditions the applicant must maintain and will describe the specific alternative for which the variance is being granted.

[J]

(h) All permit applicants who intend to utilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the local agency concurs in the applicability of the variance applies, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the State Board provided all other permit conditions are met.

[K]

(i) The State Board shall modify or revoke a categorical variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The State Board shall not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and SUBChapters 1.5 and 6 of Division 3 of Title 23 of the California Code of Regulations THIS CHAPTER. The State Board shall notify all affected local agencies of the any modification or revocation. Local agencies shall appropriately modify or revoke all permits which were based on the categorical variance.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

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2682. Site-Specific Variances

(a) A site-specific variance allows an alternative method of construction or monitoring which would be applicable at one or more sites within ~~one~~ a local agency's jurisdiction. Application for a site-specific variance shall be made ~~by the discharger~~ to the appropriate regional board on a form provided by the regional board.

(b) ~~At least 60 days~~ Prior to applying to the Regional Board for a variance, the ~~discharger~~ applicant shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods or if the local agency does not act within 60 days of its receipt of ~~the discharger's~~ a complete construction and monitoring plan from the ~~discharger~~/applicant, then the applicant may ~~proceed with a~~ submit the variance application to the Regional Board.

(c) An application for a site-specific variance shall include, but need not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device, or process shall be clearly identified.

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(3) Any special circumstances on which the applicant ~~would rely~~ relies to justify the findings necessary for the variance, as prescribed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) Any ~~documents necessary to satisfy~~ environmental information or documentation requested by the Regional Board pursuant to the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(6) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

~~(6)~~

(7) A fee of $2,750 for variance requests at one site. A fee of $5,500 for variance requests at more than one site within one local agency's jurisdiction.

(d) The Regional Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

(e) The Regional Board shall hold a hearing on the proposed ~~alternative~~ variance as specified in Section 25299.4(c) of the Health and Safety Code. ~~Within 60 days after receiving a complete variance application. However, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code for local agency to join in the application.~~

(f) Any site-specific variance shall prescribe appropriate additional condit ons and shall describe the specific alternative system for which the variance is being granted. ~~The Regional Board shall notify the applicant, and the local~~ agency, and the Board of its decision.

~~(g) The regional board shall consider the local agency's recommendations in rendering its decision.// The regional board shall consider the completeness and accuracy of the information provided by the applicant in subsection (e) of this section in rendering its decision.~~

(h) If the variance ~~request~~ is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the Regional Board. A local agency shall not modify the permit unless it determines that the modification is consistent with the variance that has been granted.

(i) The Regional Board shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The Regional Board shall not modify nor revoke the variance until it has followed procedures comparable to those prescribed in this section and ~~sub~~Chapters 1.5 and 6 of Division 3 ~~this chapter~~ of Title 23 of the California Code of Regulations. The Regional Board shall notify the local agency and the Board of the modification or revocation. The local agency shall modify or revoke the permit for the site.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

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Article 9. Local Agency Additional Standards Request Procedures

2690. Applicability

This article sets up procedures for local agencies to request ~~State~~ Board authorization for ~~more stringent~~ design and construction standards other than those set by Article 3 of this ~~sub~~chapter. These procedures are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.2, 25299.4

2691. Additional Standards Request Procedures

(a) A local agency application for additional design and construction standards shall include:

(1) A description of the proposed design and construction standards which are in addition to those described in Article 3 of this ~~sub~~chapter.

(2) ~~Clear and convincing evidence that the additional standards are necessary.~~ Clear and convincing evidence that the additional standards are necessary to ~~would adequately~~ protect the soil and beneficial uses of the waters of the state from unauthorized releases.

(3) Any documents required by the California Environmental Quality Act (Division 13, commencing with Section 21000 of the Public Resources Code).

(4) An initial fee of $5,500.

(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any ~~remaining part~~ unused portion of the initial fee, ~~if necessary~~ as appropriate.

(c) The Board shall conduct an investigation and public hearing on the proposed standards and ~~their~~ the need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards.

(d) The Board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The Board shall not modify nor revoke the authorization until it has followed procedures comparable to those presented in ~~sub~~Chapters 1.5 and 6 of ~~this chapter~~ Division 3 of Title 23 of the California Code of Regulation.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25299.4

Article 10. Permit Application, ~~Annual~~ Quarterly Report and Trade Secret Requirements

2710. General Applicability of Article

(a) This article describes specific administrative actions that must be ~~accomplished~~ undertaken by all underground storage tank owners, local agencies, and the ~~State~~ Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2711 of this article lists the information that must be submitted by the underground storage tank owner to the local agency as part of the permit application.

(c) Section 2712 of this article describes the conditions associated with a permit for the operation of an underground storage tank ~~that local agencies must include in all permits issued~~ and the conditions which local agencies must meet prior to permit issuance.

(d) Section 2713 of this article describes the ~~annual~~ quarterly report requirements for local agencies for unauthorized releases.

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(e) Section 2714 of this article specifies conditions that must be met by an underground storage tank owner when requesting trade secret ~~provisions~~ protection for any information submitted to the local agency, ~~State~~ Board, or Regional Board. It also specifies how the local agency, the ~~State~~ Board, or Regional Board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284, 25285, 25286, 25288, 25289, 25290, 25293

2711. Permit Application and Information

(a) The permit application shall include, but not be limited to, the following information ~~if it is available~~ to the extent such information is known to the permit applicant:

(1) The name and address of the person who owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number where the underground storage tank is located, and type of business, if any, involved.

(3) The name, address, and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.

(4) The name and telephone number of the person making the application, if other than the owner.

(5) A description of the underground storage tank including, but not limited to, the underground storage tank and auxiliary equipment manufacturer, year date of manufacture/ installation and tank capacity/ History of repairs/ and operation methods schedule/

[6] In the case of new underground storage tanks installed with systems for secondary containment utilizing membrane liners/ a certification by the membrane liner material manufacturer that the membrane liner meets the standards set forth in Subsection 2631[c] and [3][1] and [2] of Article 3 of this subchapter/ or/ if applicable/ Subsection 2631[c][1] and [2] of Article 3 of this subchapter/ and a certification by the membrane liner fabricator that the membrane liner meets the standards set/forth in Subsection 2631[c] and [3][3] of Article 3 of this subchapter/

[7]

(6) Construction details of the underground storage tank and any auxiliary equipment including, but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures/ backfill/ spill and overfill prevention equipment, interior lining, wrapping/ and cathodic corrosion protection methods (if applicable).

(7) A description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection.

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(8) As an addendum to the permit application form, provide a scaled diagram or design or as-built drawing which indicates the location of the underground storage tank (underground storage tank, piping, auxiliary equipment) with respect to buildings or other landmarks.

(9) The description of the proposed monitoring program including, but not limited to, the following where applicable:

(A) Visual/inspection procedures;

(B) Underground storage tank testing release detection methods or inspection procedures;

(C) Inventory reconciliation including gauging and reconciliation methods;

(D) Spill sampling locations and methods and analysis procedures Pipeline leak detection methods;

(E) Vadose zone sampling locations and methods and analysis procedures;

(F) Ground water well(s) locations construction and completion development methods, sampling, and analysis procedures; and

[G] Frequency and sensitivity of any monitoring method sensing instrument or analytical method/

~~(b)~~

(a) As a condition of any permit to operate an underground storage tank, the ~~permittee~~ owner or operator shall ~~report to the local agency any~~ comply with the reporting and recording requirements for unauthorized releases ~~(hereinafter as defined in Article 2 of this subchapter) within the time frame~~ specified in ~~Subsections 2652 (b) and (c) of~~ Article 5 of this ~~s~~ubchapter.

~~(c)~~

(b) Written records of all monitoring and maintenance performed shall be maintained on-site or off-site at a readily available location, ~~by the operator~~ if approved by the local agency, for a period of at least 3 years ~~from the date the monitoring was performed~~. These records must be made available, upon request within 36 hours, to the local agency or the Board. ~~The local agency may require the submittal of the monitoring records or a summary at a frequency that they may establish. The written records of all monitoring performed in the past 3 years shall be shown to the local agency, regional Board, State Board, or duly authorized representative upon demand during any site inspection.~~ Monitoring records shall include:

(1) The date and time of all monitoring or sampling;

(2) Monitoring equipment calibration and maintenance records;

(3) The results of any visual observations;

(4) The results of all sample analysis performed in the laboratory or in the field, including laboratory data sheets and analysis used;

(5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and

(6) The results of inventory readings and reconciliations.

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~~(d)~~

(c) A permit to operate issued by the local agency shall be effective for 5 years. The permit shall show the state underground storage tank identification number(s) for which the permit was issued. Before a local agency ~~shall not~~ issues a new permit or renewal to operate an underground storage tank ~~until~~ the local agency shall inspect the underground storage tank and determines that the underground storage tank complies with the provisions of these regulations. ~~The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.~~

~~(e) The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks.~~

~~(f)~~

(d) Permits may be transferred to new underground storage tank owners if: (1) the new underground storage tank owner does not change any conditions of the permit, (2) the transfer is registered with the local agency within 30 days of the change in ownership, and (3) ~~any necessary modifications are made to the information in the initial permit application due to the change in ownership.~~ State permit application forms are completed to show the changes. Transferred permits shall expire and be renewed on the original expiration date. A local agency may review, modify, or terminate the permit to operate the underground storage tank upon receiving ~~the~~ an ownership transfer request.

(10) A list of all the substances which previously, currently, or are proposed to be stored in the underground storage tank or tanks.

(11) Documentation to show compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

~~(11)~~

(12) If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the underground storage tank.

~~(12)~~

(13) The permit application must be signed by:

(A) The owner of the underground storage tank or a duly authorized representative of such owner;

(B) If the tank is owned by a corporation, partnership, or public agency, the application must be signed by:

(i) A principal executive officer at the level of vice-president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the underground storage tank(s) are located;

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(ii) A general partner proprietor; or

(iii) A principal executive officer, ranking elected official, or authorized representative of a public agency.

(b) The owner or operator must inform the local agency of any changes to the information provided in paragraph (a) of this section within 30 days unless required to obtain approval before making the change.

~~(b)~~

(c) The permit application form provided by the Board shall be used and shall be accompanied by the local government and state surcharge fees ~~set by the local agency~~.

(d) The local agency shall provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286, 25287

2712. Permit Conditions

~~(a) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within 30 days after any changes in the usage of any underground storage tank, including:~~

~~(1) The storage of new hazardous substances;~~

~~(2) Changes in monitoring procedures; or~~

~~(3) The replacement or repair of all or part of any underground storage tank;~~

[d]

(e) The local agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected by the local agency or a special inspector within the prior 3 years and the inspection revealed indicated that the underground storage tank complied with Article 3 or 4 of this subchapter, as applicable, and with all existing permit conditions. The inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code. If the inspection revealed indicated noncompliance then the local agency must verify by a follow-up inspection that all required corrections have been implemented before renewing the permit.

[H]

(f) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall implement the corrections specified in the inspection report file with the local agency a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring plan needed to achieve compliance and comply with either Article 3 or Article 4 of this subchapter, as appropriate, of and the permit conditions. This plan and time schedule The corrective action shall also implement include all of the recommendations of made by the local agency or special inspector. The local agency may exempt waive the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the failure to implement the recommendation will not cause an unauthorized release.

(g) The local agency shall take appropriate enforcement action pursuant to Section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring

requirements specified in Article 3 or 4 of this chapter or the reporting requirements specified in Article 5 of this chapter.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25284, 25285, 25286, 25288, 25289, 25293, 25294
40 CFR 280

2713. Annual Transmittal of Unauthorized Release Reports

(a) The local agency shall notify the State Board of any changes in permits as defined in Subsections [a] or [f] of Section 2712 of this Article or any unauthorized releases as defined in Article 1 of this subchapter annually on the State Board's annual report form or other methods determined by the State Board.///This information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.

Each local agency shall transmit unauthorized release information, submitted by the owner or operator pursuant to Article 5 of this chapter to the appropriate Regional Board.

(b) Local agencies shall transmit unauthorized release update report information, submitted by the owner or operator pursuant to Section 2712 of this Article, to the appropriate Regional Board for sites where they are overseeing cleanup. Local agencies shall transmit this unauthorized release update information on a quarterly schedule established by the Board.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25286.

2714. Trade Secret Provisions

(a) Any person providing information in an application for a permit to operate an underground storage tank or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:

(1) Which portions of the information submitted are believed to be trade secrets;

(2) How long this information should be treated as confidential;

(3) Measures that have been taken to protect this information as confidential; and

(4) A discussion of why this information is ~~a~~ subject to trade secret/ protection, including references to statutory and case law as appropriate.

(b) If the local agency, the ~~State~~ Board, or the regional board determines that a request for ~~confidentiality~~ trade secret protection is clearly valid, the material shall be given trade secret protection as discussed in ~~subsection~~ Paragraph (f) of this section.

(c) If the local agency, the ~~State~~ Board, or the regional board determines that the request for ~~confidentiality~~ trade secret protection is clearly frivolous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency, the ~~State~~ Board, or the regional board is instructed otherwise by a court within 10 working days of the date of the letter.

(d) If the validity of the request for ~~confidentiality~~ trade secret protection is unclear, the local agency, the ~~State~~ Board, or the regional board will inform the person claiming trade secrecy that the burden is on him to justify the claim. ~~The applicant will be given a fixed period of time to submit such~~ additional information as the local agency, the ~~State~~ Board, or the regional board may request. The local agency, the ~~State~~ Board, or the regional board shall then evaluate the request on the basis of the definition of "trade secrets" contained in the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code and issue its decision. If the local agency, the ~~State~~ Board, or the regional board determines that the information is not a trade secret, it shall act in accordance with ~~subsection~~ Paragraph (c) of this section.

(e) All information received for which trade secrecy status is requested shall be treated as confidential as discussed in ~~subsection~~ Paragraph (f) of this section until a final determination is made.

(f) Information which has been found to be confidential or ~~regarding which a final determination has not been made~~ which is being reviewed to determine if confidentiality should exist, shall be immediately filed in a separate "confidential" file. If a document or portion of a document is filed in a confidential file, a notation should be filed with the ~~remainder of the~~ file document indicating that further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized representatives of the applicant or other governmental agencies ~~only~~ in connection with the ~~State~~ Board's, the regional board's, or the local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code or Division 7 of the Water Code.

(h) Nothing contained herein shall limit an applicant's right to prevent disclosure of information pursuant to other provisions of law.

Authority: H&SC 25299.3, 25299.7

Reference: H&SC 25290

APPENDIX

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APPENDIX I, TABLE A

SUGGESTED SPECIFICATIONS

APPLICABLE TO REGULATORY REQUIREMENTS

SECTION NUMBER		TITLE
MISSING 2631(j)(1)	ASTM D 8-14	TITLE
	ASTM D-543	TITLE
2631(d)(6)	ASTM D-751,	"Coated Fabrics"
	ASTM D-1004	"Initial Tear Resistance of Plastic Film and Sheeting"
2631(j)(2)(C) 2631(j)(2)(D) → MISSING	ASTM D-2240 ASTM D-2684	
2631(d)(6)	ASTM D-413	"Rubber Property - Adhesion to Flexible Substrate"
	ASTM D-471	Rubber Property - Effect of Liquids"
	ASTM D-638	"Tensile Properties of Plastics"
	ASTM E-96	"Water Vapor Transmission of Materials"

Please refer to pp. 1-45-150 & CR

2635(b)(1)	- ASME,	"ASME Pressure Vessel Code, Section VIII, Division 1, Boiler and Pressure Vessel Code"
	UL-58,	"Steel Underground Tanks for Flammable and Combustible Liquids"
	UL-1316,	"Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products"
	UL-1746,	"External Corrosion Protection Systems for Steel Underground Storage Tanks"
	UL-3615-1977,	"Standard for Reinforced Plastic Underground Storage Tanks for Petroleum Products"
2635(b)(2)	ASTM G-1-72,	"Standard Recommended Practice for Preparing, Cleaning, and Evaluating Test Specimens"
	ASTM G-31-72,	"Standard Recommended Practice for Laboratory Immersion Corrosion Testing of Metals"

Underline

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ICCR

	ULC CAN4-5603-M85	"Standard for Steel Underground Tanks for Flammable and Combustible Liquids"
	ULC CAN4-5603-1M85	"Standard for Galvanic Corrosion Protection Systems for Steel Underground Storage Tanks for Flammable and Combustible Liquids"
	ASTM D-4021-86	"Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks"
	NACE TM-10-69	"Laboratory Corrosion Testing of Metals for the Processing Industry"
	NACE TM-02-70	"Method for Conducting Laboratory Controlled Velocity Laboratory Corrosion Tests"
2661	API 1631	"Interior Lining of Underground Storage Tanks"
2663(b)	NFPA 329-1987	"Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquid"

APPENDIX I, TABLE B

ORGANIZATIONS THAT ADOPT VOLUNTARY CONSENSUS STANDARDS

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018
(212) 354-8300

API American Petroleum Institute
1220 L Street, N.W.
Washington, D.C. 20005
(202) 682-8000

ASME The American Society of Mechanical Engineers
1916 Race Street
Philadelphia, PA 10017
(215) 299-5400

ASTM American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103
(215) 299-5400

NACE National Association of Corrosion Engineers
1440 South Creek Drive
Katy, TX 77450
(713) 492-0535

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269
(617) 328-9290

NSF National Sanitation Foundation
3475 Plymouth Road
Post Office Box 1468
Ann Arbor, MI 48106
(313) 769-8010

NOT IN CCR
UNDERLINE TO ADD

UL Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

ULC Underwriters Laboratories of Canada, Inc.
7 Crouse Road
Scarborough, Ontario

P.149 CCR

STI STEEL TANK INSTITUTE
666 DUNDEE ROAD, SUITE 705
NORTHBROOK IL 60062
(312) 498-1980

"Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule", EPA Fed. Reg. Vol. 49, No. 209, October 26, 1984.

"Manual of Methods for the Chemical Analysis of Water and Wastes", EPA 600/4-79-020, March 1979.

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities", EPA 530/SW-611, August 1977.

"Soil Sampling Quality Assurance User's Guide", EPA 600/4-84-043, May 1984.

"Hazardous Waste Land Treatment", EPA SW-874, April 1983.

"Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", EPA 600/4-82-057, July 1982.

"Handbook for Sampling and Sample Preservation of Water and Wastewater", EPA 600/4-82-029, September 1982.

"Manual of Analytical Quality Control for Pesticides and Related Compounds in Human and Environmental Samples", EPA 600/2-81-059, April 1981.

"EPA Test Methods for Evaluating Solid Waste - Physical/Chemical Method", SW-846

"Manual of Analytical Methods for the Analysis of Pesticides in Human and Environmental Samples", EPA 600/8-80-038.

"Standard Methods for the Examination of Water and Wastewater", American Public Health Assoc., American Water Works Assoc., Water Pollution Control Federation, 15th Edition, 1981.

"Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency", Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater, 1981.

"Guidelines on Sampling and Statistical Methodologies for Ambient Pesticide Monitoring", Federal Working Group on Pest Management, October 1974.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Part 31, Water", 1982.

"Methods for Determination of Inorganic Substances in Water and Fluvial Sediments of the U.S. Geological Survey"

"Methods for Analysis of Organic Substances in Water", U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A3, 1972.

"Criteria for Identification of Hazardous and Extremely Hazardous Wastes", Article 11, Chapter 30, Division 4, Title 22.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Parts 23-25, Petroleum Products and Lubricants, 1981".

"Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)"

APPENDIX II.

SUCTION PIPING MONITORING

Suction pipelines shall be monitored for the presence of air in the pipeline by observing the suction pumping system for the following indicators:

(1) The cost/quantity display wheels on the meter suction pump skip or jump during operation;

(2) The suction pump is operating, but no motor vehicle fuel is being pumped;

(3) The suction pump seems to overspeed when first turned on and then slows down as it begins to pump liquid; and

(4) A rattling sound in the suction pump and erratic flow indicating an air and liquid mixture.

If any of the above indicators are observed during testing of the suction piping system, the pipeline check valve should be inspected to determine if it is seated tightly. If there is any doubt following the inspection that the valve seats tightly, it should be repaired, replaced, or sealed off. Then the suction pumping test should be repeated and, if air is still entering the suction line, it is assumed that the pipe is leaking underground.

Appendix III.

Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in Section 25292(b)(5) of Chapter 6.7 of Division 20 of the *Health and Safety Code (see below)*. This section refers to Section 2641(c)(7) of the California Code of Regulations as it existed on August 13, 1985 as follows:

2641(c)(7) Underground Storage Tank Gauging and Testing:

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + or - 5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

(B) The underground storage tank gauging shall be performed according to the following specifications:

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals.

(ii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred. The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

SUGGESTION SET OFF CAPTION → move CAPTION here

H&SC 25292(b)

(5) For monitoring underground storage tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:

(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985.

(B) If the tank has a capacity of more than 5,000 gallons, the tank shall be monitored pursuant to the methods for all other tanks specified in this subdivison.

APPENDIX IV

Examples of

Quantitative Release Detection Methods for Tanks

Detection Method	Performance Standards
Automatic Tank Gauging (Monthly)	Subsection 2643 (c)(1)
Tank Integrity Test (Annually) and Inventory Reconciliation (Monthly)	Subsection 2643 (c)(2)(A) and Subsection 2643 (c)(2)(B)
Manual Tank Gauging (Weekly)	Section 2645

Examples of

Quantitative Release Detection Methods for Pressure Piping

Detection Method	Performance Standards
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Monthly)	Subsection 2643 (d)(1) and Subsection 2643 (d)(2)
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Automatic Line Leak Detector (Hourly) and Line Tightness Test (Annually)	Subsection 2643 (d)(1) and Subsection 2643 (d)(3)
Electronic Line Leak Detector (Hourly)	Subsection 2643(d)(3)

Examples of

Quantitative Release Detection Methods for Suction Piping

Line Tightness Test (Triannually)	Section 2643 (e)
and	
Daily Monitoring	Appendix II

Examples of

Qualitative Release Detection Methods

Vapor Monitoring	Section 2644 (b) and 2647
or	
Ground Water Monitoring	Sections 2644 (c) and 2648

APPENDIX V

EVALUATION PROCEDURE FOR LEAK DETECTION EQUIPMENT

Leak detection equipment can be evaluated for performance in accordance with one of the following three evaluation procedures:

1. EPA Standard Test Procedures

EPA has developed a series of standard test procedures that cover most of the methods commonly used for underground storage tank leak detection. These include:

a. "Standard Test Procedures for Evaluating Leak Detection Methods: Volumetric Tank Tightness Testing Methods"

b. "Standard Test Procedures for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods"

c. "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems"

d. "Standard Test Procedures for Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods"

e. "Standard Test Procedures for Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors"

f. "Standard Test Procedures for Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors"

g. "Standard Test Procedures for Evaluating Leak Detection Methods: Pipeline Leak Detection Systems"

Each test procedure provides an explanation of how to conduct the test, how to perform the required calculations, and how to report the results. The results from each standard test procedure provide the information needed by tank owners and operators to determine if the method meets the regulatory requirements.

EPA standard test procedures must be conducted by an independent third party under contract to the manufacturer in order to prove compliance with the regulations. Independent third-parties may include consulting firms, test laboratories, not-for-profit research organizations, or educational institutions with no organizational conflict of interest. In general, evaluations are more likely to be fair and objective the greater the independence of the evaluating organization.

2. National Consensus Code or Standard

A second way for a manufacturer to prove the performance of leak detection equipment is to have an independent third party evaluate the system following a national voluntary consensus code or standard developed by a nationally recognized association (e.g., ASTM, ASME, ANSI, etc.). Throughout the technical regulations for underground storage tanks, EPA has relied on national voluntary consensus codes to help tank owners decide which brands of equipment are acceptable. Although no such code presently exists for evaluating leak detection equipment, one is under consideration by the ASTM D-34 subcommittee. Guidelines for developing these standards may be found in the U.S. Department of Commerce "Procedures for the Development of Voluntary Product Standards" (FR, Vol. 51, No. 118, June 20, 1986) and OMB Circular No. A-119.

3. Alternative Test Procedures Deemed Equivalent to EPA's

In some cases, a specific leak detection method may not be adequately covered by EPA standard test procedures or a national voluntary consensus code, or the manufacturer may have access to data that makes it easier to evaluate the system another way. Manufacturers who wish to have their equipment tested according to a different plan (or who have already done so) must have that plan developed or reviewed by a nationally recognized association or independent third-party testing laboratory (e.g. Factory Mutual, National Sanitation Foundation, Underwriters Laboratory, etc.). The results should include an accreditation by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as the EPA standard test procedure. In general, this will require the following:

a. The evaluation tests the system both under the no-leak condition and an induced-leak condition with an induced leak rate as close as possible to (or smaller than) the performance standard. In the case of tank testing, this will mean testing under both 0.0 gallon per hour and 0.10 gallon per hour leak rates. In the case of ground water monitoring, this will mean testing with 0.0 and 0.125 inch of free product.

b. The evaluation should test the system under at least as many different environmental conditions as the corresponding EPA test procedure.

c. The conditions under which the system is evaluated should be at least as rigorous as the conditions specified in the corresponding EPA test procedure. For example, in the case of volumetric tank tightness testing, the test should include a temperature difference between the delivered product and that already present in the tank, as well as the deformation caused by filling the tank prior to testing.

d. The evaluation results must contain the same information and should be reported following the same general format as the EPA standard results sheet.

e. The evaluation of the leak detection method must include physical testing of a full-sized version of the leak detection equipment, and a full disclosure must be made of the experimental conditions under which: (1) the evaluation was performed, and (2) the method was recommended for use. An evaluation based solely on theory or calculation is not sufficient.

APPENDIX VI

UNDERLINE

CERTIFICATE OF TANK AND PIPE INSTALLATIONS

The owner or operator can use the form below to certify that the UST and piping were installed properly.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
UNDERGROUND STORAGE TANK INSTALLATION
CERTIFICATION OF COMPLIANCE

FORM C

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM

I. SITE LOCATION

STREET _____

CITY _____ COUNTY _____

II. INSTALLATION (mark all that apply):

- ☐ The installer has been certified by the tank and piping manufactures.
- ☐ The installation has been inspected and certified by a registered professional engineer.
- ☐ The installation has been inspected and approved by the implementing agency.
- ☐ All work listed on the manufacturer's installation checklist has been completed.
- ☐ The installation Contractor has been certified or licensed by the Contractors State License Board.
- ☐ Another method was used as allowed by the implementing agency. (Please specify.)

_____

III. OATH I certify that the information provided is true to the best of my belief and knowledge.

Tank Owner/Agent _____ Date _____

Print Name _____ Phone ( ) _____

Address _____

LOCAL AGENCY USE ONLY

STATE TANK I.D. #	COUNTY #	JURISDICTION #	FACILITY #	TANK #

FORM C (3/91) THIS FORM MUST BE ACCOMPANIED BY PERMIT APPLICATION FORMS A & B UNLESS THEY HAVE BEEN FILED PREVIOUSLY FORM/SCA

b. Proof of Service to SWRCB by OAL on June 21, 1991

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

PROOF OF SERVICE BY MAIL

Name/Title Mr. Walt Pettit, Executive Director

Agency STATE WATER RESOURCES CONTROL BOARD

Address P.O. Box 100

City/State Sacramento, CA 95812-0100

File Number 91-0605-01E

Document/Title Disapproval Decision/Annotated Regulations/Letter

I served the above described notice for the Office of Administrative Law by depositing a copy(ies) thereof (enclosed in sealed envelope(s), postage prepaid) in the United States mail, addressed to the above named individual(s) herein, on 6/21/91 , at Sacramento, California.

At the time of service, I was at least 18 years of age, a United States citizen employed in the county where the mailing occurred, and not otherwise involved in the decision. My business address is:

Office of Administrative Law
555 Capitol Mall
Suite 1290
Sacramento, Ca 95814

I declare under penalty of perjury that the foregoing is true and correct and this declaration was executed on 6/21/91 , at Sacramento, California.

Mary Hunter

(Signature of declarant)

LAH20:DECL

c. Letter to Walt Pettit, SWRCB from OAL re: errors in submitted regulations

STATE OF CALIFORNIA

PETE WILSON, *Governor*

OFFICE OF ADMINISTRATIVE LAW
555 CAPITOL MALL, SUITE 1290
SACRAMENTO, CA 95814
(916) 323-6225

June 21, 1991

Mr. Walt Pettit
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Mr. Pettit:

In reviewing your recent emergency regulatory action dealing with underground storage tanks (OAL File No. 91-0605-01E) an annotated set of regulations were returned to your agency as part of the disapproval decision.

Among the errors indicated in the annotated regulations are the following errors in the Barclay's California Code of Regulations which do not match the text filed August 13, 1985 at the Secretary of State's Office. They are:

1) In section 2620, subsection (c) the order of sentences is not accurate. The submitted emergency regulations are in the correct order. In order to have it corrected in the CCR please strike out all of subsection (c) that is in the wrong order and underline all of the proposed subsection (c).

2) In Table 3.2 the word "Indicator" should not be included in the phrase "Type of Substance Stored."

3) In Appendix I, Table A the letters "HL" should be deleted from the listing of "ASTM G-31-72, Standard Recommended Practice HL for laboratory Immersion Corrosion Testing of Metals."

4) In Appendix I, Table A "ASTM D-4021-86" should be "ASTM D-4021-81." If you wish to update this to 86, the number 81 should be stricken out and 86 underlined. If you wish to retain the 81 then the number 86 should be stricken out and 81 underlined.

5) In Appendix I, Table B the addresses or phone numbers for ANSI, API, ASME and NACE need correction.

Please place a copy of this letter in your resubmittal of the emergency regulations. It would expedite OAL review and, if the regulations are approved on resubmittal, would also expedite having an accurate and complete set of regulations printed if the corrections are also incorporated into the resubmitted text.

Sincerely,

Barbara Eckard

Barbara Eckard
Staff Counsel

for: JOHN D. SMITH
Deputy Director

cc: David Holtry

CALIFORNIA OFFICE OF ADMINISTRATIVE LAW
SACRAMENTO, CALIFORNIA

In re: AGENCY: STATE WATER RESOURCES CONTROL BOARD REGULATORY ACTION: Amend sections 2610-2714 (non-inclusive) and Appendix I, Tables A, B and C; Repeal sections 2640-2663 (non-inclusive); and Adopt sections 2640-2664 (non-inclusive) and Appendixes II-VI of Titles 23 & 26 of the California Code of Regulations	DECISION OF DISAPPROVAL OF REGULATORY ACTION (Gov. Code, sec. 11349.6) OAL File No. 91-0605-01 E

SUMMARY OF REGULATORY ACTION

On June 5, 1991 the State Water Resources Control Board (Board) submitted the above referenced emergency regulatory action to the Office of Administrative Law (OAL). The proposed emergency regulations deal with underground storage tanks.

OFFICE OF ADMINISTRATIVE LAW DECISION

On June 17, 1991, OAL disapproved the above-referenced emergency regulatory action because it did not comply with the "Necessity", "Clarity" and "Consistency" standards contained in Government Code section 11349.1 and failed to comply with the procedural requirements of the Administrative Procedure Act (APA).

ISSUES PRESENTED

A. DOES THE REGULATORY ACTION COMPLY WITH THE "NECESSITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(1)?

B. DOES THE REGULATORY ACTION COMPLY WITH THE "CLARITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(3)?

C. DOES THE REGULATORY ACTION COMPLY WITH THE "CONSISTENCY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(4)?

D. DOES THE REGULATORY ACTION COMPLY WITH THE PROCEDURAL REQUIREMENTS OF THE ADMINISTRATIVE PROCEDURE ACT?

DISCUSSION

NOTE: Because of the complexity and length of the emergency regulatory action, all issues are arranged sequentially rather than in order of importance. All references to section numbers refer to the proposed emergency regulations unless otherwise indicated.

A. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "NECESSITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(1).

Government Code section 11349.1, subdivision (a)(1) requires that OAL review all regulations for compliance with the "Necessity" standard. Government Code section 11349, subdivision (a) defines "Necessity" to mean that "....the record of the rulemaking proceeding demonstrates by substantial evidence the need for a regulation. For purposes of this standard, evidence includes, but is not limited to facts, studies, and expert opinion." In order to demonstrate by "substantial evidence" the need for a regulatory provision, two elements must be present in the rulemaking record. The problem, administrative requirement, or other condition or circumstance which each provision is intended to address must be identified. In addition, information must be present which explains why each regulatory provision is needed to carry out the described purpose of the regulatory provision. When the explanation is based on policies, conclusions, speculation, or conjecture, the rulemaking record must include supporting facts, studies, expert opinion, or other information. (Cal. Code Regs., tit. 1, sec. 10).

1. No necessity was provided for the incorporation by reference of the following test methods: ASTM 638, ASTM E96, ASTM D413, ASTM D471, FTMS 101 (Method 2065),

ASTM D104 (DIEC), ASTM D751 (Procedure B, Cut Strip Method) and FTMS 101B (Method 2031) which are listed in Table 3.1 of Section 2631; and the Department of Water Resources "Standards for Well Standards" which is in section 2649, subsection (d)(7). (See related Issue D4.)

B. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "CLARITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(3).

Government Code section 11349.1, subdivision (a)(3) requires that OAL review all regulations for compliance with the "Clarity" standard. Government Code section 11349, subdivision (c) defines "Clarity" to mean "...written or displayed so that the meaning of the regulations will be understood by those persons directly affected by them."

Section 16 of Title 1 of the California Code of Regulations (CCR) declares in relevant part that:

"In examining a regulation for compliance with the 'clarity' requirement of Government Code Section 11349.1, the Office of Administrative Law shall apply the following standards and presumptions:

(a) A regulation shall be presumed not to comply with the 'clarity' standard if any of the following conditions exists:

(1) the regulation can, on its face, be reasonably and logically interpreted to have more than one meaning and the varying interpretations cannot be harmonized by settled rules of construction; or

(2) the language of the regulation conflicts with the agency's description of the effect of the regulation; or

(3) the regulation uses terms which do not have meanings generally familiar to those 'directly affected' by the regulation, and those terms are defined neither in the regulation nor in the governing statute; or

(4) the regulation uses language incorrectly. This includes, but is not limited to, incorrect spelling, grammar or punctuation; or

(5) the regulation presents information in a format that is not readily understandable by persons 'directly affected'; or

(6) the regulation does not use citation styles which clearly identify published material cited in the regulation.

(b) Persons shall be presumed to be 'directly affected' if they:

(1) are legally required to comply with the regulation; or

(2) are legally required to enforce the regulation; or

(3) derive from the enforcement of the regulation a benefit that is not common to the public in general; or

(4) incur from the enforcement of the regulation a detriment that is not common to the public in general."

1. The existing internal text citations to the CCR properly refer to "subsections". The proposed text amends "subsection" to "paragraph" which is not consistent with the CCR hierarchy.

2. Section 2610, subsection (a) provides in relevant part that "Unless the context clearly requires otherwise, the terms used in this chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by Section 2611 of this Article." (Emphasis added.) Existing section 2611 contains exemptions affecting the definition of underground storage tanks and is proposed to be renumbered as section 2621. Proposed renumbered section 2611 contains definitions. Clarification is needed from the Board as to whether it is their intent that section 2610 should refer to only the definitions in proposed renumbered section 2611 or to the definitions in proposed renumbered sections 2611 and 2621.

3. Table 3.1 in section 2631 incorporates by reference (see related Issue D4) the following test methods for unsupported liners: ASTM 638, ASTM E96, ASTM D413, ASTM D471, FTMS101 (Method 2065) and ASTM D1004 (DIEC).

O

Table 3.1 incorporates by reference the following test methods for supported liners: ASTM D751 (Procedure B, Cut Strip Method), ASTM E96, ASTM D751, ASTM D471, FTMS 101B (Method 2031) and ASTM D751. These documents are listed in Appendix I, Table A by number and title. In order to verify that these documents are accurately cited in both the regulation text and Table A they must be included with the emergency regulatory action. Additionally the regulation text must indicate the date so that the directly affected public will know which version of each test method is required. If the test methods are not dated, please indicate that when resubmitting the regulations. (See related Issue D4.)

4. Section 2632, subsection (e)(2) imposes a time deadline of ". . . but not more than 30 days" It is not clear if this is 30 calendar days or working days. Only in section 2714 does the regulatory text refer to a time deadline of "working days". The deadlines in the following sections also use "days" without specifying "working" or "calendar" days: 2635, 2643, 2645, 2649, 2652, 2655, and 2714.

5. Section 2635 has subsections (a), (b), (d) and (e) clearly identified but subsection (c) is not indicated. It appears from the regulatory scheme that subsection (c) immediately follows subsection (b)(7)(D).

6. Existing Table 4.1, which is currently part of existing section 2641 is not shown as being either deleted or retained. Clarification is needed for the Board as to its intent regarding Table 4.1. Please note section 2645 includes a Table 4.1 dealing with a different subject. If the Board retains existing Table 4.1 then proposed Table 4.1 in section 2645 must be renumbered.

7. In section 2641, subsection (g)(9) "homogeneity" is misspelled.

8. Section 2646, subsection (k)(4) requires the owner or operator of an underground storage tank to have all dispenser meters associated with hazardous substance withdrawal checked for calibration ". . . within 24 hours of completing the procedure required in Paragraph (sic) (4) immediately above." (Emphasis added.) There is no subsection (4) immediately above since this subsection is subsection (k)(4) as a result of renumbering. It is not clear if it is subsection (k)(3) or subsection (h)(4) which specifies the intended required procedure. The emergency regulations

contained extensive renumbering of existing sections. Over one hundred internal text citations were changed. It is very impressive that there was only this one error among the multitude of internal text citations.

9. Section 2647, subsection (c) prescribes that "Vadose zone vapor monitoring shall be conducted either daily or continuously." It is not clear who determines whether monitoring is done daily or continuously. Is it the owner, or the local agency or the Board that makes the determination?

10. Section 2647, subsection (e)(7) requires that "All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in Sections 2649 (b)(c)(e) and (f) of this article." Clarification is needed from the Board if the absence of a reference to section 2649, subsection (d) is intentional.

11. Section 2649, subsection (d)(7) incorporates by reference the Department of Water Resources "Standards for Well Construction". The regulation text does not include a date for the standards, where the "Standards" are located in the CCR or whether the Board intends to incorporate all or only part of the "Standards". A copy of the "Standards" must be included with the emergency regulatory action unless they are already in existing regulations. (See related Issues B3 and D4.)

12. Section 2652, subsection (b) requires owners or operators in specified circumstances to comply with the following requirements:

> "(b) Within 24 hours after an unauthorized release or condition has been detected, or should have been detected, the owner or operator shall notify the local agency by submitting a leak report form and shall investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board." (Emphasis added.)

(a) The reference to the leak report form violates the "Clarity" standard. OAL's principal function is to review proposed administrative regulations. Before OAL can confirm that regulations submitted for review meet

all applicable legal requirements it must be able to ascertain the full extent of the proposed regulations. Material set forth in forms may, or may not, have regulatory effect. When regulations require the use of forms, OAL must be able to read the forms to see whether the forms contain any regulations which are subject to its review. Even when required forms have no regulatory effect OAL insists on specific identification of the forms in order to preserve the authenticity of its approval of regulations which require their use. OAL is responsible for the review of regulations adopted by state agencies and their official compilation and publication. See 1987 OAL Determination Number 16 (Board of Behavioral Science Examiners, December 4, 1987, Docket No. 87-005), California Administrative Notice Register 87, Number 52-Z, December 25, 1987, pages 1058-1064, typewritten version pages 21-27 for an extensive discussion regarding the "use of forms in state government."

The regulatory text must include a form title and/or number and the date of the form. A copy of the form must be included in the rulemaking record.

(b) The requirement that if an emergency exists, the owner or operator is required to ". . . notify the State Office of Emergency Services and/or the appropriate Regional Board" is unclear. If the owner or operator only notifies one of the two specified entities, in reliance on the "or" option will they be in violation of this subsection? If the owner or operator must notify both entities than only the "and" should be used. Who determines compliance with this subsection since there are 2 options?

13. Section 2652, subsection (d) requires that after an unauthorized release the owner or operator of an underground storage tank must submit reports. Subsection (d) states in relevant part that:

> ". . . At a minimum, the reports shall include the information requested in Paragraphs (sic) (c)(7), (c)(8), and (c)(9) of this section. The reports shall be submitted as attachments to the Leak Site Update Form provided by the Board and obtained from the agency overseeing the cleanup. These reports shall contain all data and analyses resulting from investigations and corrective actions. Information obtained in Sections 2653

and 2654 shall be submitted as part of the periodic report to the local agency." (Emphasis added.)

(a) Paragraphs (c)(7), (c)(8) and (c)(9) of section 2652 require information rather than request it.

(b) It is not clear if the "Leak Site Update Form" is the same form as the "leak report form" required in subsection (b) of section 2652. As explained in Issue B12 the regulatory text must include a form title and/or number and the date of the form. A copy of the form must be included in the rulemaking record.

(c) The phrase "Information obtained in Sections 2653 and 2654 . . ." is not accurate. Sections 2653 and 2654 do not obtain information but rather require or mandate that information be provided.

14. Section 2661, subsection (n) declares that ". . . Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate article of this chapter." Chapter 16 consists of 10 articles. It would be helpful to the directly affected public if the regulatory text identified by number which articles, e.g. 3 or 6 or 7 are the "appropriate" articles to follow.

15. Section 2664, subsection (a) requires that

> "All underground pressurized piping containing non-petroleum hazardous substances shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998."

Clarification is needed from the Board if they intended to refer only to section 2635, subsection (c). Subsections (b) or (d) of section 2635 also contain requirements that may possibly apply depending on the Board's intent. See related Issue B5.

16. Section 2672 deals with permanent closure requirements. Subsections (b)(3) and (4) provide that

> "(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.

(4) An owner of an underground storage tank or any part thereof that is destined for a specific reuse shall advise the local agency of:

(A) The name of the new owner of the underground storage tank;

(B) Name of the new operator;

(C) The location of use; and

(D) Nature of use."

Subsections (b)(3) and (4) do not specify when the owner must document or advise the local agency. In the absence of a deadline, the directly affected public would not know when they would be out of compliance with these regulatory provisions.

17. Section 2682, subsection (a) states that ". . . Application for a site-specific variance shall be made to the appropriate regional board on a form provided by the regional board." (Emphasis added.) See Issue B12 for a discussion of why this language fails the "Clarity" standard.

18. Section 2690, subsection (b) declares that:

"(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any unused portion of the initial fee, as appropriate." (Emphasis added.)

The clause "as appropriate" is unclear. Who determines when a refund would be "appropriate" and using what criteria? In contrast section 2681, subsection (c) states ". . . The Board will bill the applicant for additional costs or refund any unused portion of the initial fee." This language implies a purely mathematical decision, either money is due the Board or a refund is due to the applicant based on actual costs. The "as appropriate" language in section 2690, subsection (b) appears to add an unspecified judgment factor to the actual cost methodology.

19. Section 2711, subsection (c) requires the permit application to be on ". . . a form provided by the

Board . . ." See Issue B12 for a discussion of why this language fails the "Clarity" standard.

20. Appendix I, Table A cross references suggested specifications e.g., American Society for Testing and Materials (ASTM) standards, to specific regulatory sections. However the regulatory text implies that the "suggested" standard is actually one that is required. For example, Appendix I, Table A lists ASTM D-638 "Tensile Properties of Plastics" as "suggested" for section 2631, subsection (d)(6). Section 2631, subsection (d)(6) states a membrane liner ". . . must meet the requirements in Table 3.1 . . ." Table 3.1 lists ASTM 638 as the standard for unsupported membrane liners. Reading section 2631 and Table 3.1 together they require rather than "suggest" the use of ASTM 638. Additionally we note that Table 3.1 lists "ASTM 638" not "ASTM D-638". If they are the same standard they should be identified consistently in both Table 3.1 of section 2631 and Table A of Appendix I.

21. Appendix VI contains a Form labeled "Underground Storage Tank Installation Certificate of Compliance Form C 3/91". The Appendix states "the owner or operator can use the form below to certify that the UST and piping were installed properly." Clarification is needed from the Board as to whether the form is intended to be optional because of the term "can use the form" or if it is a mandated form in which case the Appendix should state "must use" or "shall use" the form. Please note that section 2635, subsection (e) states "Owners or their agents shall certify (see Appendix VI) that the installation of underground storage tanks and piping meets all of the following conditions . . ." This language implies the use of the form contained in Appendix VI is mandatory.

    At the bottom of the form is the requirement that "This form must be accompanied by Permit Application Forms A and B unless they have been filed previously." Are Forms A and B the "permit application forms" required in section 2711, subsection (c) that are discussed in Issue B19?

22. "Clarity" would be enhanced in if the quoted language from Health and Safety Code section 25292, subdivision (b) were set off from the text of section 2641 (c)(7) Appendix III (see Issue C1).

C. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "CONSISTENCY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(4).

Government Code section 11349.1, subdivision (a)(4) requires that OAL review all regulations for compliance with the "Consistency" standard. Government Code section 11349, subdivision (d) defines "Consistency" to mean ". . . being in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or other provisions of law."

1. Health and Safety Code section 25292 declares in relevant part that:

> "For every underground storage tank installed on or before January 1, 1984, and used for the storage of hazardous substances, the following actions shall be taken:
>
> . . . (b) Provide a means for visual inspection of the tank system, wherever practical, for the purpose of the monitoring required by subdivision (a). Alternative methods of monitoring the tank system on a monthly, or more frequent basis, may be required by the local agency, consistent with the regulations of the board.
>
> The alternative monitoring methods include, but are not limited to, the following methods:
>
> . . . (5) For monitoring underground tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:
>
> (A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the tank integrity test, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985. . . ." (Emphasis added.)

The emergency regulatory action contains "Appendix III" which states:

> "Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in Section 25292(b)(5) of Chapter 6.7 of Division 20 of the Health and Safety Code (see below). This section refers to Section 2641(c)(7) of the California Code of Regulations as it existed on August 13, 1985 as follows:
>
> 2641(c)(7) Underground Storage Tank Gauging and Testing:
>
> (A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + or -5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation. . . ." (Emphasis added.)

This submitted text differs from the text that was filed at the Secretary of State's Office on August 13, 1985 (OAL File No. 85-07113) and contained in Register 85-33A. The text in effect on August 13, 1985 provided in relevant part ". . . and where the liquid level in the underground storage tank can be measured to an accuracy of + 5 gallons or less . . ." (Emphasis added.)

Because the regulatory text differs from the legislatively decreed 1985 version, it is inconsistent with Health and Safety Code section 25292.

Appendix III also contains what is labeled as Health and Safety Code section 25292, subdivisions (b)(5)(A) and (B). The proposed Appendix III text represents that Health and Safety Code section 25292, subdivision (b)(5)(A) provides as follows:

"(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985." (Emphasis added.)

West's Annotated California Code 1991 Supplementary Pamphlet text for Health and Safety Code section 25292, subdivision (b)(5)(A) provides that ". . . the tank shall be tested using the tank integrity test, at least once every three years . . ." (Emphasis added.) The rulemaking record does not indicate any recent legislation amending Health and Safety Code section 25292 as an urgency statute. On its face, Appendix III's version of Health and Safety Code section 25292 is inconsistent with the current statutory language.

D. THE REGULATORY ACTION DOES NOT COMPLY WITH THE PROCEDURAL REQUIREMENTS OF THE ADMINISTRATIVE PROCEDURE ACT.

OAL must review rulemaking records submitted to it to determine whether all of the procedural requirements of the APA have been satisfied. (Gov.Code, sec. 11349.1,subd.(a).)

1. Government Code section 11346.1, subdivision (b) requires in relevant part that ". . . Any finding of emergency shall include a written statement which contains the information required by paragraphs (2) to (6) inclusive, of subdivision (a) of Section 11346.5 . . . "

   Government Code section 11346.5, subdivision (a)(6) requires "An estimate, prepared in accordance with instructions adopted by the Department of Finance, of . . . the cost or savings in federal funding to the state." The Finding of Emergency does not contain the required estimate of costs or savings in federal funding to the state.

2. Health and Safety Code section 25299.7, subdivision (c) provides in relevant part that

> "The board shall adopt any regulations necessary to obtain state program approval pursuant to Section 6991c of Title 42 of the United States Code. The board shall adopt these regulations as emergency regulations in accordance with Chapter 3.5 . . . of the Government Code, and for purposes of that Chapter, including Section 11349.6 of the Government Code, the adoption of these regulations is an emergency and shall be considered by the Office of Administrative Law as necessary for the immediate preservation of the public peace, health and safety, and general welfare . . . ."

The rulemaking record declares that

> "The proposed amendments bring State Underground Storage Tank regulations into conformance with the Federal regulations as required by Section 25299.7 (c) of the Health and Safety Code. Section 25299.7 (c) directs the Board to adopt these regulations as emergency regulations . . . ."

The rulemaking record does not directly state that the emergency regulations in issue ". . . are necessary to obtain state program approval pursuant to Section 6991 c of title 42 of the United States Code." It is not clear from the record if the existing underground storage tank regulations have been found to be out of conformance with Federal law and therefore the existing state program approval is in jeopardy or has been rescinded.

3. Government Code section 11346.5, subsection (b) requires that the agency make available to the public upon request, ". . . the express terms of the proposed action using underline or italics to indicate additions to, and strikeout to indicate deletions from, the California Code of Regulations."

The submitted regulations do not match the existing regulations that were filed at the Secretary of State's Office on August 13, 1985 and printed in the CCR. The following examples are illustrative. Existing section 2621's definition of "existing underground storage tank" states that it ". . . means any underground storage tank that is not a new underground storage tank". The submitted text which is proposed as section 2611 indicates the current text defines an "existing underground storage tank" as ". . . any underground storage tank that was installed prior to January 1,

1984". Appendix I, Table A is missing the following four standards "ASTM D-814, ASTM D-543, ASTM D-2240, and ASTM D-2684" and Table B of Appendix I lists the National Sanitation Foundation as if it were already contained in the list of organizations adopting voluntary consensus standards when the National Sanitation Foundation is not part of the regulations filed August 13, 1985. Additionally an organization that is currently listed in Table B, the Steel Tank Institute, is missing from the listing but is not shown as being deleted by the use of strikeouts.

The use of strikeout and underline also serves the valuable function of indicating changes for accurately printing regulations in the CCR. When amending a sentence, the beginning word needs to have the change from capitalization to a small letter indicated. (See for example sections 2631, 2632, 2646, 2661, 2670, 2671 and 2712.) When authority and reference citations are added they need to be underlined. In several sections, for example 2640 and 2652, authority or reference citations currently in existence are missing but are not shown as being deleted. In sections 2641 and 2645, new authority and reference citations are added without underlining.

In order to assist the Board in making the numerous required corrections, an annotated copy of the 125 pages of regulatory text is enclosed with this disapproval decision and is incorporated by reference into this disapproval decision. Although not required, it would be helpful for purposes of review if the regulations were not resubmitted as dual column double sided text.

4. The emergency regulatory action does not comply with the applicable requirements of section 20 of Title 1 of the CCR.

Section 20 provides in relevant part that

> "(a) 'Incorporation by reference' means the method whereby a regulation printed in the California Code of Regulations makes provisions of another document part of that regulation by reference to the other document.
> (b) Material proposed for 'incorporation by reference' shall be reviewed in accordance with procedures and standards for a regulation published in the California Code of Regulations.

Except as otherwise specified in Section 11 of these regulations, the Office of Administrative Law shall not review material proposed for 'incorporation by reference' for compliance with the applicable standards of Government Code Section 11349.1 when a California statute or other applicable law specifically requires the adoption or enforcement of the incorporated material by the rulemaking agency.
(c) An agency may 'incorporate by reference' only if the following conditions are met . . .
. . . (4) The regulation text states that the document is incorporated by reference and identifies the document by title and date of publication or issuance. Where an authorizing California statute or other applicable law requires the adoption or enforcement of the incorporated provisions of the document as well as any subsequent amendments thereto, no specific date is required.
(5) The regulation text specifies which portions of the document are being incorporated by reference.
(d) If the document is a formal publication reasonably available from a commonly known or identified source, the agency need not provide six duplicate copies of the document under Government Code Section 11343(c).
(e) Where a regulation which incorporates a document by reference is approved by the office and filed with the Secretary of State, the document so incorporated shall be deemed to be a regulation subject to all provisions of the Administrative Procedure Act, Chapter 3.5, Part I, Division 3, Title 2 of the Government Code."

(a) Table 3.1 of Section 2631 lists the following incorporated by reference standards: ASTM 638, ASTM E96, ASTM D413, ASTM D471, FTMS 101 (Method 2065), ASTM D1004 (DIEC), ASTM D751 (Procedure B, Cut Strip Method) and FTMS 101B (Method 2031).

The above referenced incorporated by reference documents are not identified by title and date of publication or issuance.

We note that section 2649, subsection (b)(1)(A) contains the following excellent example of regulatory text incorporation by reference:

"Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5 and 6 published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225). . ."

(b) Section 2649, subsection (d)(7) incorporates by reference the Department of Water Resources "Standards for Well Construction". The regulation text does not indicate where these "Standards" are located in the CCR, whether the Board intends to incorporate all or only part of the "Standards" and the date of the "Standards".

5. Although not a basis of disapproval the OAL Standard Form 400 (Rev. 7-90) should note that these regulations are also in Title 26 of the CCR. Additionally, the Standard Form 400 states that Sections 2610 through 2714 are "adoptions" when in actuality the majority of sections are amendments and there also are several repealed sections. The Form 400 should categorize the sections as either "adopt" or "amend" or "repeal".

CONCLUSION

For the reasons set forth above, OAL has disapproved the amendment of sections 2610-2714 (non-inclusive) and Appendix I, Tables A, B and C, the repeal of sections 2640-2663 (non-inclusive) and the adoption of sections 2640-2664 (non-inclusive) and Appendixes II-V of Titles 23 and 26 of the California Code of Regulations. If you have any questions, please call me at (916) 323-6809.

DATE: June 21, 1991

Barbara Eckard
BARBARA ECKARD
Staff Counsel

for: JOHN D. SMITH
Deputy Director

BE:dkk
e:\wp\exec\wb0605.01

Original: Walt Pettit, Executive Director
cc: David Holtry

III. Resubmittal of emergency regulations

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

a. Memo to OAL transmitting resubmittal of regulations, July 25, 1991

State of California

Memorandum

To : John Smith
Deputy Director
Office of Administrative Law
555 Capitol Mall, Suite 1290
Sacramento, CA 95812

Date: July 25, 1991

1991 JUL 30 AM 9 54

OFFICE OF
ADMINISTRATIVE LAW

Walt Pettit
Executive Director
From : STATE WATER RESOURCES CONTROL BOARD

Subject: RESUBMITTAL OF UNDERGROUND STORAGE TANK (UST) EMERGENCY REGULATIONS

On June 17, 1991, the Office of Administrative Law (OAL) disapproved the State Water Resources Control Board's Underground Storage Tank emergency regulatory action.

The deficiencies noted by OAL have been addressed in the attached documents which are as follows:

1. "Changes to the UST Regulations in Response to the OAL Comments" (July 1991).

2. "Fiscal Impact" (Revised, July 1991).

3. "Informative Digest" (Revised, July 1991).

4. "Finding of Emergency".

5. Text of the amended UST regulations.

These documents are being transmitted to you for your review. If you have any questions, please call Harry M. Schueller at (916) 739-4332.

Attachments

b. Form 400, Emergency Resubmittal, July 25, 1991

NOTICE PUBLICATION/REGULATIONS SUBMISSION

STD. 400 (REV. 2/90)

EMERGENCY

RESUBMITTAL

OAL FILE NUMBER	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER	PREVIOUS REGULATORY ACTION NUMBER
			91-0730-01E	91-0605-01E

For use by Office of Administrative Law (OAL) only

1991 JUL 30 AM 9 58

OFFICE OF ADMINISTRATIVE LAW

NOTICE | REGULATIONS

AGENCY: State Water Resources Control Board

AGENCY FILE NUMBER (If any):

A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE	TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE

3. NOTICE TYPE	4. AGENCY CONTACT PERSON	TELEPHONE NUMBER
☐ Notice re Proposed Regulatory Action ☐ Other		

OAL USE ONLY	ACTION ON PROPOSED NOTICE	NOTICE REGISTER NUMBER	PUBLICATION DATE
	☐ Approved as Submitted ☐ Approved as Modified ☐ Disapproved/ Withdrawn		

B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics-related)

SECTIONS AFFECTED

ADOPT: 2640-2664 (non-inclusive) and Appendixes II-VI

AMEND: 2610-2714 (non-inclusive) and Appendix I, Tables A, B and C

TITLE(S): 23 and 26

REPEAL: 2640-2663 (non-inclusive)

2. TYPE OF FILING

☐ Regular Rulemaking (Gov. Code, § 11346) ☒ Resubmittal ☐ Changes Without Regulatory Effect (Cal. Code Regs., title 1, § 100) ☒ Emergency (Gov. Code, § 11346.1(b))

☐ Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Government Code §§ 11346.4 - 11346.8 prior to, or within 120 days of, the effective date of the regulations listed above.

☐ Print Only ☐ Other (specify)

3. DATE(S) OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §§ 44 and 45)

July 15, 1991

4. EFFECTIVE DATE OF REGULATORY CHANGES (Gov. Code § 11346.2)

☐ Effective 30th day after filing with Secretary of State ☒ Effective on filing with Secretary of State ☐ Effective other (Specify)

5. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

☐ Department of Finance (Form STD. 399) ☐ Fair Political Practices Commission ☐ State Fire Marshal

☐ Other (Specify)

6. CONTACT PERSON	TELEPHONE NUMBER
David Holtry	(916) 739-2421

7.

I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

SIGNATURE OF AGENCY HEAD OR DESIGNEE	DATE
Walt Pettit	7/25/91

TYPED NAME AND TITLE OF SIGNATORY

Walt Pettit, Executive Director

c. "Changes to the Underground Storage Tank Regulations in Response to Office of Administrative Law Comments", July 1991

JULY 1991

CHANGES TO THE UNDERGROUND STORAGE TANK REGULATIONS IN RESPONSE TO OFFICE OF ADMINISTRATIVE LAW COMMENTS

On June 5, 1991 the State Water Resources Control Board (Board) submitted the proposed emergency underground storage tank regulations to the Office of Administrative Law (OAL) for approval.

On June 17, 1991, OAL disapproved the above-referenced emergency regulatory action because it did not comply with the "Necessity", "Clarity" and "Consistency" standards contained in Government Code section 11349.1 and failed to comply with the procedural requirements of the Administrative Procedure Act (APA). The following issues were presented:

A. DOES THE REGULATORY ACTION COMPLY WITH THE "NECESSITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(1)?

B. DOES THE REGULATORY ACTION COMPLY WITH THE "CLARITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(3)?

C. DOES THE REGULATORY ACTION COMPLY WITH THE "CONSISTENCY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(4)?

D. DOES THE REGULATORY ACTION COMPLY WITH THE PROCEDURAL REQUIREMENTS OF THE ADMINISTRATIVE PROCEDURE ACT?

ISSUES PRESENTED & CORRESPONDING RESPONSES

A. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "NECESSITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(1).

1. No necessity was provided for the incorporation by reference of the following test methods: ASTM D638, ASTM E96, ASTM D413, ASTM D471, FTMS 101 (Method 2065), ASTM D104 (DIEC), ASTM D751 (Procedure B, Cut Strip Method) and FTMS 101B (Method 2031) which are listed in Table 3.1 of Section 2631; and the Department of Water Resources "Standards for Well Construction" which is in section 2649, subsection (d)(7). (See related Issue D4.)

RESPONSE:

The regulatory text in Table 3.1 is changed to emphasize that the listed ASTM and FTMS test methods are some of the acceptable test methods for evaluation of liner physical properties. The choice of these test methods and the required standards of Table 3.1 is based on the common industry practices. Compliance with the Department of Water Resources "Standards for Well Construction" is necessary to protect the quality of any affected water body. See Informative Digest Pages 3 and 7.

B. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "CLARITY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(3).

1. The existing internal text citations to the CCR properly refer to "subsections". The proposed text amends "subsection" to "paragraph" which is not consistent with the CCR hierarchy.

RESPONSE:

The word "paragraph" is changed to "subsection" in the following pages: 3.10, 3.12, 3.19, 3.24, 3.35, 3.37, 3.39, 3.40, 3.44, 4.19, 4.26, 4.27, 4.31, 4.32, 4.33, 4.43, 4.54, 4.56, 4.62, 4.68, 4.74, 4.76, 4.78, 4.79, 5.2, 5.9, 5.10, 6.6, 6.10, 7.5, 7.6, 10.6; and is changed to "section" in page 5.12. The word "subsection" is changed to "section" in pages 4.20 and 4.79.

2. Section 2610, subsection (a) provides in relevant part that "Unless the context clearly requires otherwise, the terms used in this chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by Section 2611 of this Article." (Emphasis added.) Existing section 2611 contains exemptions affecting the definition of underground storage tanks and is proposed to be renumbered as section 2621. Proposed renumbered section 2611 contains definitions. Clarification is needed from the Board as to whether it is their intent that section 2610 should refer to only the definitions in proposed renumbered section 2611 or to the definitions in proposed renumbered sections 2611 and 2621.

RESPONSE:

The intent is that Section 2610 refer to the definitions in proposed renumbered Section 2611. The 1985 regulations cite Section 2621 and appropriate correction to the text is made in page 1.1.

3. Table 3.1 in section 2631 incorporates by reference (see related Issue D4) the following test methods for unsupported liners: ASTM 638, ASTM E96, ASTM D413, ASTM D471, FTMS101 (Method 2065) and ASTM D1004 (DIEC). Table 3.1 incorporates by reference the following test methods for supported liners: ASTM D751 (Procedure B, Cut Strip Method), ASTM E96, ASTM D751, ASTM D471, FTMS 101B (Method 2031) and ASTM D751. These documents are listed in Appendix I, Table A by number and title. In order to verify that these documents are accurately cited in both the regulation text and Table A they must be included with the emergency regulatory action. Additionally the regulation text must indicate the date so that the directly affected public will know which version of each test method is required. If the test methods are not dated, please indicate that when resubmitting the regulations. (See related Issue D4.)

RESPONSE:

A copy of the test methods is included. Table A of Appendix I which includes the titles of these tests is amended to include the dates of available revision of these test methods.

4. Section 2632, subsection (e)(2) imposes a time deadline of ". . . but not more than 30 days" It is not clear if this is 30 calendar days or working days. Only in section 2714 does the regulatory text refer to a time deadline of "working days". The deadlines in the following sections also use "days" without specifying "working" or "calendar" days: 2635, 2643, 2645, 2649, 2652, 2655, and 2714.

RESPONSE:

The regulatory intent is "Calendar days". The word "days" has been amended to "calendar days" in the following pages: 3.17, 3.33, 3.37, 4.43, 4.72, 5.10.

5. Section 2635 has subsections (a), (b), (d) and (e) clearly identified but subsection (c) is not indicated. It appears from the regulatory scheme that subsection (c) immediately follows subsection (b)(7)(D).

RESPONSE:

Subsection "(c)" in page 3.40 was left out in printing of the document. Resubmitted text includes subsection "(c)".

6. Existing Table 4.1, which is currently part of existing section 2641 is not shown as being either deleted or retained. Clarification is needed for the Board as to its intent regarding Table 4.1. Please note section 2645 includes a Table 4.1 dealing with a different subject. If the Board retains existing Table 4.1 then proposed Table 4.1 in section 2645 must be renumbered.

RESPONSE:

Existing Table 4.1 is intended to be deleted. In the resubmitted text, this table is included with strikeouts.

7. In section 2641, subsection (g)(9) "homogeneity" is misspelled.

RESPONSE:

The erroneous spelling of "homogeneity" in page 4.22 is corrected.

8. Section 2646, subsection (k)(4) requires the owner or operator of an underground storage tank to have all dispenser meters associated with hazardous substance withdrawal checked for calibration ". . . within 24 hours of completing the procedure required in Paragraph (sic) (4) immediately above." (Emphasis added.) There is no subsection (4) immediately above since this subsection is subsection (k)(4) as a result of renumbering. It is not clear if it is subsection (k)(3) or subsection (h)(4) which specifies the intended required procedure.

RESPONSE:

The proposed text in page 4.54 is changed from "paragraph (f)(4) immediately above" to "Subsection (3) immediately above" to correct the text citation.

9. Section 2647, subsection (c) prescribes that "Vadose zone vapor monitoring shall be conducted either daily or continuously." It is not clear who determines whether monitoring is done daily or continuously. Is it the owner, or the local agency or the Board that

makes the determination?

RESPONSE:

The proposed text of Section 2647(c) in page 4.59 is changed from "Vadose zone vapor monitoring shall be conducted either daily or continuously." to "Vadose zone monitoring shall be conducted continuously". This change clarifies required frequency of monitoring and is consistent with the statutory language.

10. Section 2647, subsection (e)(7) requires that "All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in Sections 2649 (b)(c)(e) and (f) of this article." Clarification is needed from the Board if the absence of a reference to section 2649, subsection (d) is intentional.

RESPONSE:

Absence of reference to Subsection (d) is intentional. Subsection (d) of Section 2649 specifies requirements pertaining to ground water wells only.

11. Section 2649, subsection (d)(7) incorporates by reference the Department of Water Resources "Standards for Well Construction". The regulation text does not include a date for the standards, where the "Standards" are located in the CCR or whether the Board intends to incorporate all or only part of the "Standards". A copy of the "Standards" must be included with the emergency regulatory action unless they are already in existing regulations. (See related Issues B3 and D4.)

RESPONSE:

Section 2649(d)(7) (page 4.76) is changed from "Department of Water Resources Standards for Well Construction" to "Department of Water Resources Standards for Well Construction (Reference Bulletins 74-81 and 74-90 on Water Well Standards are available from the Department of Water Resources, Sacramento)". This informs the affected public where copies of such document can be obtained. A copy of these standards are included in the resubmitted regulatory package.

12. Section 2652, subsection (b) requires owners or operators in specified circumstances to comply with the following requirements:

"(b) Within 24 hours after an unauthorized release

or condition has been detected, or should have been detected, the owner or operator shall notify the local agency by submitting a leak report form and shall investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services and/or the appropriate Regional Board." (Emphasis added.)

(a) The reference to the leak report form violates the "Clarity" standard. When regulations require the use of forms, OAL must be able to read the forms to see whether the forms contain any regulations which are subject to its review. The regulatory text must include a form title and/or number and the date of the form. A copy of the form must be included in the rulemaking record.

RESPONSE:

Section 2652(b) in page 5.7 is changed from "owner or operator shall notify the local agency by submitting a leak report form" to "owner or operator shall notify the local agency". The reporting of the leak can be done by any available means, (e.g. phone call). Use of a form is not required.
The text in section 2650(e) is also changed from "The owner or operator of an underground storage tank shall report on a form provided by the Board any unauthorized release . . . " to "The owner or operator of an underground storage tank shall report to the Board any unauthorized release . . . ".

(b) The requirement that if an emergency exists, the owner or operator is required to ". . . notify the State Office of Emergency Services and/or the appropriate Regional Board" is unclear. If the owner or operator only notifies one of the two specified entities, in reliance on the "or" option will they be in violation of this subsection? If the owner or operator must notify both entities then only the "and" should be used. Who determines compliance with this subsection since there are 2 options?

RESPONSE:

The requirement that if an emergency exists, the owner or operator is required to "...notify the State Office of Emergency Services and/or the appropriate Regional Board" is restated as "...notify the State Office of Emergency Services". The reason for use of "and/or" in

the text submitted to OAL was that in some circumstances State Office of Emergency Services and Regional board are the same.

13. Section 2652, subsection (d) requires that after an unauthorized release the owner or operator of an underground storage tank must submit reports. Subsection (d) states in relevant part that:

> ". . . At a minimum, the reports shall include the information requested in Paragraphs (sic) (c)(7), (c)(8), and (c)(9) of this section. The reports shall be submitted as attachments to the Leak Site Update Form provided by the Board and obtained from the agency overseeing the cleanup. These reports shall contain all data and analyses resulting from investigations and corrective actions. Information obtained in Sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency." (Emphasis added.)

(a) Paragraphs (c)(7), (c)(8) and (c)(9) of section 2652 require information rather than request it.

RESPONSE:

Section 2652(d) in page 5.9 is changed to ". . . At a minimum, the reports shall include an update of the required information in Subsection (c) of this section, and the results of all investigations and corrective actions. Information required in Sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency."

(b) It is not clear if the "Leak Site Update Form" is the same form as the "leak report form" required in subsection (b) of section 2652. As explained in Issue B12 the regulatory text must include a form title and/or number and the date of the form. A copy of the form must be included in the rulemaking record.

RESPONSE:

As explained in response to issues B12(a) and B13(a) above, "Leak Site Update Form" and "leak report form" are deleted from the regulatory text. There are no leak report forms required.

(c) The phrase "Information obtained in Sections 2653 and 2654 . . ." is not accurate. Sections 2653 and 2654 do

not obtain information but rather require or mandate that information be provided.

RESPONSE:

See response to issue B13(a).

14. Section 2661, subsection (n) declares that ". . . Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate article of this chapter." Chapter 16 consists of 10 articles. It would be helpful to the directly affected public if the regulatory text identified by number which articles, e.g. 3 or 6 or 7 are the "appropriate" articles to follow.

RESPONSE:

Section 2661(n) in page 6.9 is changed to ". . . Tanks that fail any test shall be repaired in accordance with provisions of this section, replaced in accordance with article 3, or closed in accordance with Article 7 of this chapter."

15. Section 2664, subsection (a) requires that

> "All underground pressurized piping containing non-petroleum hazardous substances shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(c) by December 22, 1998."

Clarification is needed from the Board if they intended to refer only to section 2635, subsection (c). Subsections (b) or (d) of section 2635 also contain requirements that may possibly apply depending on the Board's intent. See related Issue B5.

RESPONSE:

Section 2664(a) in page 6.13 is changed to " All underground pressurized piping containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in Section 2635(b) by December 22, 1998." This change deletes "non-petroleum" because it is inconsistent with the text of these regulations. Section 2635(b) contains requirements for underground piping and as such is the appropriate citation. Section 2635(c) contains requirements for underground storage tank spill container and overfill prevention system, and as such is not the appropriate citation. Section 2635(d)

contains requirements for secondary containment on motor vehicle fuel and as such it is also not the appropriate citation for requirements on secondary containment for non-motor vehicle fuel piping.

16. Section 2672 deals with permanent closure requirements. Subsections (b)(3) and (4) provide that

> "(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed.
> (4) An owner of an underground storage tank or any part thereof that is destined for a specific reuse shall advise the local agency of:
>
> (A) The name of the new owner of the underground storage tank;
>
> (B) Name of the new operator;
>
> (C) The location of use; and
>
> (D) Nature of use."

Subsections (b)(3) and (4) do not specify <u>when</u> the owner must document or advise the local agency. In the absence of a deadline, the directly affected public would not know when they would be out of compliance with these regulatory provisions.

RESPONSE:

Section 2672(b)(3) in page 7.7 is modified to include the statement that " This documentation shall be submitted within the time frame specified by the local agency."

Section 2672(b)(4) in page 7.7 is restated to require that "An owner of an underground storage tank or any part thereof that is destined for a specific reuse shall advise the local agency, within the time frame specified by that agency, of: . .".

17. Section 2682, subsection (a) states that ". . . Application for a site-specific variance shall be made to the appropriate regional board on <u>a form provided by the regional board</u>." (Emphasis added.) See Issue B12 for a discussion of why this language fails the

"Clarity" standard.

RESPONSE:

Section 2682(a) (page 8.5) is changed by deleting "on a form provided by the regional board." This deletion clarifies that for a site-specific variance submittal of a special form is not mandated by the statutes and is not required in the regulations. The request can be made by means of a letter which shall contain the required information in Section 2682(c).

18. Section 2690, subsection (b) declares that:

> "(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any unused portion of the initial fee, as appropriate." (Emphasis added.)

The clause "as appropriate" is unclear. Who determines when a refund would be "appropriate" and using what criteria? In contrast section 2681, subsection (c) states ". . . The Board will bill the applicant for additional costs or refund any unused portion of the initial fee." This language implies a purely mathematical decision, either money is due the Board or a refund is due to the applicant based on actual costs. The "as appropriate" language in section 2690, subsection (b) appears to add an unspecified judgment factor to the actual cost methodology.

RESPONSE:

The phrase "as appropriate" in Section 2690, page 9.2 is deleted.

19. Section 2711, subsection (c) requires the permit application to be on ". . . a form provided by the Board . . ." See Issue B12 for a discussion of why this language fails the "Clarity" standard.

RESPONSE:

Section 2711(c) (page 10.6) is modified to "The permit application (Form A dated 5/91 and Form B dated 7/91) shall be accompanied by the local government and state surcharge fees." A copy of these forms is included in the resubmitted regulatory package.

20. Appendix I, Table A cross references suggested

specifications e.g., American Society for Testing and Materials (ASTM) standards, to specific regulatory sections. However the regulatory text implies that the "suggested" standard is actually one that is required. For example, Appendix I, Table A lists ASTM D-638 "Tensile Properties of Plastics" as "suggested" for section 2631, subsection (d)(6). Section 2631, subsection (d)(6) states a membrane liner ". . . must meet the requirements in Table 3.1 . . ." Table 3.1 lists ASTM 638 as the standard for unsupported membrane liners. Reading section 2631 and Table 3.1 together they require rather than "suggest" the use of ASTM 638. Additionally we note that Table 3.1 lists "ASTM 638" not "ASTM D-638". If they are the same standard they should be identified consistently in both Table 3.1 of section 2631 and Table A of Appendix I.

RESPONSE:

Table 3.1 is corrected to indicate that the listed test methods are "Some Acceptable Test Methods". This clarifies that the test methods are not required by the regulations; however, the material properties are required to meet the ranges specified in this Table. Test method is "ASTM D-638"; the entry in Table 3.1 is changed to correct this error.

21. Appendix VI contains a Form labeled "Underground Storage Tank Installation Certificate of Compliance Form C 3/91". The Appendix states "the owner or operator can use the form below to certify that the UST and piping were installed properly." Clarification is needed from the Board as to whether the form is intended to be optional because of the term "can use the form" or if it is a mandated form in which case the Appendix should state "must use" or "shall use" the form. Please note that section 2635, subsection (e) states "Owners or their agents shall certify (see Appendix VI) that the installation of underground storage tanks and piping meets all of the following conditions . . ." This language implies the use of the form contained in Appendix VI is mandatory.

    At the bottom of the form is the requirement that "This form must be accompanied by Permit Application Forms A and B unless they have been filed previously." Are Forms A and B the "permit application forms" required in section 2711, subsection (c) that are discussed in Issue B19?

RESPONSE:

Appendix VI is changed from "the owner or operator can use the form below . . . . " to "the owner or operator shall use the form below . . . ."

22. "Clarity" would be enhanced if the quoted language from Health and Safety Code section 25292, subdivision (b) were set off from the text of section 2641 (c)(7) Appendix III (see Issue C1).

RESPONSE:

The format in Appendix III is changed to improve clarity. The quoted language from Health and Safety Code section 25292, subdivision (b) is kept.

C. THE REGULATORY ACTION DOES NOT COMPLY WITH THE "CONSISTENCY" STANDARD OF GOVERNMENT CODE SECTION 11349.1, SUBDIVISION (a)(4).

1. Health and Safety Code section 25292 declares in relevant part that:

> "For every underground storage tank installed on or before January 1, 1984, and used for the storage of hazardous substances, the following actions shall be taken:
>
> . . . (b) Provide a means for visual inspection of the tank system, wherever practical, for the purpose of the monitoring required by subdivision (a). Alternative methods of monitoring the tank system on a monthly, or more frequent basis, may be required by the local agency, consistent with the regulations of the board.
>
> The alternative monitoring methods include, but are not limited to, the following methods:
>
> . . . (5) For monitoring underground tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:
>
> (A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the tank integrity test, at least once every three years, and the

owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985. . . ." (Emphasis added.)

The emergency regulatory action contains "Appendix III" which states:

"Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in Section 25292(b)(5) of Chapter 6.7 of Division 20 of the Health and Safety Code (see below). This section refers to Section 2641(c)(7) of the California Code of Regulations as it existed on August 13, 1985 as follows:

2641(c)(7) Underground Storage Tank Gauging and Testing:

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of + or -5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation. . . ." (Emphasis added.)

This submitted text differs from the text that was filed at the Secretary of State's Office on August 13, 1985 (OAL File No. 85-07113) and contained in Register 85-33A. The text in effect on August 13, 1985 provided in relevant part ". . . and where the liquid level in the underground storage tank can be measured to an accuracy of + 5 gallons or less . . ." (Emphasis added.)

Because the regulatory text differs from the legislatively decreed 1985 version, it is inconsistent with Health and Safety Code section 25292. Appendix III also contains what is labeled as Health and Safety Code section 25292, subdivisions (b)(5)(A)

and (B). The proposed Appendix III text represents that Health and Safety Code section 25292, subdivision (b)(5)(A) provides as follows:

> "(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of Section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985." (Emphasis added.)

West's Annotated California Code 1991 Supplementary Pamphlet text for Health and Safety Code section 25292, subdivision (b)(5)(A) provides that ". . . the tank shall be tested using the tank integrity test, at least once every three years . . ." (Emphasis added.) The rulemaking record does not indicate any recent legislation amending Health and Safety Code section 25292 as an urgency statute. On its face, Appendix III's version of Health and Safety Code section 25292 is inconsistent with the current statutory language.

RESPONSE:

The text in Appendix III is changed from "+ or - 5 Gallons or less" to "+5 Gallons or less"; and replacing "the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329" with "the tank integrity test".

D. THE REGULATORY ACTION DOES NOT COMPLY WITH THE PROCEDURAL REQUIREMENTS OF THE ADMINISTRATIVE PROCEDURE ACT.

OAL must review rulemaking records submitted to it to determine whether all of the procedural requirements of the APA have been satisfied. (Gov.Code, sec. 11349.1,subd.(a).)

1. Government Code section 11346.1, subdivision (b) requires in relevant part that ". . . Any finding of emergency shall include a written statement which contains the information required by paragraphs (2) to (6) inclusive, of subdivision (a) of Section 11346.5 . . . "
Government Code section 11346.5, subdivision (a)(6) requires "An estimate, prepared in accordance with

instructions adopted by the Department of Finance, of . . . the cost or savings in federal funding to the state." The Finding of Emergency does not contain the required estimate of costs or savings in federal funding to the state.

RESPONSE:

Because of an oversight the appropriate box in the submitted Fiscal Impact Statement, indicating no impact on federal funding to the state (box 3 in Section C), was not checked. This was pointed out to Stan Hiuga of the Department of Finance. He advised us to check box C of Section 3, make a notation that the form is revised, and that the regulations can be resubmitted to OAL without going back to the Department of Finance. See Revised Fiscal Impact.

2. Health and Safety Code section 25299.7, subdivision (c) provides in relevant part that

> "The board shall adopt any regulations necessary to obtain state program approval pursuant to Section 6991c of Title 42 of the United States Code. The board shall adopt these regulations as emergency regulations in accordance with Chapter 3.5 . . . of the Government Code, and for purposes of that Chapter, including Section 11349.6 of the Government Code, the adoption of these regulations is an emergency and shall be considered by the Office of Administrative Law as necessary for the immediate preservation of the public peace, health and safety, and general welfare . . . ."

The rulemaking record declares that

> "The proposed amendments bring State Underground Storage Tank regulations into conformance with the Federal regulations as required by Section 25299.7 (c) of the Health and Safety Code. Section 25299.7 (c) directs the Board to adopt these regulations as emergency regulations . . . ."

The rulemaking record does not directly state that the emergency regulations in issue ". . . are necessary to obtain state program approval pursuant to Section 6991 c of title 42 of the United States Code." It is not clear from the record if the existing underground storage tank regulations have been found to be out of conformance with Federal law and therefore the existing state program approval is in jeopardy or has been rescinded.

RESPONSE:

The submittal of the regulations as emergency is not linked to obtaining state program approval from the federal government. Adoption of the revised regulations is necessary for the immediate preservation of the public peace, health, safety, and general welfare. See statement on "Finding of Emergency".

3. Government Code section 11346.5, subsection (b) requires that the agency make available to the public upon request, ". . . the express terms of the proposed action using underline or italics to indicate additions to, and strikeout to indicate deletions from, the California Code of Regulations."

The submitted regulations do not match the existing regulations that were filed at the Secretary of State's Office on August 13, 1985 and printed in the CCR. The following examples are illustrative. Existing section 2621's definition of "existing underground storage tank" states that it ". . . means any underground storage tank that is not a new underground storage tank". The submitted text which is proposed as section 2611 indicates the current text defines an "existing underground storage tank" as ". . . any underground storage tank that was installed prior to January 1, 1984". Appendix I, Table A is missing the following four standards "ASTM D-814, ASTM D-543, ASTM D-2240, and ASTM D-2684" and Table B of Appendix I lists the National Sanitation Foundation as if it were already contained in the list of organizations adopting voluntary consensus standards when the National Sanitation Foundation is not part of the regulations filed August 13, 1985. Additionally an organization that is currently listed in Table B, the Steel Tank Institute, is missing from the listing but is not shown as being deleted by the use of strikeouts.

The use of strikeout and underline also serves the valuable function of indicating changes for accurately printing regulations in the CCR. When amending a sentence, the beginning word needs to have the change from capitalization to a small letter indicated. (See for example sections 2631, 2632, 2646, 2661, 2670, 2671 and 2712.) When authority and reference citations are added they need to be underlined. In several sections, for example 2640 and 2652, authority or reference citations currently in existence are missing but are not shown as being deleted. In sections 2641 and 2645, new authority and reference citations are added without underlining.
In order to assist the Board in making the numerous

required corrections, an annotated copy of the 125 pages of regulatory text is enclosed with this disapproval decision and is incorporated by reference into this disapproval decision. Although not required, it would be helpful for purposes of review if the regulations were not resubmitted as dual column double sided text.

RESPONSE:

These errors are corrected throughout the text in the following pages: 1.1, 1.4, 1.10, 3.2, 3.4 - 3.6, 3.11, 3.12, 3.14, 3.15, 3.18, 3.26 - 3.28, 3.33, 4.3, 4.7a, 4.7b, 4.7c, 4.11, 4.12, 4.23, 4.25 - 4.27, 4.36, 4.44, 4.48 - 4.50, 4.53 - 4.56, 5.4 - 5.10, 5.14, 6.4, 6.5, 6.10, 7.2, 7.5, 7.8, 10.4, 10.5, 10.8 and Appendix I.

4. The emergency regulatory action does not comply with the applicable requirements of section 20 of Title 1 of the CCR.

(a) Table 3.1 of Section 2631 lists the following incorporated by reference standards: ASTM 638, ASTM E96, ASTM D413, ASTM D471, FTMS 101 (Method 2065), ASTM D1004 (DIEC), ASTM D751 (Procedure B, Cut Strip Method) and FTMS 101B (Method 2031). The above referenced incorporated by reference documents are not identified by title and date of publication or issuance.

RESPONSE:

Appendix I, Table A includes the titles of the tests and is amended to include the dates.

(b) Section 2649, subsection (d)(7) incorporates by reference the Department of Water Resources "Standards for Well Construction". The regulation text does not indicate where these "Standards" are located in the CCR, whether the Board intends to incorporate all or only part of the "Standards" and the date of the "Standards".

RESPONSE:

See response to issue A1.

5. Although not a basis of disapproval the OAL Standard Form 400 (Rev. 7-90) should note that these regulations are also in Title 26 of the CCR. Additionally, the Standard Form 400 states that Sections 2610 through

2714 are "adoptions" when in actuality the majority of sections are amendments and there also are several repealed sections. The Form 400 should categorize the sections as either "adopt" or "amend" or "repeal".

RESPONSE:

The new Form 400 attached is completed to include both Titles 23 and 26 and categorizes the sections as either "adopt" or "amend" or "repeal".

E. To expedite OAL review and printing of complete set of regulations once they are approved; the errors in the Barclay's California Code of Regulations which do not match the text filed August 13, 1985 at the Secretary of State' Office are corrected. The errors in the following pages are corrected: 2.2, 3.14, 3.18, 6.4, 6.5, and Appendix I pages: I.2 - I.5

F. The following corrections are also made in the resubmitted regulatory text for purposes of further clarification:

Section 2635(b)(5)(D), Page 3.39, ". . to emergency generator. ." is changed to ". . to the emergency generator. .";

Section 2641(g), Page 4.21, ". . Subsection 2641(a) . ." is changed to ". . Subsection (a) . .";

Section 2652 (c), Page 5.8, ". . all of the following information which is known . ." is changed to ". . all of the following information to the extent that information is known . .";

Section 2654, Subsections (a)(3) and (a)(4) in Page 5.12 are deleted. Subsection (b) is expanded from ". . including information gained while confirming the release or completing any necessary initial abatement actions." to ". . including information gained while confirming the release or completing any necessary initial abatement actions and free product removal.";

Section 2655, Subsection (e) in Page 5.13 is changed from "the owner or operator shall prepare and submit to the local agency within 45 days after confirming a release a free product removal report . ." to "A free product removal report . .". The deleted text is stated in Section 2652(e) and is redundant in this section;

Section 2662, Subsection (b) is changed by adding the

following text "retrofit those tanks with secondary containment meeting the requirements specified in Article 3,". This change clarifies the upgrade options for motor vehicle fuel tanks. Without this statement it is not clear that replacing the tank is also an option;

Section 2670, Subsection (b) in Page 7.1 is changed from ". . in which the storage of hazardous substance has ceased for 12 consecutive months but will again be used for the storage of hazardous substances." to ". . in which the storage of hazardous substances has ceased but will again be used for the storage of hazardous substances within the next 12 consecutive months." This change clarifies the regulatory intent of the text;

Appendix I, Table A, test methods not referenced in the regulatory text are deleted.

d. Revised Form 399 and text of Fiscal Impact Statement, July 1991

Revised July 1991

FISCAL IMPACT STATEMENT (REGULATIONS AND ORDERS)

STD 399 (5/86)

STATE OF CALIFORNIA

SEE SAM SECTION 6055 FOR INSTRUCTIONS

DEPARTMENT	CONTACT PERSON	PHONE NUMBER
State Water Resources Control Board	David Holtry	739-4436

TITLE/DESCRIPTION OF REGULATION/ORDER

Underground Storage of Hazardous Substances Regulation, CCR Title 23, Division 3, Chapter 16

A. FISCAL EFFECT ON LOCAL GOVERNMENT (Indicate appropriate boxes 1 through 6 and complete if necessary)

☐ 1. Additional expenditures of approximately $ _____ annually which are reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code. Funding for this reimbursement:

- ☐ a. is provided in (Item _____, Budget Act of _____, ____) or (Chapter _____, Statutes of _____)
- ☐ b. will be requested in the _____ (FISCAL YEAR) Governor's Budget for appropriation in Budget Act of _____.

☒ 2. Additional expenditures of approximately $ 15,640,000* annually which are not reimbursable by the State pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code because this regulation:

- ☒ a. implements the Federal mandate contained in 40 CFR Section 280.21;
- ☐ b. implements the court mandate set forth by the _____ court in the case of _____ vs. _____;
- ☐ c. implements a mandate of the people of this State expressed in their approval of Proposition No. _____ at the _____ (DATE) election;
- ☐ d. is issued only in response to a specific request from the _____, which is/are the only local entity(s) affected;
- ☒ e. is more appropriately financed from the fees (FEES, REVENUE, ETC.) authorized by Section 25287 of the Health & Safety Code;
- ☐ f. provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each such unit.

☐ 3. Savings of approximately $ _____ annually.

☐ 4. No additional costs or savings because this regulation makes only technical, nonsubstantive or clarifying changes to current law and regulations.

☐ 5. No fiscal impact exists because this regulation does not affect any local entity or program.

☐ 6. Other

B. FISCAL EFFECT ON STATE GOVERNMENT (Indicate appropriate boxes 1 through 4 and complete if necessary)

☒ 1. Additional expenditures of approximately $ 5,935,000* annually. It is anticipated that State agencies will:

- ☐ a. be able to absorb these additional costs within their existing budgets and resources.
- ☒ b. request supplemental funding by means of "Budget Change Proposals" for the 1991-92, OR SUBSEQUENT YEARS fiscal year.

☐ 2. Savings of approximately $ _____ annually.

☐ 3. No fiscal impact exists because this regulation does not affect any State agency or program.

☐ 4. Other

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS (Indicate appropriate boxes 1 through 4 and complete if necessary)

☐ 1. Additional expenditures of approximately $ _____ annually.

☐ 2. Savings of approximately $ _____ annually.

☒ 3. No fiscal impact exists because this regulation does not affect any federally funded State program or agency.

☐ 4. Other

SIGNATURE	TITLE	DATE
James M. Baetge	Executive Director	2/26/91
AGENCY SECRETARY APPROVAL/CONCURRENCE: John T Doyle		DATE: 3-1-91
DEPARTMENT OF FINANCE APPROVAL/CONCURRENCE: PROGRAM BUDGET MANAGER - DOF		DATE: 4-25-91

*Cost to upgrade single walled tanks with secondary containment as required by statutes [Health and Safety Code Section 25292(d)].

Dave
7/22

Revised JULY 1991

FISCAL IMPACT

In 1985 the State Board promulgated regulations that became effective on August 13, 1985. These regulations were based on the provisions of the original Underground Storage Tank Law (Statutes of 1983, Chapter 1046) as well as the 1984 amendments, which were within the scope of the Notice of Proposed Rulemaking published by the State Board in August 1984. Since 1984 Chapter 6.7 has been amended a total of 17 times and the U.S. Environmental Protection Agency promulgated new UST regulations. The proposed amendments are intended to bring State UST regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code.

The proposed amendments to the underground storage tank regulations also include a number of minor changes made for clarification purposes only. These are editorial changes (rewording, renumbering, or relettering) and are not intended to alter the substance of the regulations.

The major fiscal impact from the amended regulations arises from the requirement that all underground storage tanks installed on or before January 1, 1984 shall be upgraded or replaced by December 22, 1998. Amended regulations also prohibit manual tank gauging as non-visual monitoring after December 22, 1998 for underground storage tanks with capacity of 1,001 gallons or greater, therefore, these tanks shall be equipped with Tank Level Monitors. This fiscal impact statement analyzes the impact on State agencies, local agencies and school districts who own underground storage tanks. All these agencies are subject to compliance with these regulations and need to anticipate the required funding for the implementation.

Fiscal Impact on State Government Agencies

The fiscal impact on state government stems mainly from the cost to upgrade UST in accordance with both State [Section 25292(d) of the Health and Safety Code] and Federal (Section 40 CFR 280.21) statutes. Therefore, the tank upgrade requirements in the State regulations are not arbitrary but carry out the mandate set forth in the statutes. These tank upgrade requirements have to be met by December 22, 1998 as set forth in both the State and Federal statutes. Most state agencies plan to upgrade or replace a certain number of tanks each year starting with older tanks first and/or with other high risk tanks. Many of the agencies have started evaluating their tanks and also installing Tank Level Monitors.

There is an estimated total of 1,706 active tanks owned by State Government. Office of State Architect (OSA) handles all the state owned tanks and performs the required tasks to maintain the state underground storage tanks in compliance with the regulations. The Department of Transportation (Cal Trans), Food & Agriculture, Fish & Game, and California Highway Patrol obtain and manage funding for their underground storage tank programs and have OSA assist

in planning and implementing the program tasks, and they transfer funding to OSA for implementation as needed. However, all the other agency tank programs are managed and funded by OSA. Table I shows a listing of the State agencies which own underground storage tanks and will be affected by the amended upgrade requirement. The Department of Water Resources (DWR) manage, fund, and perform all the tasks for their underground storage tank program, and OSA does not oversee their underground storage tank programs.

The estimated fiscal impact on OSA and the other above mentioned state agencies is summarized in Table 2. The upgrade cost of each tank is assumed to be 25,000 Dollars. This is a rule of thumb industry estimate (It is based on the upgrade cost per tank for a gas station with three 8000 gallon tanks). This cost includes the labor and material cost of installation of the following:

Tank lining
Line Leak Detectors
Splash/spill/overfill prevention system
Cathodic Protection
Tank Level Monitor

The agencies will either upgrade the tanks, or replace them with above ground tanks or new underground storage tanks. The estimated number of tank upgrades or replacements is presented in Table 2 and it is based on the communications with the underground storage tank program coordinators of Cal Trans, Food & Agriculture Dept., Fish & Game, California Highway Patrol (CHP), Department of Water Resources (DWR), and Office of State Architect (OSA). Generally the tanks with capacities exceeding 1000 gallons will be upgraded if they are not very old, and the older tanks will be replaced by new underground storage tanks. However, Many of the tanks which have capacities of 1000 gallons or less will be replaced by above ground tanks if permitted to do so by the Air Resources Board and local fire prevention agencies.

For the purposes of this fiscal impact analysis it is assumed that removal of an existing tank and replacement by an above ground storage tank will cost $20,000, and replacement by an underground storage tank on the average will cost $45,000. It is also anticipated that OSA will require two additional PY's for implementation of this program. It is assumed that the State cost for the PY will be $100,000/PY. These costs are estimated average values and have not been adjusted for rate of inflation. The actual costs over the eight year period may go up or down respectively due to cost of living increase or competitive pricing.

Based on all the above stated assumptions it is estimated that total of 72% of state tanks will be upgraded, 14.5% will be replaced by above ground tanks, and 13.5% will be replaced by underground Storage tanks. The total cost to bring State owned tanks in compliance will be $47,480,000. The cost per year ($47,480,000/8) will be 5,935,000 Dollars.

The state agencies which will be impacted by the upgrade requirement costs were contacted regarding their funding status for compliance. Cal Trans

indicated that they have not included this as an item in their 1992-1993 budget which they are preparing. However, Cal Trans plans to use the 5.6 million Dollars maintenance program budget which they received in 1985-1986 to finance the tank upgrades or replacements. The estimated total program cost for Cal Trans based on our assumptions will be $14,750,000, which will result in an annual expenditure of approximately 1.8 million Dollars.

The Department of Food & Agriculture based on our assumptions will have to spend a total of $600,000 to bring their underground storage tanks in compliance with the upgrade requirements, which will result in an annual expenditure of approximately $75,000.

The Department of Fish & Game indicated they do not have the funds required for this program, they have initiated an evaluation of their tanks and will attempt to close as many tanks as they can. However, Department of Fish & Game has closed many of their tanks recently and it is uncertain that they will be able to close more tanks. For the purposes of our cost estimate it is assumed the tanks will either be upgraded or replaced and the estimated total program cost for Fish & Game based on our assumptions will be $695,000, which will result in an annual expenditure of approximately $87,000.

California Highway Patrol (CHP) indicated their 1989-1990 tank removal budget has $300,000 remaining with OSA and they plan to use this until there is need for additional funding. They have already initiated a tank evaluation program and installation of tank level monitors which will be done by OSA. The estimated total program cost for CHP tanks based on our assumptions will be $3,110,000, which will result in an annual expenditure of approximately $390,000.

Office of State Architect indicated that their 1990-1991 BCP has budget for tank level monitor installations. They have also sent in a request to the Department of General Services for $1,000,000 and 1 PY. They have not submitted any funding request for this to the Department of Finance. The estimated total program cost for OSA based on our assumptions will be $27,115,000, which will result in an annual expenditure of approximately $3,390,000.

The Department of Water Resources will have an estimated total expenditure of $1,120,000 to upgrade or replace their tanks, which will result in an annual expenditure of approximately $140,000.

Fiscal Impact on Local Agencies and School Districts

Local agencies and school districts have the authority to levy service charges, fees, or assessments sufficient to pay for administering the program or level of service mandated by the regulations or else it is recognized, that a local agency or school district may pursue any remedies to obtain reimbursement available to it under Chapter 3 (commencing with Section 2201) of Part 4 of Division 1 of the Revenue and Taxation Code. Costs incurred by

local governments to comply with the subject regulations are incidental costs not involving increased level of government service.

Section 25 of AB 1030 (Statutes of 1989) states: "No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution for those costs which may be incurred by a local agency or school district because this act creates a new crime or infraction, changes the definition of a crime or infraction, or eliminates a crime or infraction, or because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act."

There is a total of 6,345 underground storage tanks identified as belonging to state and local agencies and school districts as estimated in SWEEPS data base (December 1990). Therefore, we will estimate that 4,639 (6,345-1,706) tanks are owned by local agencies and school districts. The number of tanks which need to be upgraded or replaced is calculated based on the same total percentage ratios obtained (Table 2) for state government owned tank upgrades and replacements. Total of 3,340 (4,639 X .72) tanks will be upgraded, total of 673 (4,639 X .145) tanks will be replaced by above ground tanks, and the remaining 626 will be replaced by new underground tanks. The unit costs are assumed to be the same as the ones estimated for state tanks (Table 2). Total upgrade requirement cost for local agencies and school districts will add up to 125,130,000 Dollars (3,340 X $25,000 + 673 X $20,000 + 626 X $45,000). The upgrade cost per year ($125,130,000/8) will be approximately $15,640,000 for the local agencies and school districts.

Fiscal Impact on Federal Funding of State Programs

There is no federal mandate that the State implement an UST program. However, the federal government is required to implement an UST program under federal statutes in those states that do not have a program as stringent as the federal program. California does implement an UST program under State statutes. The state elected to amend the statutes to bring state requirements up to federal standards to eliminate the need and resulting confusion of two UST programs.

The benefit to the federal government to have a state program is that the federal government will not have to spend money implementing a federal program. The federal government plans to continue to provide funds as an incentive for the state to implement a state UST program under state statutes that satisfies the federal program. There is no requirement that the federal government give money to the state. Therefore, there will be no fiscal impact on federal funding of state programs since the regulations do not affect any federally funded state program.

Fiscal Impact Statement, Form 399, for proposed amendments to Chapter 16, Underground Storage Tank regulations is attached.

Table 1. List of State Agencies which own Underground Storage Tanks

I. Agencies which administer their underground storage tank program, and use OSA for planning consultation and implementation:

Agency	No. of Tanks
Cal Trans	501
Food & Agriculture Department	23
Department of Fish & Game	27
California Highway Patrol	92

II. Agencies which OSA administers their underground storage tank programs:

Agency	No of Tanks
Air Resources Board	2
Conservation Corp.	2
Department of Corrections	58
California State University System	152
Developmental Services	37
Dept. of Education	5
Emergency Services	5
Cal Expo & State Fair	3
Dept. of Forestry	384
General Services	30
Health Services	1
Lands Commission	3
Mental Health	11
Military	57
Motor vehicles	1
Parks & recreation	113
University of California System	162
Veterans Affairs	4
Youth Authority	33

III. Agencies which administer and fund their own underground storage tank program:

Department of Water Resources	45

Source of Data: Office of State Architect (OSA)data base.

Table 2. Tank Upgrade Estimated Cost Impact on State Agencies

State Agency	No. Tanks	No. of Upgrades	No. replaced Above ground	No. replaced Underground	Total Cost $
Cal Trans	501	351	31	119	14,750,000
Food & Ag.	23	8	11	4	600,000
Fish & Game	27	16	8	3	695,000
CHP	92	49	2	41	3,110,000
OSA	1,063	801	196	66	27,115,000
DWR	45	32	7	6	1,210,000
Total	1,751	1,257	255	239	47,480,000

Annual State Agencies Cost: ($47,480,000/8) $5,935,000

Overall percent of state tanks to be upgraded: 72%
Overall percent of state tanks to be replaced by above ground tanks: 14.5%
Overall percent of state tanks to be replaced by underground tanks: 13.5%

Assumed Unit Costs:

Tank upgrade cost,	$25,000/Tank
Replacement by above ground tank	$20,000/Tank
Replacement by Underground tank	$45,000/Tank

Cost estimate for OSA includes two additional PY's required by OSA for program implementation and is estimated to cost $100,000/PY.

The cost estimates are not indexed, and are not inclusive of any site investigation or remediation which may be necessary for sites with leaking underground storage tanks.

e. Revised Informative Digest, July 1991

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

Revised JULY 1991

INFORMATIVE DIGEST

Chapter 6.7 of Division 20 of Health and Safety Code (H & S Code) established a program for regulation of underground storage tanks. Chapter 6.7 prohibits any person from owning or operating an underground storage tank used for the storage of hazardous substances without a permit issued to the owner by a designated local agency and provides for implementation of construction and monitoring standards. The State Board developed regulations to implement the standards for this permit program pursuant to Health and Safety Code Section 25299.3. These regulations became effective August 13, 1985. The proposed amendments will clarify existing requirements and make the regulations consistent with Chapter 6.7 as amended since 1983 and no less stringent than the Federal underground storage tank regulations.

Chapter 6.7 of the H & S Code was amended by Chapters 1038, 1537, and 1584 of the statutes of 1984 (AB 3565, AB 3447, and AB 3781, respectively); by Chapters 1228 and 1535 of the Statutes of 1985 (AB 2239 and AB 1755, respectively) which took effect in October 1985 as urgency measures; by Chapters 935, 1025, and 1390 of the Statutes of 1986 (AB 3570, SB 1818, and AB 2920, respectively); by Chapters 1317 and 1372 of the Statutes of 1987 (AB 853 and AB 1413, respectively); by Chapters 296, 876, and 1431 of the Statutes of 1988 (AB 1571, AB 190, AB 4613); by Chapters 432, 1397, and 1442 of the Statutes of 1989 (AB 2031, AB 1030, SB 299); and by Chapter 1574 of the Statutes of 1990 (AB 3560).

The proposed amendments to the underground storage tank regulations include a number of minor changes made for clarification purposes only. These are editorial changes (rewording, renumbering, or relettering) and do not alter the substance of the regulations

The following is a summary of all other proposed changes:

Article 1 (formerly Article 2)

Existing regulations define terms used within the regulations. Proposed regulations delete the definitions of "double walled tank" and "Nationally recognized independent testing organization" and add the following new definitions:

"coating experts", "corrosion specialist", "cathodic protection tester", "emergency containment", "farm tank", "heating oil tank", "holiday", "hydraulic lift tank", "independent testing organization", "independent third party", "integral secondary containment", "interstitial space", "liquid asphalt tank", "liquefied petroleum gas tank", "manufacturer", "non-volumetric test", "petroleum", "pipeline leak detector", "probability of detection", "probability of false alarm", "qualitative release detection method", "quantitative release detection method",

"release detection method", "septic tank", "sump/pit/pond/or lagoon", "tank integrity test", "volumetric test", "voluntary consensus standards", "wastewater treatment tank".

Proposed regulations modify the definition of "substantially beneath the surface of ground" to the following:
"Substantially beneath the surface of the ground" means that at least 10 percent of the underground tank system volume, including the volume of any connected piping, is below the ground surface or enclosed below earthen materials.

Article 2 (formerly Article 1)

Proposed regulations state that the term "underground storage tank" does nc include any of the following:

a farm tank, a heating oil tank, hydraulic lift tanks with a capacity less than 110 gallon, a liquefied petroleum gas tank, a liquid asphalt tank, a septic tank, a sump/pit/pond or lagoon, a wastewater treatmen tank except which is part of an underground storage tank system, a pipeline located in a refinery or in an oil field, tanks and catch basins designed for storm water collection, tanks containing radioact material that are regulated by other federal, state or local agency (such as; spent fuel pools, radioactive waste storage tanks, and simi tanks), an emergency containment tank kept emptied to receive acciden spills and approved for such use by the appropriate local agency, dru located in basements which contain 55 gallons or less of material.

Existing regulations do not specifically address change in use of the tank: which are excluded from underground tank regulations by virtue of use. Proposed regulations require the owner of any tank which is excluded from regulation as an underground storage tank by virtue of its use, within 120 days after change in or discontinuance of the use which provided the exclusion; apply for and promptly obtain a valid operating permit or close tank in accordance with Article 7 of the regulations. Resumption of a use which justifies an exclusion from regulation within 120 days after change discontinuation of that use will reactivate the exclusion.

Article 3

Existing regulations of this article provide construction and monitoring standards for new underground storage tanks. Under the proposed regulatic underground storage tanks installed between January 1, 1984 and the effec date of these amendments may be deemed to be in compliance with the stand in this article if they were installed in accordance with Federal and Sta standards that existed at the time of installation.

Existing regulations require that primary containment to be product-tight all secondary containment systems to be constructed of sufficient thickne density, and composition to prevent structural weakening as a result of contact with any released hazardous substances. Proposed amendments

additionally require the material of construction for secondary containment to be corrosion resistant. Also, effective on July 1, 1991 for underground storage tanks and January 1, 1992 for piping, all primary containment including any integral secondary containment system shall be designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components of the tank system, effective July 1, 1992 shall bear an approval from an independent testing organization. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the minimum information listed in section 2631(b).

Existing regulations state that the wear plate (striker plate) centered under all accessible openings required for all new underground storage tanks shall be at least 9 inches wide and have an area of 1 square-foot or be equal to the area of the accessible opening or guide tube, whichever is larger. Proposed regulations require the width of the plate to be at least 8 inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. Proposed regulations also amend the minimum steel wear plate thickness requirement from 0.053 inches to 1/8 inches, and do not require wear plates over 1/4 of an inch to be rolled.

Existing regulations require the volume of secondary containment systems open to rainfall to be able to accommodate a 24-hour, 100-year storm. Proposed regulations change the requirement to a 24-hour, 25-year storm capacity.

Existing regulations specify standards for membrane liners utilized in secondary containment systems. Proposed regulations require the membrane liners to be certified by an independent testing organization and free of any primary nutrients or food-like substances attractive to rodents. Membrane liner material property requirements are amended and summarized in Table 3.1 of section 2631 of proposed regulations. An important amendment is increase of period of immersion in the stored hazardous substance which is required for some membrane tests, from 24 hours to 30 days. The new standards specified in Table 3.1 for membrane liners are set based on limits used in industry. In addition to the standards, the common industry wide acceptable test methods for evaluation of the material properties are listed in Table 3.1.

Proposed regulations require underground piping with secondary containment to be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system,

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with Section 2643(g) of amended regulations

(3) Other monitoring methods may be used if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section.

Existing regulations require all monitoring programs to include a response plan which demonstrates , that any unauthorized release will be removed from the secondary containment system within the shortest possible time and no longer than the time consistent with the ability of the secondary containment system to contain the hazardous substance. Proposed regulations restrict the permissible response time to maximum of 30 days.

Proposed regulations require a monitoring program to include the preventive maintenance schedule, prepared in accordance with manufacturer's instructions, for the monitoring equipment. A monitoring program shall also include a description of the training needed for the operation of both the tank system and the monitoring equipment.

Proposed regulations require that all underground piping, if in direct contact with backfill material, to be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection shall meet the amended requirements and schedule specified in paragraph 2635(a)(2) of the proposed regulations. Underground piping shall meet the amended requirements of the proposed section 2635(b).

Existing regulations state that if required by the local agency, the underground storage tanks shall be equipped with overflow prevention system elements of which are specified in paragraph 2635(b)(8) of the existing regulations. Proposed regulations delete this paragraph and require that all underground storage tanks to be equipped with a spill container and an overfill prevention system that meets the amended specifications in proposed section 2635(c).

Proposed regulations require owners of new underground storage tanks to certify that the installation of underground storage tanks and piping meets the requirements of proposed section 2635(e).

Article 4

Existing regulations describe general applicability of this article in Section 2640 and the eight specific monitoring alternatives at Section 2641 of this article. Proposed regulations have replaced these alternatives with performance standards to give more flexibility to tank owners. The new Section 2640 requires that the owners of existing underground storage tanks to comply with provisions of this article during any of the following periods:

(1) Any operating period, including any period that the tank is empty prior to planned input of additional hazardous substance;
(2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted;
(3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to Section 2671(b), for a temporary closure period.

Amended Section 2641 requires owners of existing underground storage tanks to implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to Section 25281.5 of the Health and Safety code or is exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in Section 2635(b)(7) of this chapter.

Proposed regulations in Section 2641 list the factors which local agencies shall consider for approving a proposed monitoring program. If an approved monitoring program is not promptly obtained, the owner of the tank shall repair or close the tank. All equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calendar year) for operability or running condition. Written records shall be maintained as required in Section 2712 of Article 10 of this chapter.

Existing regulations specify the underground storage tank testing requirements in Section 2643. Proposed regulations have deleted this section and the new section 2643 includes the amended requirements and performance standards for non-visual monitoring/quantitative release detection methods for underground storage tanks (2643 c), pressurized piping (2643 d), and suction piping (2643 e). Examples of the release detection methods that may be used to meet the performance requirements of this section are presented in Appendix IV of this chapter.

Proposed regulations require that each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, and each qualitative release detection method to have an independent third party certification stating that it complies with the performance standards of Section 2643 or 2644. Evaluation procedure for this certification is included in paragraph 2643(g) and Appendix V of this chapter.

Proposed regulations of Section 2643(h) require the underground storage tank owner to notify the local agency 48 hours prior to conducting any tank integrity test. However, the agency may waive the 48 hour requirement.

Existing regulations describe soil testing requirements in Section 2645. The proposed regulations have restated the same requirements in the proposed Section 2649(f).

Proposed Section 2645 state the amended manual tank gauging and testing requirements. Manual tank gauging as part of non-visual monitoring can only be used for existing underground storage tanks with total system capacity of 2000 gallons or less and, which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year. Manual tank gauging shall not be used on tanks with secondary containment and after December 22, 1998 can not be used for tanks with a capacity of 1,001 gallons or greater.

Proposed regulations require 36 hour period of gauging instead of the existing 7 day period. It is also required that no inputs shall occur within the 12 hour period preceding the gauging period.

Proposed regulations require all underground storage tank level measuring devices to be capable of measuring the level over the full range of the tank's height to the nearest one-eight of an inch.

Existing regulations allow the use of inventory reconciliation method only for motor vehicle fuel underground storage tanks. Proposed regulations in Section 2646 amend the inventory reconciliation requirements. After January 1, 1993 inventory reconciliation, and any other leak detection methods that utilize manual stick readings, shall not be used for monitoring of existing motor vehicle fuel underground storage tanks, where the existing groundwater level or the highest anticipated ground water level is less than 20 feet below the bottom of the tank, and it will be disallowed in all other areas after December 22, 1998.

Proposed regulations amend the existing required daily inventory reconciliation to a monthly schedule and require inventory reconciliation statements to be submitted annually instead of the current quarterly schedule. Monthly inventory reconciliation is calculated based on daily variations in inventory as specified in Section 2646(i). Monthly variations exceeding a variation of 1.0 percent of the monthly delivery plus 130 gallons must be investigated in accordance with requirements of Section 2646(k) of proposed regulations. These amendments require the owner or operator to notify the local agency within 24 hours of completing any inventory reconciliation which exceeds the allowable variation and also to review the inventory records for the preceding 30 days and determine if a calculation error has caused the apparent excessive variation.

Proposed regulations delete the present vadose zone monitoring requirements from Section 2646 and provide the amended requirements in Section 2647. The vadose zone monitoring shall not be used as the sole release detection method of a non-visual monitoring alternative for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water, including intermittent perched ground water, is less than ten feet below the bottom of the tank.

Proposed regulations state that the level of background contamination in the excavation zone and surrounding soils shall not interfere with the vadose zone monitoring method used to detect releases from the underground storage tank. The device shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system.

Existing regulations provide ground water monitoring requirements in Section 2647. Proposed regulations amend this requirements and move it to the proposed Section 2648. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where

permissible, as the sole release detection method. Amended conditions under which ground water monitoring may be used as the sole release detection method of non-visual monitoring, required number of wells, and frequency of sampling of these wells are amended in the proposed Section 2648 in paragraphs (b),(c), and (d).

Existing regulations require that if the ground water monitoring is the sole release detection method, then the ground water level or the highest anticipated ground water level, including intermittent perched ground water to be less than 30 feet from the ground surface. Proposed regulations have changed this 30 feet to 20 feet.

Existing regulations require that the well casings be factory perforated to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface, whichever is the lowest point above the highest anticipated groundwater level. Proposed regulations amend this by requiring perforation to be either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation.

Existing regulations require filter packs to extend at least two feet above the top of the perforated zone. Proposed regulations amend exclude the cases where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones.

Existing regulations require all ground water monitoring wells to be appropriately developed until the discharge water contains less than 10 ppm settleable solids. Proposed regulations require that 72 or more hours following well construction, all ground water monitoring wells to be adequately developed and equilibrium to be established prior to any water sampling.

Existing regulations require bentonite grout for sealing the borings. Proposed regulations amend this by just requiring that an approved grout to be used. Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction (bulletins 74-81 and 74-91). Compliance with these standards is needed to protect the quality of water used or which may be used for any beneficial use (Section 13800 of Water Code).

Proposed regulations state that the owner or operator of underground storage tank at a minimum, shall provide a written detailed description, of the procedures and techniques of sample collection, sample preservation and shipment, analytical procedures, and chain-of-custody control. Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative and qualitative results.

Article 5

Proposed regulations require the owner or operator of an underground storage tank to report to the Board any unauthorized release described in Section 25295 of The Health and Safety Code, and any of the following conditions:

1) Any unauthorized release which the owner or operator is unable to clean up or which is still under investigation within eight hours of detection;
2) The discovery of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;
3) Unusual operating conditions observed by the owner or operator unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced;
4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

Existing regulations require reportable releases to be reported within 24 hours after the release has been, or should have been, detected. Proposed regulations require unauthorized release to be reported to the local agency within 24 hours of detection and also require the owner or operator to investigate the condition, take immediate measures to stop the release, or remove the stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services. The owner or operator of a underground storage tank with an unauthorized release, within 5 working days shall submit to the local agency a full written report which includes all the known information listed in proposed section 2652 (c).

Proposed regulations adopt the following three new sections into the existing regulations:

Proposed Section 2653; owners or operators required to conduct initial abatement actions shall comply with the requirements of this section.

Proposed Section 2654; owners or operators required to conduct initial site characterization actions shall comply with the requirements of this section.

Proposed Section 2655; at sites where investigations indicate the presence of free product, owners or operators shall comply with the requirements of this section and remove free product to the maximum extent practicable as determined by the local agency while continuing, as necessary, any actions required under Sections 2652 through 2654 of this article. The owner or operator is required

to prepare and submit a free product report to the local agency, within 45 days of confirming a release.

Article 6

Existing regulations establish the procedure for making a one-time repair of an underground storage tank containing motor vehicle fuel not under pressure by an interior lining process. Proposed regulations also allow lining as a preventive measure under conditions specified in section 2660. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release.

Existing regulations require the special inspector of steel underground storage tank to sound any perforations or areas showing corrosion pitting with a brass ballpeen hammer to enlarge the perforation or break through a potentially thin steel area. Proposed regulations delete this testing and require the entire tank interior to be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness.

Existing regulations require that the repair material and lining process be listed or certified one year after the regulations become effective or one year after a listing or certification procedure is available, whichever is later. Proposed regulations limit the conditional wording to require listing or certification effective 1 year after the effective data of these regulations.

Proposed regulations impose additional underground storage tank and piping repair requirements, the details of which are listed in proposed Section 2661 in paragraphs (i) through (p).

Proposed regulations of Section 2662 require all underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, to be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

Proposed amendments require owners of motor vehicle fuel tanks made of steel to provide both interior lining and exterior cathodic protection on or before December 22, 1998. The upgraded tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter in accordance with the standards of paragraph 2662(b)(3).

Proposed regulations of Section 2663 require all existing underground storage tanks, regardless of date of installation, by December 22, 1998 to have an overfill prevention system and a spill container which meets the requirements specified in Section 2635(c). The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. Owners or operators are required to monitor transfer operation constantly, ensure that the volume available in the tank is greater than the

volume of product to be transferred to the tank, and to use care to prevent releases due to spills or overfills do not occur.

Proposed regulations of Section 2664 require all underground pressurized piping containing hazardous substances, other than those which contain motor vehicle fuel, to be retrofitted with secondary containment meeting the requirements specified in Section 2635(b) by December 22, 1998. All underground pressurized piping shall also be equipped with automatic line leak detectors no later than December 22, 1990. All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment no later than December 1998, unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other corrosion resistant materials compatible with stored products.

Proposed regulations require all underground pressurized piping and secondary containment to be tightness tested after installation and annually thereafter in accordance with the requirements specified in Section 2635(b)(4) and (5).

Article 7

Proposed amendments decrease the temporary closure period of two years as stated in existing regulations to one year. At the end of one year period, the local agency may approve an extension of the temporary closure for a maximum additional period of up to one year if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Underground storage tank owner or operator, at least thirty days prior to closure, shall submit a proposal to the local agency describing how the owner intends to comply with temporary or permanent closure requirements.

Proposed regulations state that the owner of the underground storage tank may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in proposed Sections 2662, 2663, and 2664 of Article 6.

Under the existing regulations if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release the pre-closure proposal submittal is waived. Proposed regulations delete this language.

Proposed regulations state that the underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements of this article. However hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to Section 13304 of the Water Code and any other applicable law or regulations.

Existing regulations require removal of all residual liquid, solids, or sludges of underground storage tanks subject to permanent closure. Proposed

regulations specifically require these removed substances to be handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.
Existing regulation require the owners of underground storage tanks subject to permanent closure where the tanks are not removed to place a notice in the deed to the property. Proposed regulations delete this requirement.

Existing regulations require the owner of an underground storage tank being closed pursuant to section 2672 to demonstrate to the satisfaction of the local agency that no authorized release has occurred. Under the existing regulations this demonstration shall be based on the on-going leak detection monitoring, ground water monitoring, or soil sampling. Proposed regulations require this demonstration to be only based on soil sample analysis and/or water analysis if water is present in the excavation.

Existing regulations require if the underground tank or any portion thereof is removed, soil samples to be taken from the soils immediately beneath the removed portions. Proposed regulations specify that these samples shall be taken, a minimum of two feet into native material at each end of the tank in accordance with proposed Section 2649. Existing requirement of separate samples needed for every 200 square-feet for underground storage tanks have been deleted. However, separate samples are to be taken for each 20 lineal-feet of trench for piping.

Existing regulations require that if the underground storage tank or any portion thereof is not removed, soil sampling pursuant to existing Section 2645 to be implemented, if feasible. Proposed regulations change this requirement by stating that at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank. Proposed regulations also require that if the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified down gradient direction.

Existing regulations require soil samples, taken in compliance with tank closure regulations, to be analyzed for all constituents, of the previously stored hazardous substances and their breakdown or transformation products. Proposed regulations authorize the local agency to waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

Article 8

Existing regulations specify the information to be included in a categorical variance application. Proposed regulations in addition require the applicant to include written comments or recommendations from impacted local agencies. Existing regulations require the board to complete any documents necessary to satisfy the California Environmental Quality Act (Division 13, commencing

with Section 21000, of the Public Resources Code). Proposed regulations delete these requirements since they are duplicative.

Existing regulations require the Board to hold at least 2 public hearings on requests for categorical variances in different areas of the state within 180 days of receipt of a complete variance application. Proposed regulations delete this language and require the Board to hold at least two hearings as set forth in Section 25299.4 of the Health and Safety Code.

Existing regulations state that upon close of a hearing regarding a categorical variance, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days, to allow any interested person to file additional exhibits, reports, or affidavits. Proposed regulations delete this limitation because the requirement is not mandated by the statute.

Existing regulations require the applicant to submit a complete construction and monitoring plan to the local agency, at least 60 days prior to applying for a site specific variance. Proposed regulations delete the specified time frame for such submittal.

Existing regulations specify the minimum information to be included in an application for a site-specific variance. Proposed regulations in addition to these items require names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request to be provided in the site-specific variance application.

Existing regulations require the Regional Board to hold a hearing on the proposed alternative for which site-specific variance is requested within 60 days after receiving a complete variance application. However, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code for local agencies to join in the application. Proposed regulations delete this language and require the Regional Board to hold a hearing on the proposed variance as specified in Section 25299.4(c) of the Health and Safety Code.

Existing regulations require the Regional Board to consider the local agency's recommendations in addition to the completeness and accuracy of information provided by the applicant in rendering its decision. Proposed regulations delete this language since it is duplicative of requirements included in Section 25299.3 of Health and Safety Code.

Existing regulations require the Regional Board to notify the applicant and the local agency of its decision regarding site-specific variance application. Proposed regulations require the Regional Board to notify the Board as well.

Article 9

Proposed regulations do not change the requirements of existing regulations in this section.

Article 10

Proposed regulations require a permit application to contain a description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection in addition to the existing required information. Permit application also shall include information showing compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

Proposed regulations require the local agency to provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Existing regulations describe the underground storage tank owner's responsibility in reporting to the local agency within 30 days any changes in permit conditions such as monitoring procedures, the storage of new hazardous substances, and underground storage tank repair or replacement. Proposed regulations delete this language which duplicates requirements now included in section 25286 of Health and Safety Code, which requires the permittee to notify the local agency of any changes in usage of the underground storage tank within a time period specified by the local agency.

Existing regulations require written records of all monitoring performed to be maintained on-site for a period of at least three years from the date the monitoring was performed and be available to the local agency, Regional Board, or Board upon demand during any site inspection. Proposed regulations change the language to require written records of all monitoring and maintenance performed to be maintained on-site or off-site at a readily available location if approved by the local agency for a period of at least three years. These records must be made available, upon request within 36 hours, to the local agency or the Board.

Existing regulations require the underground storage tank owner to apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit. Exiting regulations also give the local agencies 18 months, after establishing a program implementing provisions of this chapter, to issue permits for all existing underground storage tanks. Proposed regulations delete these time frames and also require the permits to show the state underground storage tank identification number(s) for which the permit was issued.

Existing regulations require the permit holder within 30 days of receiving an inspection report from either the local agency or the special inspector, to file a plan and time schedule to implement any required modifications to the underground storage tank or to the monitoring system. Proposed regulations further restrict permit holders response time by requiring implementation of the corrections specified in the inspection report within thirty days of its receipt.

Proposed regulations add a new paragraph to permitting conditions of existing section 2712, authorizing the local agency to take appropriate enforcement

action pursuant to Section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring requirements specified in Article 3 or 4 of this chapter or the reporting requirements specified in Article 6 of this chapter.

Existing regulations require local agencies to notify the Board of any changes in permits or any unauthorized release on the Board's annual report forms or other methods determined by the Board by March 1 of each year. Proposed regulations delete this and require local agencies to transmit the updated unauthorized release report to the Regional Board overseeing the cleanup, on a quarterly schedule established by the Board.

f. Finding of Emergency

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

UNDERGROUND STORAGE TANK REGULATIONS

FINDING OF EMERGENCY

Section 25299.7(c) of the Health and Safety Code directs the State Board to adopt emergency regulations to implement the underground storage tank program. Section 11346.1(b) of the Government Code states that any finding of emergency shall include a written statement containing the information requested in Section 11346.5(a) of the Government Code and a description of the specific facts showing the need for immediate action.

The following numbered statements correspond to and provide the information requested in Section 11346.5(a):

(2) "Reference to the authority under which the regulation is proposed and the reference to the particular code sections or other provisions of law which are being implemented, interpreted, or made specific."

The California Underground Storage Tank regulations were originally adopted by the State Water Resources Control Board (State Board) in 1985 in conformance with Chapter 6.7 of the Health and Safety Code. Subsequently, the California Legislature enacted legislation amending Chapter 6.7 to bring Underground Storage Tank laws into a "no less Stringent than" statutes with the Federal Underground Storage Tank regulations. The proposed amendments bring State Underground Storage Tank regulations into conformance with the Federal regulations as required by Section 25299.7(c) of the Health and Safety Code. Section 25299.7(c) directs the State Board to adopt these regulations as emergency regulations.

(3) "An informative digest containing a concise and clear summary of existing laws and regulations..."

The revised Informative Digest is attached.

(4) "Any other matters as are prescribed by statute applicable to the specific state agency or to any specific regulation or class of regulations".

None.

(5) "Determination as whether the regulation imposes a mandate on local agencies or school districts and, if so, whether the mandate requires state reimbursement pursuant to Part 7 (commencing with Section 17500) of Division 4.)"

Local agencies and school districts have the authority to levy service charges, fees, or assessments sufficient to pay for

administering the program or level of service mandated by the regulations or else it is recognized, that a local agency or school district may pursue any remedies to obtain reimbursement available to it under Chapter 3 (commencing with Section 2201) of Part 4 of Division 1 of the Revenue and Taxation Code. Costs incurred by local governments to comply with the subject regulations are incidental costs not involving increased level of government service.

Section 25 of AB 1030 (Statutes of 1989) states: "No reimbursement is required by the act pursuant to Section 6 of Article XIII B of the California Constitution for those costs which may be incurred by a local agency or school district because this act creates a new crime or infraction, changes the definition of a crime or infraction, or eliminates a crime or infraction, or because the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act."

(6) "An estimate, prepared in accordance with instructions adopted by the Department of Finance, of the cost or savings to any state agency, the cost to any local agency or school district that is required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4, other non-discretionary cost or savings imposed on local agencies, and the cost or savings in federal funding to the state."

Standard Form 399 titled Fiscal Impact Statement (Regulations and Orders) and revised text of Fiscal Impact are attached.

The proposed regulations must be adopted immediately to protect the environment from substances hazardous to the public health and safety, which are stored prior to use or disposal in thousands of underground locations in the state. Underground tanks used for the storage of hazardous substances and motor vehicle fuel are potential sources of contamination of the ground and underlying aquifers, and may pose other dangers to public health and the environment. In several known cases, underground storage has resulted in undetected and uncontrolled releases of hazardous substances into the ground. These releases have contaminated public drinking water supplies and created a potential treat to the public health and to the waters of the state. The protection of the public from releases of hazardous substances is an issue of statewide concern.

Proposed Underground Storage Tank regulations require use of extensive monitoring and automatic leak detection systems on underground tank and piping system. The monitoring requirements in conjunction with required tank integrity testing and secondary containment systems for underground storage tanks will provide additional protection from undetected leaks which may contaminate the environment.

Section 25299.7 (c) of the Health and Safety Code advises that adoption of these regulations is an emergency and shall be considered by the Office of

Administrative Law as necessary for the immediate preservation of the public peace, health and safety, and general welfare.

g. Text of Amended Regulations

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, Underground Storage Tank Regulations

PROPOSED AMENDMENTS. (NEW TEXT IS UNDERLINED; DELETED TEXT IS CROSSED OUT.)

CALIFORNIA CODE OF REGULATIONS

TITLE 23 WATERS

DIVISION 3 WATER RESOURCES CONTROL BOARD

~~SUB~~CHAPTER 16 UNDERGROUND STORAGE TANK REGULATIONS

Article ~~2~~ 1. Definition of Terms

~~2620~~

2610. Definitions/Applicability of Definitions

(a) Unless the context clearly requires otherwise, the ~~T~~terms used in this ~~SUB~~chapter shall have the definitions provided by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code, or by ~~S~~section ~~2621~~ 2611 of this article.

(b) Except as otherwise specifically provided herein, ~~T~~the following terms are defined in ~~the appropriate~~ section 25281 of Chapter 6.7 of Division 20 of the Health and Safety Code:

Automatic Line Leak Detector

Board

Department

Facility

Federal Act

Hazardous Substance

Local Agency

Operator

Owner

Person

Pipe

Primary Containment

Product-Tight

Release

Secondary Containment

Single-Walled

Special Inspector

Storage/Store

SWEEPS

Tank

Tank Integrity Test

Tank Tester

Unauthorized Release

Underground Storage Tank

Underground Tank System/Tank System

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25282, 25291

2621

2611. Additional Definitions

Unless the context clearly requires otherwise, the following definitions shall apply to terms used in this subchapter.

"Coatings expert" means a person who, by reason of thorough training, knowledge and experience in the coating of metal surfaces, is qualified to engage in the practice of internal tank lining inspections. This person must be independent of any lining manufacturer or applicator and have no financial interest in the tank or tanks being monitored.

"Continuous monitoring" means a system using automatic equipment which routinely performs the required monitoring on a periodic or cyclic basis throughout each day.

"Corrosion specialist" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on metal underground storage tanks and associated piping. The term includes only persons who have been certified as being qualified by the National Association of Corrosion Engineers or registered professional engineers who have certification or licensing that requires education and experience in corrosion control of underground storage tanks and associated piping.

"Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. The term includes only persons who have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

"Double walled tank" means a container with two complete shells which provide both primary and secondary containment.///The outer shell must provide structural support and must be constructed primarily of non-earthen materials including, but not limited to, concrete, steel, and plastic.

"Emergency containment" means a containment system for accidental spills which are infrequent and unpredictable.

"Existing underground storage tank" means any underground storage tank that is not a new underground storage tank was installed prior to January 1, 1984. The term includes any underground storage tank which has contained a hazardous substance in the past and, as of January 1, 1984, had the physical capability of being used again (i.e., it had not been removed or completely filled with an inert solid).

"Farm tank" means any one or combination of tanks located on a farm that holds no more than 1,100 gallons of motor vehicle fuel which is used primarily for agricultural purposes and is not held for resale.

"First ground water" means the uppermost saturated horizon encountered in a bore hole.

"Ground water" means subsurface water which will flow into a well.

"Heating oil tank" means a tank located on a farm or at a personal residence which holds no more than 1,100 gallons of home heating oil which is used consumptively at the premises where the tank is located.

"Holiday" when used with respect to underground storage tank coating or clading means a pinhole or void in a protective coating or clading.

"Hydraulic lift tank" means an underground storage tank which holds hydraulic fluid to operate lifts, elevators, and other similar equipment.

"Independent testing organization" means an organization which tests products or systems for compliance with voluntary consensus standards. To be acceptable as an independent testing organization, the organization must not be owned or controlled by any client, industrial organization, or any other person or institution with a financial interest in the product or system being tested. For an organization to certify, list, or label products or systems in compliance with voluntary consensus standards, it shall maintain formal periodic inspections of production of products or systems to ensure that a listed, certified or labeled product or system continues to meet the appropriate standards.

"Independent third party" means independent testing organizations, consulting firms, test laboratories, not-for-profit research organizations and educational institutions with no financial interest in the matters under consideration. An independent third party must not be owned or controlled by any client, industrial organization, or any other institution with a financial interest in the matter under consideration.

"Integral secondary containment" means a secondary containment system manufactured as part of the underground storage tank.

"Interstitial space" means the space between the primary and secondary containment systems.

"Liquid asphalt tank" means an underground storage tank which contains steam-refined asphalts.

"Liquefied petroleum gas tank" means an underground storage tank which contains normal butane, isobutane, propane, or butylene (including isomers) or mixtures composed predominantly thereof in liquid or gaseous state having a vapor pressure in excess of 40 pounds per square inch absolute at a temperature of 100 degrees of Fahrenheit.

"Manufacturer" means any business which produces any item discussed in these regulations.

"Membrane liner" means any membrane sheet material used in a secondary containment system. A membrane liner shall be compatible with the substance stored.

"Membrane liner fabricator" means any company which converts a membrane liner into a system for secondary containment.

"Membrane manufacturer" means any company which processes the constituent polymers into membrane sheeting from which the membrane liner is fabricated into a system for secondary containment.

"Motor vehicle" means a self-propelled device by which any person or property may be propelled, moved, or drawn.

"Motor vehicle fuel tank" means an underground storage tank that contains a product which is intended to be used primarily to fuel motor vehicles or fuel an engines.

"Nationally recognized independent testing organization" means any one of the following organizations or other organizations approved by the Board:

American National Standards Institute (ANSI)
American Society of Mechanical Engineers (ASME)
American Society for Testing and Materials (ASTM)
National Association for Corrosion Engineers (NACE)
National Sanitation Foundation (NSF)
Underwriters Laboratories (UL)
Underwriters Laboratories of Canada, Inc. (ULC)

"New underground storage tank" means any underground storage tank subject to this subchapter which is installed after the effective date of this subchapter as amended August 9, 1991, or which complies with the requirements of Article 3 of this subchapter as amended August 9, 1991; or which was installed after January 1, 1984, and before the effective date of this subchapter as amended August 9, 1991, pursuant to a permit issued by the local agency implementing the provisions of Chapter 6.7 of Division 20 of the Health and Safety Code relating to new underground storage tanks.

"Non-volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and consideration of circumstances and physical phenomena internal or external to the tank.

"Perennial ground water" means ground water that is present throughout the year.

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

"Pipeline leak detector" means a continuous monitoring system for underground piping capable of detecting at any pressure a leak rate equivalent to a specified leak rate and pressure with a probability of detection of 95 percent or greater and a probability of false alarm of 5 percent or less.

"Probability of detection" means the likelihood, expressed as a percentage, that a test method will correctly identify a leaking underground storage tank.

"Probability of false alarm" means the likelihood, expressed as a percentage, that a test method will incorrectly identify a "tight" tank as a leaking underground storage tank.

"Qualitative release detection method" means a method which detects the presence of a hazardous substance or suitable tracer outside the underground storage tank being tested.

"Quantitative release detection method" means a method which determines the integrity of an underground storage tank by measuring a release rate or by determining if a release exceeds a specific rate.

"Release detection method" means a method used to determine whether a release of a hazardous substance has occurred from an underground tank system into the environment or into the interstitial space between an underground tank system and its secondary containment.

"Septic tank" means an underground storage tank designed and used to receive and process biological waste and sewage.

"Substantially beneath the surface of the ground" means that at least 10 percent of the underground ~~storage~~ tank system volume, including the volume of any connected piping, is below the ground surface or enclosed below earthen materials.

"Sump," "pit," "pond," or "lagoon" means a depression in the ground which lacks independent structural integrity and depends on surrounding earthen material for structural support of fluid containment.

"Tank integrity test" means a test method that can ascertain the physical integrity of an underground storage tank. The term includes only test methods which are able to detect a leak of 0.1 gph with a probability of detection of at least 95 percent and a probability of false alarm of 5 percent or less. The test method may be either volumetric or non-volumetric in nature. A leak rate is reported using a volumetric test method, whereas, a non-volumetric test method reports whether or not a substance or physical phenomenon is detected which may indicate the presence of a leak.

"Unauthorized release" as defined in Chapter 6.7 of Division 20 of the Health and Safety Code does not include intentional withdrawals of hazardous substances for the purpose of legitimate sale, use, or disposal.

"Volumetric test" means a tank integrity test method that ascertains the physical integrity of an underground storage tank through review and comparison of tank volume.

"Voluntary consensus standards" means standards that shall be developed after all persons with a direct and material interest have had a right to express a viewpoint and, if dissatisfied, to appeal at any point (a partial list of the organizations that adopt voluntary consensus standards are shown in Appendix I, Table B).

"Wastewater treatment tank" means an underground storage tank located inside a public or private wastewater treatment facility. The term includes untreated wastewater holding tanks, oil water separators, clarifiers, sludge holding tanks, filtration tanks, and clarified water tanks that do not continuously contain hazardous substances.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25282, 25283

Code of Federal Regulations, Title 40, Part 280.10 (40 CFR 280.10)

Article 1/ 2 General Provisions

2620/

2620. General Intent, Content, Applicability and Implementation

(a) The regulations in this subchapter are intended to protect waters of the State from discharges of hazardous substances from underground storage tanks. These regulations establish construction standards for new underground storage tanks; establish separate monitoring standards for new and existing underground storage tanks; establish uniform standards for unauthorized release reporting, and for repair, upgrade, and closure of underground storage tanks; requirements/ and specify variance request procedures.

(b) Persons who own Owners and operators of one or more underground storage tanks storing hazardous substances shall comply with these regulations except as otherwise specifically provided herein. In Section 2611 of this article/ If the operator of the underground storage tank is not the owner, then the owner shall enter into a written contract with the operator requiring the operator to/ monitor the underground storage tank; maintain appropriate records; and implement reporting procedures as required by any applicable the permit/. and properly close the underground storage tank as required by the permit/ Both the owner and operator are responsible for assuring that the underground tank system is repaired or upgraded in accordance with Article 6, or closed in accordance with Article 7, of these regulations as appropriate.

(c) Counties shall implement the regulations in this chapter within both the incorporated and unincorporated areas of the county through the issuance of underground storage tank operating permits to underground storage tank owners. A city may, by ordinance, assume the responsibility for implementing the provisions of this chapter within its boundaries in accordance with section 25283 of the Health and Safety Code. Local agencies shall issue an operating permit for each underground storage tank, for several underground storage tanks, or for each facility, as appropriate, within their jurisdiction.

(d) All owners and operators of underground storage tanks subject to these regulations must comply with the construction and monitoring standards of Article 3 (new underground storage tanks) or the monitoring standards of Article 4 (existing underground storage tanks) of this subchapter. However, owners of existing underground storage tanks which meet the construction and monitoring standards of Article 3 of this subchapter may be issued operating permits pursuant to the standards of Article 3 in lieu of the standards of Article 4 of this subchapter. In addition, all owners and/or operators of underground storage tanks subject to this subchapter must comply with the release reporting requirements of Article 5 of this subchapter, the repair and upgrade requirements of Article 6 of this subchapter, the closure

requirements of Article 7 of this subchapter, and the underground storage tank operating permit application requirements of Article 10 of this subchapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25283, 25284, 25299.1, 25299.3, 40 CFR 280

2621.

2621. Exemptions

(a) The owners of term "underground storage tank" that does not include any of the following conditions shall be exempt from the provisions of this subchapter:

(1) A farm tank.

(2) A heating oil tank.

(3) Hydraulic lift tanks with a capacity of less than 110 gallons.

(4) A liquefied petroleum gas tank.

(5) A liquid asphalt tank.

(6) A septic tank.

(7) A sump, pit, pond, or lagoon.

(8) A wastewater treatment tank except a tank which is part of an underground storage tank system.

(9) A pipeline located in a refinery or in an oil field.

(10) Tanks and catch basins designed for storm water collection.

(11) Tanks containing radioactive material that are regulated by other federal, state or local agency such as spent fuel pools, radioactive waste storage tanks, and similar tanks.

(12) An emergency containment tank kept emptied to receive accidental spills and approved for such use by the appropriate local agency.

(13) Drums located in basements which contain 55 gallons or less of material.

(I) Underground storage tanks that are located within the jurisdictions of counties or cities where the county or city had prior to January 1, 1984, adopted an ordinance which, at a minimum, implements the requirements of Subchapter 6.7 of Division 20 of the Health and Safety Code pertaining to construction and monitoring standards for new and existing underground storage tanks provided that

(A) The ordinance, as it may be amended, continues to meet, at a minimum, the requirements of Chapter 6.7 of Division 20 of the Health and Safety Code, and

(B) The county or city issues permits for underground storage tanks pursuant to the ordinance.

(2)

(14) Underground storage tanks containing hazardous wastes as defined in Section 25316 of the Health and Safety Code if the person owning or operating the underground storage tank has been issued a hazardous waste facilities permit for the underground storage tank by the Department of Health Services pursuant to Section 25200 of the Health and Safety Code or granted interim status under Section 25200.5 of the Health and Safety Code.

(b) Sumps which are a part of a monitoring system as required under Article 3 of this subchapter are considered part of the secondary containment or leak detection system of the primary containment and are required to meet the appropriate construction criteria.

(c) The owner of a farm or heating oil tank or any other tank which is excluded from regulation as an underground storage tank by virtue of its use shall within 120 days after change in or discontinuance of the use which provided the exclusion:

(1) Apply for and promptly obtain a valid operating permit; or

(2) Close the tank in accordance with Article 7 of these regulations.

Resumption of a use which justifies an exclusion from regulation within 120 days after change or discontinuation of the use which provided the exclusion will reactivate the exclusion.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25299.1

40 CFR 280.10, 280.12

Article 3. New Underground Storage Tank Construction and Monitoring Standards

2630. General Applicability of Article

~~(a) This article contains statewide minimum standards for the construction/ installation/ and monitoring of new underground storage tanks that contain hazardous substances/~~

(a) The standards in this article apply to owners of new underground storage tanks. Underground storage tanks installed between January 1, 1984 and the effective date of these amendments, August 9, 1991, may be deemed to be in compliance with the standards in this article if they were installed in accordance with Federal and State standards that existed at the time of installation. However, the requirements in Article 6 must be complied with if applicable.

(b) Sections 2631 and 2632 of this article specify construction and monitoring standards for all new underground storage tanks. New underground storage tanks that only store motor vehicle fuels may be constructed and monitored pursuant to the standards specified in sections 2633 and 2634 of this article in lieu of those specified in sections 2631 and 2632 of this article./ ~~respectively/~~ However, if the construction standards in section 2633 of this article are used, then the monitoring standards of section 2634 of this article ~~must~~ shall also be used.

(c) All new underground storage tanks, piping, and secondary containment systems ~~must~~ shall comply with section 2635 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25291

40 CFR 280.20

2631. Construction Standards for New Underground Storage Tanks

(a) ~~Primary and secondary levels of containment shall be required for~~ All new underground storage tanks including associated piping used for the storage of hazardous substances shall be required to have primary and secondary levels of containment. Secondary containment can be manufactured as an integral part of the primary containment or it can be constructed as a separate containment system. ~~as defined in Article 2 of this Subchapter.~~

(b) All primary containment including any integral secondary containment system, shall be ~~product-tight~~ designed and constructed according to an industry code or engineering standard approved by an independent testing organization for the applicable use. All other components such as special accessories, fittings, coatings or linings, monitoring systems and level controls used to form the underground storage tank system shall bear an approval from an independent testing organization. This requirement shall become effective on July 1, 1991 for underground storage tanks, January 1, 1992 for piping, and July 1, 1992 for all other components. The exterior surface of underground storage tanks shall bear a marking, code stamp, or label showing the following minimum information:

(1) Engineering standard used;

(2) Nominal diameter in feet;

(3) Nominal capacity in gallons;

(4) Degree of Secondary Containment;

(5) Useable capacity in gallons;

(6) Design pressure in psig;

(7) Maximum operating temperature in degrees Fahrenheit;

(8) Construction materials;

(9) Year manufactured; and

(10) Manufacturer.

(c) A primary containment system with or without an integral secondary containment system shall have wear plates (striker plates) installed, center to center, below all accessible openings. The plates shall be made of steel or other appropriate material if steel is not compatible with the hazardous substance stored. The width of the plate shall be at least eight inches on each side, or shall be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 1/8 inch and those made of other materials shall be of sufficient thickness to provide equivalent protection. The plate, if under 1/4 inch thick, shall be rolled to the contours of the underground storage tank and all plates shall be bonded or tack welded in place.

~~(c)~~

(d) A secondary containment system such as vaults, shall be designed and constructed according to an engineering specification approved by a state licensed engineer or according to a nationally recognized industry code or engineering standard. The engineering specification shall include the construction procedures. ~~All secondary containers shall be constructed of~~

(b) Materials of used to construct the secondary containment system shall have sufficient thickness, density, and corrosion resistance composition to prevent structural weakening or damage to of the secondary containment system as a result of contact with any released hazardous substance. and shall be capable of containing any unauthorized release of the hazardous substance stored within the primary container(s) for at least the maximum anticipated period of time required to allow detection and removal of the unauthorized release. The following requirements apply to all secondary containment systems:

(d) If a hazardous substance has come into contact with the secondary container and either primary container is replaced by a new primary container, the owner shall demonstrate to the satisfaction of the local agency that the requirements of Subsection (c) of this section are still achievable or replace the secondary container.

(e)

(1) The secondary containment system shall be constructed have the ability to provide at least contain the following volumes:

(1)

(A) At least 100 percent of the usable capacity of volume of the primary containment system where only one primary container is within the secondary containment system.

(2)

(B) In the case of multiple primary containers within a single secondary containment system, the secondary containment system shall be large enough to contain 150 percent of the volume of the

largest primary container ~~placed in~~ within it, or 10 percent of the aggregate internal volume of all primary containers ~~in~~ within the secondary containe~~r~~ment~~/~~ system, whichever is greater. When all primary containers are completely enclosed within the secondary containment system, the restrictions of this subsection do not apply.

~~(f)~~

(2) If the secondary containe~~r~~ment system is open to rainfall, ~~the~~ it shall be constructed ~~able~~ to accommodate the volume of precipitation which could enter the secondary containe~~r~~ment system during a 24-hour, 100 25-year storm in addition to the volume ~~of hazardous substances stored~~ required in subsection ~~(e)~~ (d)(1) of this section.

~~(g)~~

(3) If backfill material is placed in the secondary containment system, ~~T~~the volumetric requirements for the pore space ~~of a granular material placed in the secondary containment as backfill for the primary containment~~ shall be equal to ~~or greater than~~ the requiredment in subsection ~~203.1(e)~~ (d)(1) of this section. The available pore space in the secondary containe~~r~~ment system backfill shall be determined using ~~appropriate~~ standard engineering methods and safety factors. ~~and shall consider~~ The specific retention and specific yield of the backfill material, the location of any ~~the~~ primary container within the secondary containe~~r~~ment, and the proposed method of operation for the secondary containe~~r~~ment system shall be considered in determining the available pore space.

~~(h)~~

(4) The secondary containe~~r~~ment system shall be equipped with a collection system to accumulate, temporarily store, and permit removal of any

precipitation/ subsurface infiltration, or hazardous substance released from the primary container liquid within the system.

(5) The floor of the secondary containment system shall be constructed on a firm base and, if necessary for monitoring, shall be sloped to a collection sump. One or more access casings shall be installed in the sump and sized to allow removal of collected liquid. The access casing shall extend to the ground surface, be perforated in the region of the sump, and be covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism. If this access casing is within a secured facility/ the requirements for a locked cap may be waived by the local agency. The casing shall have sufficient thickness be thick enough to withstand all anticipated stresses with appropriate engineering safety factors and constructed of materials that will not be structurally weakened by the stored hazardous substance and will not donate, capture, or mask constituents for which analyses will be made.

(6) Systems for Secondary containment systems utilizing membrane liners shall be certified by an independent testing organization. A membrane liner shall not contain any primary nutrients or food-like substances attractive to rodents and must meet the requirements in Table 3.1 after 30-day immersion in the stored hazardous substance meet the following requirements.

Table 3.1

Standards for Membrane Liners

	Property	Some Acceptable Test Methods (See Appendix I, Table A)		Requirement
		Unsupported Liners	Supported Liners	
(A)	Tensile strength	ASTM D638	ASTM D751	
	Tensile strength at yield		Procedure B (Cut Strip Method)	>300 lbs/in of width
	Tensile strength at break			>200 lbs/in of width
(B)	Permeability	ASTM E96	ASTM E96	<0.65 gram/meter^2-hr = Parent material
(C)	Seam strength	ASTM D413	ASTM D751	
(D)	Solubility	ASTM D471	ASTM D471	<0.10% by weight
(E)	Puncture		FTMS 101C Method 2031	350 lbs.
		FTMS 101C Method 2065		80 lbs.
(F)	Tear		ASTM D751	125 lbs.
		ASTM D1004 DIEC		50 lbs.

(1) The membrane liner shall have a permeability factor of 0.25 cubic feet per square foot per 24 hours or less.// Such permeability shall constitute the maximum rate of transport over time of the hazardous substance proposed for storage.// Permeability shall be evaluated according to accepted engineering practices for materials testing.// Some acceptable methods for determining the permeability are provided in Appendix I of this subchapter.

(2) The membrane liner shall be considered to have satisfied the requirements of Subsection 2631(c) of this section only if the liner material meets the following standards.// The material properties specified in these standards shall be determined using accepted engineering practices for materials testing.// Some acceptable methods for determining these properties are provided in Appendix I of this subchapter.

(A) The volume swell after a 24-hour period of immersion in the stored hazardous substance shall not exceed 3 percent of the original liner membrane material thickness.

(B) The maximum change in elongation// of the liner membrane material at break after 24 hours of immersion in the stored hazardous substance shall not exceed 2 percent of the original elongation.

(C) The liner membrane material shore A hardness (brittleness) after 24 hours of immersion in the hazardous substance shall be within 5 percent of the original hardness/

(D) For a containment test/ the rate of transport through the liner membrane material of the hazardous substance after a period of 24 hours shall not exceed 6 percent by weight of the hazardous substance being tested///The liquid height for the test shall be no greater than that expected in actual site conditions/

(E) The rate of solubility of the liner membrane material in the hazardous substance for a period of 24 hours shall not exceed 01 percent by weight of the section of liner being tested/

(B) The liner seam strength shall be equal to the tensile strength of the parent material when tested in accordance with accepted engineering practices for materials testing///Some acceptable methods for determining the liner seam strength are provided in Appendix I of this subchapter/

(K)

(7) The A membrane liner, if used, shall be installed under the direct supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator.

(7)

(8) The excavation base and walls for the synthetic a membrane liner shall be prepared to the membrane liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects or protrusions.

(m)

(e) Laminated, coated, or clad materials shall be considered a single walled and shall do not be considered to fulfill the requirements of both primary and secondary containment.

(n)

(f) Double-walled Underground storage tanks with integral secondary containment systems, which satisfy the construction standards of Section subsection 2631(b) of this section, and (c) of this article shall be considered to fulfill the volumetric requirements for secondary containment specified in Section 2631(c) subsection (d)(1) of this article of this section.

(o) The design of double walled underground storage tanks shall allow for monitoring of the annular space.

(p) Installing the annular space of a double-walled underground storage tank as a monitoring method shall not be allowed unless a structure is placed or otherwise required around underground storage tank are located directly under the monitoring opening.

(g) The double walled Underground storage tanks with secondary containment systems shall be so designed and installed that any loss of hazardous substance from the primary containment will drain to a specific location within the annular space, as required, to be detected by an interstitial monitoring device or method.

(h) An underground storage tank which is designed with an integral secondary containment system shall provide 100 percent secondary containment unless it is equipped with the overfill prevention system in accordance with section 2635(c)(2)(C) of this Article. In this case the top portion of the tank, no greater than two feet wide along the length of the tank, may be single-walled.

(i) Any special access openings, fitting, coating, or lining not inherent within the initial design of the primary container or double/walled underground storage tank shall be approved by a nationally recognized independent testing organization or a demonstration of integrity with the primary container or double/walled underground storage tank shall be required by the local agency.

(j) All primary containers and double/walled underground storage tanks subject to flotation shall be weighted or anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25291
40 CFR 280.20

2632. Monitoring Requirements, Initial Responses, and Response Plan for New Underground Storage Tanks

(a) This section is applicable only to those underground storage tanks constructed pursuant to the standards of section 2631 of this article.

(b) The owners or operators of underground storage tanks subject to this section shall implement a monitoring program that is approved by the local agency and specified in the underground storage tank operating permit. The program shall utilize one or more of the methods interstitial space monitoring as described in subsection (c) of this section and shall address include the items listed in subsection (d) (e) of this section.

(c) Monitoring of the interstitial space between the primary and secondary containment shall utilize either visual monitoring of the primary containment system as described in subsection (c) (1) of this subsection or one or more of the methods listed in subsection (c) (2) of this subsection.

(1) A program which relies on the visual monitoring of the primary containment system shall incorporate all of the following:

(A) Provisions that All exterior surfaces of the underground storage tanks and the surface of the floor directly beneath the underground storage tanks shall be capable of being monitored by direct viewing.

(B) Visual inspections shall be performed daily, except on weekends and recognized state and/or federal holidays/. ~~and~~ Inspections may be more frequent if required by the local agency/ or ~~T~~the local agency may reduce the frequency of visual monitoring at facilities where personnel are not normally present and inputs to and withdrawals from the underground storage tanks are very infrequent. In these instances, the minimum frequency of visual inspection shall be no less than once per week and the inspection schedule shall take into account the minimum anticipated time during which the secondary containment system is capable of containing any unauthorized release and the maximum length of time any hazardous substance released from the primary ~~containment~~ containment system will remain observable on the surface of the secondary containment system. The inspection schedule shall be ~~established~~ such that inspections will occur on a routine basis when the liquid level in the underground storage tanks is at its highest. The inspection frequency shall be ~~selected~~ such that any unauthorized release will remain observable on the exterior of or the surface immediately beneath the underground storage tanks between visual inspections. The evaluation of how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tanks.

(C) The ~~recordation of the~~ liquid level in the underground storage tanks shall be recorded at the time of each inspection.

(D) The observation of any liquid on the exterior of or the surface immediately around or beneath an the underground storage tank being visually monitored shall cause require the owner or operator to undertake implement all of a portion of the following action or actions:/ The applicable actions and their timing shall be based on the site-specific situation/ be intended to determine if the observed liquid constituted an unauthorized release/ and shall be included in the permit/

1. Conduct an appropriate /laboratory or field analysis of the observed liquid. If the liquid is a hazardous substance, the owner or operator shall proceed with the actions indicated in subsections 2. and 3. below.

2. Conduct an appropriate tank integrity test; testing of the underground storage tank/ utilizing the//procedures described in Section 2643 of Article 4 of this subchapter/ and

3. If a leak is confirmed, immediately remove /removal of all hazardous substances from the underground storage tank and the secondary containerment system. /as specified in Subsection (a) of this section/

(2) A program which relies on detecting the hazardous substance in the interstitial space between the primary and secondary container shall utilize one or more of the methods provided in Table 3.12 of this article. The following requirements shall apply when appropriate/:

(A) The interstitial space of the underground storage tank shall be monitored using a continuous monitoring system.

(B) The Ccontinuous monitoring devices system shall be connected to an audible/ and visual alarm system as approved by the local agency.

(B) Manual monitoring shall be performed daily except on weekends and recognized state and/or federal holidays///Manual monitoring may be required on a more frequent basis as specified by the local agency/

(C) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination (i/e// liquid level measurements), the monitoring program shall specify the proposed method(s) for determining the presence or absence of the hazardous substance in the interstitial space if the indirect methods indicate a possible unauthorized release.

(d) Underground piping with secondary containment shall be equipped and monitored as follows:

(1) The secondary containment system shall be equipped with a continuous monitoring system which is connected to an audible and visual alarm system, and

(2) Automatic line leak detectors shall be installed on underground pressurized piping and shall be capable of detecting a three gallon per hour leak rate at 10 psi within 1 hour with a probability of

detection of at least 95 percent and a probability of false alarm no greater than 5 percent. Compliance with these standards shall be certified in accordance with section 2643(g) of these regulations.

(3) Other monitoring methods may be used in lieu of the requirement in subsection 2 above if it is demonstrated to the satisfaction of the local agency that the alternate method is as effective as the methods otherwise required by this section. A continuous monitoring system, in subsection 1 above, which also shuts down the pump in addition to activating the alarm system, satisfies the automatic line leak detector requirement in subsection 2.

~~(d)~~

(e) All monitoring programs shall include the following:

(1) A written routine monitoring procedure which establishes ~~including~~ ~~when~~ ~~appropriate~~:

(A) ~~The~~ The frequency of performing the monitoring method~~/~~;

(B) ~~The~~ The methods and equipment to be used for performing the monitoring~~/~~;

(C) ~~The~~ The location(s) from which where the monitoring will be performed~~/~~;

(D) ~~The~~ The name(s) ~~or~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment~~/~~;

(E) and The reporting format;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(2) A response plan developed by the permit applicant which demonstrates, to the satisfaction of the local agency, that any unauthorized release will be removed from the secondary containment system within the shortest possible time and no longer than the time consistent with the ability of the secondary containment system to contain the hazardous substance, but not more than 30 calendar days. The response plan shall include, but is not limited to, the following:

(A) A description of the proposed methods and equipment to be used for removing and properly disposing of any the hazardous substances, including the location and availability of the required equipment if not permanently on-site, and an equipment maintenance schedule for the equipment located on-site.

(B) The name(s) or and title(s) of the person(s) responsible for authorizing any the work to be performed/ necessary under the response plan.

Table 3.12

Methods of Monitoring for Hazardous Substances in the Secondary Containment Interstitial Space of an Underground Storage Tank System

Condition of the Secondary System [1]	Type of Substance Stored	Liquid Level Indicator [2]	Hazardous Substance Sensor [3]	Vapor Monitor	Pressure or Vacuum Loss Detector [4]
		Methods of Monitoring			
Dry	Volatile	X	X	X	X
Dry	Nonvolatile	X	X		X
Wet	Volatile	X	X	X	X
Wet	Nonvolatile	X	X		X

[1] A "dry" system does not contain liquid within the secondary containment during normal operating conditions while a "wet" system does.

[2] Includes continuously operated mechanical or electronic devices. Manual determinations using mechanical, electronic, or sticky readings or visual determinations to detect the presence of any liquid in dry systems or a change in liquid levels in wet systems.

[3] Includes either qualitative or quantitative determinations of the presence of the hazardous substance.

[4] Primarily used for double-walled underground storage tanks to Detects changes in pressure or vacuum in the interstitial space of an underground storage tank with secondary containment. between primary and secondary container. The use of pressure or vacuum must be approved as part of the primary and secondary container approval by a nationally recognized independent testing organization.

Authority: Health and Safety Code 25299.3, 25299.7
Reference: Health and Safety Code 25281, 25291
40 CFR 280.43

2633. Alternate Construction Requirements for New Motor Vehicle Fuel Underground Storage Tanks

(a) This section specifies alternate construction requirements for new underground storage tanks which only contain motor vehicle fuels. Owners of new underground storage tanks which only contain motor vehicle fuels may comply with this section in lieu of section 2631 of this article. If this section is used in lieu of section 2631 of this article, then the monitoring requirements specified in section 2634 shall be used in lieu of those specified in section 2632 of this article.

(b) Underground storage tanks used for the underground storage of motor vehicle fuel and constructed under this section shall be composed of fiberglass reinforced plastic, cathodically protected steel, or steel clad with fiberglass reinforced plastic. These tanks shall be installed in conjunction with the leak interception and detection system described in subsections (d) through (g) of this section. The primary containment system shall meet the requirements described in sections 2631(b) and 2631(c) of this article.

(c) Underground storage tanks used for the underground storage of motor vehicle fuel that are constructed of materials other than those specified in subsection (b) of this section shall be subject to the requirements of sections 2631 and 2632 of this article.

(d) The permit applicant owner of an underground storage tank shall demonstrate to the satisfaction of the local agency that the leak interception and detection system used achieves the criteria of Section 2631(c) of this article/ is capable of detecting a release before it can escape from the containment system.

(e) The floor of any leak interception and detection system shall be constructed on a firm base and sloped to a collection sump. Methods of construction for the leak interception and detection system for utilizing membrane liners shall comply with the requirement of section 2631(d)(6) of this article. Be considered to have satisfied the//requirements of 2631(c) if/ and only if/ the liner material meets the//following standards/

(1) The membrane liner material shall have the permeability factor specified in Subsection 2631(d)(1) of this article as tested against//ASTM Reference Fuel B/

(2) The membrane liner material shall be suitable for containment of the motor vehicle fuel in that such material shall meet the criteria set forth in Subsections 2631(d)(2)(A) through (E) of this article as tested against the motor vehicle fuel to be stored considering its variability or against ASTM Reference Fuel B/

(3) The membrane liner shall meet the requirements set forth in Subsection 2631(d)(3) of this article/

(4) The liner has been installed under the supervision of a representative of the membrane liner fabricator or a contractor certified by such fabricator;

(5) The excavation base and walls which will come into contact with the synthetic liner shall be prepared to the liner fabricator's specifications and shall be firm, smooth, and free of any sharp objects and protrusions;

(f) Access casings shall be installed in the collection sump of any secondary containment system with backfill in the interstitial space. The access casing shall be:

(1) Designed and installed to allow the liquid to flow into the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

(3) Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donate, capture, nor mask constituents for which analyses will be made;

(4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

(5) Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system;

(6) Extended to the ground surface and covered with a locked waterproof cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water, accidental damage, unauthorized access, and vandalism. A facility with locked gates will satisfy the requirements for protection against unauthorized access and vandalism; and

(7) Capable of meeting requirements of local well permitting agencies.

~~(f)~~

(g) The leak interception and detection system ~~and the response plan~~ shall ~~prevent~~ prevent the contact of any leaked hazardous substance with ground water. At a minimum, the leak interception and detection system shall be above the highest anticipated ground water elevation. Proof that the leak interception and detection system ~~and response plan~~ will protect ground water must be demonstrated by the ~~permit applicant~~ owner of the underground storage tank to the satisfaction of the local agency. ~~The requirement for this demonstration may be waived by the local agency for underground storage tanks that comply with the requirements of Subsections (e), (f), and (g) of Section 2631 of this article. The demonstration shall at a minimum consider the following:~~ In determining whether the leak interception and detection system will adequately protect ground water, the local agency shall consider, at a minimum, the following:

(1) The containment volume of the leak interception and detection system;

(2) The maximum leak which could go undetected under the monitoring method required in section 2634 of this article and the maximum period during which the leak will go undetected;

(3) The frequency and accuracy of the proposed method of monitoring the leak interception and detection system;

(4) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(5) The nature of the unsaturated soils under the leak interception and detection system and their ability to absorb contaminants or to allow movement of contaminants;

(6) The effect of any precipitation or subsurface infiltration on the movement of any leak of hazardous substance and the available volume of the leak interception and detection system; and

(7) The nature and timing of the response plan required by section 2634 of this article to clean up any hazardous substances which have been discharged from the primary container.

(g) Pressurized piping systems that are connected to an underground storage tank that is be constructed pursuant to the requirements of this section/and monitored pursuant to the requirements of Section 2634 of this article are exempt from the leak interception and detection system requirements of this section/ provided that the pressurized piping system is monitored according to the appropriate section of Chapter 6/7 of Division 20 of the Health and Safety Code/

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25291

40 CFR 280.20

2634. Monitoring and Response Plan Standards for New Motor Vehicle Fuel Underground Storage Tanks Constructed Pursuant to Section 2633

(a) Motor vehicle fuel underground storage tanks used for the storage of motor vehicle fuel and constructed pursuant to the standards of section 2633 of this article shall be monitored according to the requirements of the//appropriate sections of Chapter 6/7 of Division 20 of the Health and Safety Code///In addition/ as follows:

(1) Monitoring of tThe leak interception and detection system shall be monitored pursuant to subsections (b)/ (c)/ and (d) of this section/;

(2) The motor vehicle fuel inventory shall be reconciled according to the performance requirements in section 2646; and

(3) All underground pressurized piping shall be tested in accordance with the requirements of section 2635(b) and monitored in accordance with the requirements of section 2632(d).

(b) The floor of the leak interception and detection system shall be constructed on a firm base and sloped to a collection sump.

(c) Access casing(s) shall be installed in the collection sump.///The access casing shall be:

(1) Capable of allowing any liquid that may be moving along the upper surface of the leak interception and detection system to enter the casing;

(2) Sized to allow efficient removal of collected liquid and to withstand all anticipated applied stresses using appropriate engineering safety factors;

(3) Constructed of materials that will not be structurally weakened by the stored hazardous substances nor donate, capture, nor mask constituents for which analyses will be made;

(4) Screened along the entire vertical zone of permeable material which may be installed between the primary container and the leak interception and detection system;

(5) Capable of precluding leakage of any hazardous substance from the casing to areas outside of the leak interception and detection system; and

(6) Extended to the ground surface and covered with a locked watertight cap or enclosed in a surface security structure that will protect the access casing(s) from entry of surface water/ accidental damage/ unauthorized access/ and vandalism///A secure facility will satisfy the requirements for protection against unauthorized access and vandalism/

(d)

(b) Monitoring of programs for the leak interception and detection system shall incorporate all of the following meet the following requirements:

(1) The use of a leak interception and detection system shall detect any unauthorized release of the motor vehicle fuel collected utilizing one or more of the monitoring methods for volatile hazardous substances provided in Table 3.2 of this article. The following requirements shall apply as appropriate:

(A) cContinuous monitoring device systems shall be connected to an audible/ and visual alarm system approved by the local agency. or

(B) mManual monitoring, if used, shall be performed daily, except on weekends and recognized state and/or federal holidays, but no less than once in any 72 hour period. Manual Mmonitoring may be required on a more frequently basis as specified by the local agency. Based on an assessment of the available volume of the leak interception and detection system and the accuracy of the proposed monitoring method///Approved methods of monitoring the leak interception and detection system include liquid level sensors/ hazardous substance sensors/ and vapor monitors as specified for volatile hazardous substances in Table 3.2 of this article/

(2) A written routine monitoring procedure ~~which includes~~ shall be prepared and shall establish:

(A) ~~t~~The frequency of performing the monitoring ~~method~~;

(B) ~~t~~The methods and equipment to be used for performing the monitoring~~,~~;

(C) ~~t~~The location(s) ~~from~~ ~~which~~ where the monitoring will be performed~~,~~;

(D) ~~t~~The name(s) ~~of~~ and title(s) of the person(s) responsible for performing the monitoring and/or maintaining the equipment~~,~~ ~~and~~;

(E) ~~t~~The reporting format~~,~~;

(F) The preventive maintenance schedule for the monitoring equipment. The maintenance schedule shall be in accordance with the manufacturer's instructions; and

(G) A description of the training needed for the operation of both the tank system and the monitoring equipment.

(3) For methods of monitoring where the presence of the hazardous substance is not determined directly, for example, where liquid level measurements are used as the basis for determination (i.e., liquid level measurements), the monitoring program shall specify the proposed

method(s) for determining the presence or absence of the hazardous substance if the indirect method indicates the possible unauthorized release of the motor vehicle fuel.

(c) A response plan for an unauthorized release shall be developed prior to the underground tank system being put into service. For any leak interception and detection system which does not meet the volumetric requirements of Subsection 2631(e), (f), and (g) of this Article. For those underground storage tanks If the leak interception and detection systems that meets the volumetric requirement of subsection 2631(e),(f) and (g) (d) of this article, the local agency shall require the owner to develop a plan pursuant to the requirements of subsection 2632(d)(e)(2) of this article. If the leak interception and detection system does not meet the volumetric requirements of subsection 2631(d), the response plan shall consider the following:

(1) The volume of the leak interception and detection system in relation to the volume of the primary container;

(2) The amount of time the leak interception and detection system must provide containment in relation to the period of time between detection of an unauthorized release and cleanup of the leaked materials;

(3) The depth from the bottom of the leak interception and detection system to the highest anticipated level of ground water;

(4) The nature of the unsaturated soils under the leak interception and detection system and their ability to absorb contaminants or to allow vertical movement of contaminants; and

(5) The methods and scheduling for removing all of the hazardous substances which may have been discharged from the primary container and are located in the unsaturated soils between the primary container and ground water, including the leak interception and detection system sump.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, ~~25299.1~~ 25291, 25292

40 CFR 280.41

2635. General Construction Standards Installation and Testing Requirements for New Underground Storage Tanks and Piping

(a) The following subsections shall apply to all primary and secondary containers including leak interception and detection systems.

(a)

(b) Primary containers and double walled underground storage tanks secondary containment systems shall be designed, and constructed, tested, and certified to comply, as applicable, with all of the following requirements:

(1) Cathodically protected steel underground storage tanks, steel underground storage tanks clad with glass fiberreinforced plastic, and glass fibre plastic underground storage tanks shall be fabricated and designed to standards developed by a nationally recognized independent testing organization or be listed by the testing organization. Applicable standards shall include, but are not limited to, those provided in Appendix I of this subchapter.

(2) Underground storage tanks shall be tested by the manufacturer or an independent testing organization for durability and chemical compatibility with the hazardous substances to be stored using recognized engineering practices for materials testing. Some acceptable methods for determining durability and chemical compatibility with the hazardous substances are provided in Appendix I of this subchapter.

(3) Except for steel underground storage tanks, a wear plate (stylker plate) shall be centered under all accessible openings of the underground storage tank. The plate shall be constructed of steel or, if the steel is not compatible with the hazardous substance stored, a material resistant to the stored hazardous substance.//The width of the plate shall be at least 9 inches wide and have an area of 1 square-foot or be equal to the area of the accessible opening or guide tube, whichever is larger. The thickness of the steel plate shall be at least 0.053 inch (1.35 mm), and those constructed of other materials (as required) shall be of sufficient thickness to provide equivalent protection. The plate shall be rolled to the contours of the underground storage tank and bonded or seam welded in place.

(6)

(1) All underground storage tanks shall be tested, at the factory before being put into service transported, in accordance with the applicable sections of the industry (code or engineering standard under which they were are built. The ASME code stamp or Listing Mark of Underwriters Laboratories, Incorporated, (UL) or any other nationally recognized independent testing organization shall be evidence of compliance with this requirement.//

(4) Single-walled primary containers of steel and double-walled underground storage tanks constructed of steel which are not clad with glass fiber reinforced plastic, shall be protected by a properly installed, maintained, and monitored cathodic protection system.//Selection of the type of protection to be employed shall be based on a certification

listing by a nationally recognized independent testing organization of the judgment of a registered corrosion engineer or a National Association of Corrosion Engineers (NACE) accredited corrosion specialist taking into account the corrosion history of the area///Underground storage tanks with listed corrosion resistant materials, non-metallic glass fiber reinforced plastic coatings, composites, or equivalent systems shall be not initially tested immediately///prior to installation.

The protection system shall be inspected under the direction of a registered corrosion engineer or NACE corrosion specialist at the frequency specified in the certification or in accordance with the schedule prescribed by the the system designer, but no less than semi-annually///Underground storage tanks in a vault and not backfilled are exempted from the requirements of this subsection.

(2) The outer surface of underground storage tanks constructed of steel shall be protected from corrosion as follows, except that primary containment systems installed in a secondary containment system and not backfilled do not need cathodic protection:

(A) Field installed cathodic protection systems shall be designed and certified as adequate by a corrosion specialist. The cathodic protection systems shall be tested under the direction of a cathodic protection tester within six months of installation and at least every three years thereafter. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed in accordance with voluntary consensus standards. Impressed current

cathodic protection systems shall also be inspected to ensure that they are in proper working order not less than every 60 calendar days by a cathodic protection tester.

(B) Underground storage tanks protected with glass fiber reinforced plastic coatings, composites, or equivalent non-metallic exterior coatings or coverings, including coating/sacrificial anode systems, shall be tested at the job site using an electric resistance holiday detector. All holidays detected shall be repaired and checked by a factory authorized repair service prior to tank installation. During and after tank installation, care shall be taken to prevent damage to the protective coating or clading. Preengineered corrosion protection systems with sacrificial anodes shall be checked once every three years in accordance with the manufacturer's instructions.

(7)

(3) Before being installation, covered, enclosed, or placed in use, all the underground storage tanks and piping shall be tested for tightness at the installation site in accordance with the manufacturer's written guidelines. If there are no guidelines, the primary and secondary containment shall be tested for tightness hydrostatically or with air pressure at not less than 3 pounds per square-inch (20.68 k Pa) and not more than 5 pounds per square-inch (34.48 k Pa). In lieu of the above, an equivalent differential pressure test, expressed in inches of mercury vacuum, in the interstitial space of the secondary containment is acceptable. Pressure piping shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system, or

pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch (34.48 kPa) gauge at the highest point of the system.///This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least ten minutes.///In lieu of the above, a test using accepted engineering practices shall be used.///Some acceptable test methods for testing pipelines are provided in Appendix I of this subchapter.///Double-walled underground storage tanks are exempt from the requirements of this section provided that the annular space is monitored using either pressure or vacuum testing. The pressure (or vacuum in the interstitial space) shall be maintained for a minimum of 30 minutes to determine if the tank is tight. If a tank fails the test, as evidenced by soap bubbles, or water droplets, installation shall be suspended until the tank is replaced, remanufactured or repaired by a factory authorized repair service and passes a retest.

(4) All other secondary containment systems shall pass a post-installation test which meets the approval of the local agency.

(5) After being installed but before the underground storage tank is placed in service it shall receive a tank integrity test to ensure that no damage occurred during installation. The tank integrity test is not required if the tank is equipped with an interstitial monitor certified to meet the performance standards of a "tank integrity test," as defined in section 2611, in accordance with section 2643 (g) of these regulations.

(5)

(6) All primary containers and double-walled underground storage tanks shall be installed according to a code of practice developed in accordance with voluntary consensus standards and the manufacturer's written installation instructions. Recommendations or, if no written recommendations exist, best engineering practice. The owner or operator shall certify that the underground storage tank is installed in accordance with the above requirements as required by subsection (e) of this section.

(7) All underground storage tanks subject to flotation shall be anchored using methods specified by the manufacturer or, if none exist, best engineering judgment.

(8) When required by the local agency, all underground storage tanks shall be equipped with an overfill protection system which includes the following elements:

(A) A spill containment basin which surrounds the fill pipe and prevents the inflow of the hazardous substance into the subsurface environment;//A level sensing device that continuously monitors and indicates the liquid level in the underground storage tank and either (B) or (C) of this subsection or both;

(B) An audible/visual alarm system triggered by a liquid level sensor to alert the operator of an impending overfill condition; or

(C) An automatic shut-off device that stops the flow of product being delivered to the underground storage tank when the underground storage tank is full///

(9) The overfill protection system required in Subsection (B)(8) of this section shall be waived for underground storage tanks containing motor vehicle fuels in which a spill catchment basin surrounds the fill pipe and prevents the inflow of the motor vehicle fuel into the subsurface environment and:

(A) Both the fluid level is visually monitored and the filling operation is controlled by the facility operator during filling of the underground storage tank;

(B) The available capacity of the underground storage tank to be filled is determined immediately prior to filling to be at least 10% percent of the volume of the entire tank compartment to be delivered or the volume of the entire tank compartment to be delivered plus 200 gallons, whichever is less, as determined by underground storage tank gauging; or

(C) The hazardous substance being delivered can be metered into the underground storage tank and the available underground storage tank capacity is determined immediately prior to filling;

(b) All underground piping, if in direct contact with backfill material, shall be protected against corrosion. Piping constructed of fiberglass reinforced plastic, steel with cathodic protection, or steel isolated from direct contact with backfill, fulfills this corrosion protection requirement. Cathodic protection must meet the requirements in subsection (a)(2) of this section. Underground piping shall meet all of the following requirements:

(1) All underground primary piping in contact with hazardous substances under normal operating conditions shall be installed inside a secondary containment system which may be a secondary pipe, or a lined trench. All secondary containment systems shall be sloped so that all releases will flow to a collection sump located at the low point of the underground piping.

(2) Primary piping and secondary containment systems shall be installed in accordance with a code of practice developed in accordance with voluntary consensus standards. The owner or operator shall certify that the piping is installed in accordance with the above requirements as required by subsection (e) of this section.

(3) If a lined trench system is used as part of a secondary containment system, it shall be designed and constructed according to a code of practice or engineering standard approved by a state licensed engineer. The following requirements shall also apply:

(A) All trench materials shall be compatible with the substance stored and certified by an independent testing organization for their compatibility or adequacy of the trench design, construction, and application.

(B) The trench shall be covered and shall be capable of supporting any expected vehicular traffic.

(4) All new primary piping and secondary containment systems shall be tested for tightness after the installation in accordance with the manufacturer's guidelines. As a minimum, the primary piping shall be tested for tightness hydrostatically at 150 percent of designed and operating pressure or pneumatically at 110 percent of design pressure. If the calculated test pressure is less than 40 psi, 40 psi shall be used as the test pressure. The pressure shall be maintained for a minimum of 30 minutes and all joints shall be soap tested. A failed test, as evidenced by presence of bubbles, shall require appropriate repairs and a retest. If there are no manufacturer's guidelines, secondary containment systems shall be tested using an applicable method specified in an industry code or engineering standard.

(5) Underground pressurized piping which meets all of the following requirements satisfies the annual tightness test requirement specified in subsection 25291(f) of the Health and Safety Code:

(A) The secondary containment system is equipped with a continuous monitoring system. The leak detection device can be located at the pump sump if the piping slopes back to this point.

(B) A continuous monitoring system is connected to an audible and visual alarm system and the pumping system.

(C) A continuous monitor shuts down the pump and activates the alarm system when a release is detected.

(D) The pumping system shuts down automatically if the continuous monitoring system fails or is disconnected. This requirement does not apply to the emergency generator system if the site is manned.

(6) A secondary containment system is not required for vent piping or tank riser piping provided the primary containment system is equipped with an overfill prevention system meeting the requirements specified in subsections (c)(2)(B)or(C) of this section. Vapor recovery piping is also exempt from the secondary containment requirement if designed not to carry product back to the underground storage tank.

(7) Secondary containment is not required for suction piping if such piping is designed and installed in accordance with the following requirements:

(A) The below-grade piping operates at less than atmospheric pressure (suction);

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) No valves or pumps are installed in the suction line below-grade;

(D) An inspection method is provided which readily demonstrates compliance with subsections (A)-(C) immediately above.

(c) All underground storage tanks shall be equipped with a spill container and an overfill prevention system as follows:

(1) The spill container shall collect any hazardous substances spilled during tank filling operations to prevent the hazardous substance from entering the subsurface environment. The spill container shall meet the following requirements:

(A) The exterior wall must be protected from galvanic corrosion if made of metal.

(B) It must have at least a minimum capacity of five gallons (19 liters).

(C) It must have a spring-loaded drain valve which allows drainage of the collected spill into the primary container.

(2) The overfill prevention system shall not allow for manual override and shall meet one of the following requirements. It must either:

(A) Alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank or triggering an audible and visual alarm; or

(B) Restrict delivery of flow to the tank at least 30 minutes prior to tank overfill, provided the restriction occurs when the tank is filled to no more than 95 percent of capacity, and provide audible alarm sounds at least five minutes prior to overfill; or

(C) Provide positive shut-off of flow to the tank when the tank is filled to no more than 95 percent full.

(3) Owners and operators must use care to prevent releases due to spilling or overfilling. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The local agency may waive the requirement for overfill prevention equipment where the tank inlet exists in an observable area and the spill container is adequate to collect any overfill.

(c)

(d) Secondary containment systems including leak interception and detection systems installed pursuant to section 2633 of this article shall comply with all of the following:

(1) The secondary containment system shall, at a minimum, encompass the area within the system of vertical planes surrounding the exterior of the primary containment unit system. If backfill is placed between the primary and secondary containment systems, then an evaluation shall be made of the maximum lateral spread of a point leak from the primary containment system over the vertical distance between the primary and secondary containment systems. The secondary containment system shall extend an additional distance beyond the vertical planes described above equal to the radius of the lateral spread plus 1 foot.

(2) The secondary containment system must be capable of precluding the inflow of the highest ground water anticipated into the interstitial space during the life of the underground storage tank into the space between the primary and secondary containers.

(3) If the interstitial space between the primary and secondary containers is backfilled, the backfill material shall not preclude the vertical movement of leakage from any part of the primary containment system.

(4) The secondary containment system and any with backfill material between the primary and secondary containers shall be designed and constructed to promote gravity drainage of a an unauthorized leak release of hazardous substances from any part of the primary containment system to the monitoring location(s).

(5) Two or more primary containment systems shall not utilize the same secondary containment system if the primary containment system stores materials that in combination may cause a fire or explosion, or the production of a flammable, toxic, or poisonous gas, or the deterioration of any part of a primary or secondary containment system.

(6) Drainage of liquid from within a secondary containment system shall be controlled in a manner approved by the local agency so as to prevent hazardous materials from being discharged into the environment. The liquid shall be analyzed to determine the presence of any of the hazardous substance(s) stored in the primary containment system prior to initial removal, and monthly thereafter, for any continuous discharge (removal) to determine the appropriate method for final disposal. The liquid shall be sampled and analyzed immediately upon any indication of an unauthorized release from the primary containment system.

(7) For primary containment systems installed completely beneath the ground surface, the original excavation for the secondary containment system shall have a water-tight cover which extends at least 1 foot beyond each boundary of the original excavation. This cover shall be asphalt, reinforced concrete, or equivalent material which is sloped to

drainways leading away from the excavation. Access openings shall be constructed as water-tight as practical. ~~Double-walled underground storage tanks~~ Primary containment systems with integral secondary containment and open vaults are exempt from the requirements of this subsection.

(8) The actual location and orientation of the underground storage tanks and appurtenant piping systems shall be indicated on as-built drawings of the facility. Copies of all drawings, photographs, and plans shall be submitted to the local agency.

(e) Owners or their agents shall certify (see Appendix VI) that the installation of underground storage tanks and piping meets all of the following conditions:

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

(2) The installer has been certified or licensed by the Contractors State License Board;

(3) The underground storage tank, any primary piping, and any secondary containment system, was installed according to applicable voluntary consensus standards and any manufacturer's written installation instructions;

(4) All work listed in the manufacturer's installation checklist has been completed; and

(5) The installation has been inspected and approved by the local agency, or, if required by the local agency, inspected and certified by a registered professional engineer who has education and experience with underground storage tank system installations.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25281, 25299

40 CFR 280.20, 280.40 thru 280.45

Article 4. Existing Underground Storage Tank Monitoring Standards Requirements

2640. General Applicability of Article

(a) All Owners of existing underground storage tanks subject to this subchapter shall implement a visual monitoring or alternative monitoring system that complies with this article and is approved by the local agency by the compliance date in Chapter 6.7 of Division 20 of the Health and Safety Code. A local agency shall not issue a permit unless the monitoring system is capable of determining the containment ability of the underground storage tank and detecting any active or future unauthorized release. If the monitoring technique(s) selected is designed to detect the presence of stored hazardous substance outside of the underground storage tank, then tests must be made to determine if the hazardous substance or any interfering constituents exist in the soil or backfill surrounding the underground storage tank. The failure to implement an approved monitoring system shall be cause for the local agency to require closure of the underground storage tank pursuant to Article 7 of this subchapter.

(b) The objectives of the monitoring program for existing underground storage tanks are to detect unauthorized releases before ground water is affected. Ground water monitoring may be utilized as a primary means of monitoring when the ground water does not have actual or potential beneficial uses.

(c) All owners of existing underground storage tanks subject to this subchapter shall implement visual monitoring as described in Section 2642 of this article for all visible portions of the underground storage tank///If the entire underground storage tank is not susceptible to visual monitoring but a significant portion of the underground storage tank can be visually monitored/ that portion of the underground storage tank shall be monitored visually/ visual monitoring that can only be implemented during a portion of the year shall be utilized during those portions of the year///If visual monitoring cannot be implemented for the entire underground storage tank throughout the entire year/ then one of the monitoring alternatives specified in Section 2641 of this article shall also be implemented///The monitoring alternative shall be operative during those times when visual monitoring is not feasible or for those portions of the underground storage tank which are not susceptible to visual monitoring/

(d) All owners of existing underground storage tanks subject to this subchapter/ who are not able to implement visual monitoring as specified in Section 2642 of this article/ shall implement one of the monitoring alternatives specified in Section 2641 of this article/

(e) The monitoring methods and frequencies specified in each monitoring alternative listed in Section 2641 of this article are minimums///Local agencies/ as a condition of approval of a specific monitoring alternative/ shall to comply with the objectives specified in Subsection (b)/of this section require additional or more frequent monitoring if necessary/ and Subsection (d) of Section 2641 of this article/

(f) Local agencies shall reduce the monitoring frequency for visual monitoring or a monitoring alternative listed in Section 2642 of this article situations where environmental conditions make it impracticable, physically impossible, or life threatening to complete the required monitoring.

(a) The requirements of this article apply to owners of nonexempt existing underground storage tanks.

(b) The requirements of this article apply during the following periods:

(1) Any operating period, including any period that the tank is empty as a result of withdrawal of all stored material prior to the planned input of additional hazardous substances;

(2) Any period in which hazardous substances are stored in the tank, and no filling or withdrawal is conducted; and

(3) Any period between cessation of hazardous material storage and actual completion of closure pursuant to Article 7 of this chapter, unless otherwise specified by the local agency, pursuant to section 2671(b), for a temporary closure period.

(c) This article shall not apply to underground storage tanks that are installed and monitored in accordance with sections 2631 and 2632 or 2633 and 2634 of Article 3 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292/25283/ 25291

40 CFR 280.40 - 280.42

2641/ Monitoring Alternatives

(a) All owners of existing underground storage tanks subject to this subchapter who cannot implement visual monitoring for the entire underground storage tank during all periods of the year shall implement, by the statutory deadline, one of the monitoring alternatives specified in Subsection (c) of this section.

(b) The local agency shall base its review of the proposed monitoring alternative on the specification contained in Subsection (a) of this section and shall approve the monitoring alternative if it finds that all aspects of the monitoring alternative can be implemented and that the monitoring alternative will satisfy the objectives listed in Subsection (b) of Section 2640 of this article.//If the proposed monitoring alternative cannot be approved, then the local agency may request the submittal of another proposed monitoring alternative or may specify the implementation of another monitoring alternative.

(c) The optional monitoring alternatives are as follows:

(1) Underground Storage Tank Testing.//This monitoring alternative shall, at a minimum, utilize the procedures specified in Section 2643 of this article and shall be performed monthly at a minimum.

(2) Vapor or Other Vadose Zone Monitoring and Ground Water Monitoring with Soil Sampling.

(A) This monitoring alternative shall, at a minimum, include vadose zone monitoring, ground water monitoring, and soil sampling. Soil sampling is required only at the time the boring(s) and well(s) are installed.

(B) The vadose zone monitoring program shall be designed and installed pursuant to the procedures specified in Sections 2646 and 2648 of this article. Vadose zone vapor monitoring shall be performed either continuously or daily, at a minimum. Other vadose zone monitoring shall be performed weekly, at a minimum.

(C) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and monitored semi-annually, at a minimum.///The minimum number of wells shall be as specified on Table 4.1 of this section for Alternative 2.///Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated.///The local agency shall require laboratory verification at periodic intervals if visual or field analysis cannot achieve levels of detection equivalent to laboratory analysis.

(D) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article///Samples shall be taken from all boring(s) and well(s) installed/

(3) Vadose Zone Monitoring/ Soil Sampling/ and Underground Storage Tank Testing/

(A) This monitoring alternative shall/ at a minimum/ include vadose zone monitoring and analysis of soil samples taken from the boring(s) made for vadose zone monitoring and tank testing///This alternative shall//not be approved if first ground water/ including intermittent/ perched ground water/ is less than 100 feet deep and this ground water has actual or potential beneficial uses (domestic/ municipal/ agricultural/ or industrial supply) or is hydraulically connected to ground and surface waters which has actual or potential beneficial uses/

(B) The determination that first ground water is significantly deeper than 100 feet shall be by an on-site boring(s) constructed according to the specifications in Subsection (p) of Section 2648 of this article or by evidence based on an evaluation pursuant to Subsection 2648(p) of this article.

(C) Vadose zone monitoring shall be designed and installed pursuant to the procedures specified in Sections 2648 and 2648 of this article/ Vadose zone vapor monitoring shall be performed either continuously or daily/ at a minimum///Other vadose zone monitoring shall be performed weekly/ at a minimum/

(D) The soil sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article///Samples shall be taken from all borings/installed/

(E) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

(4) Ground Water and Soil Testing/

(A) This monitoring alternative shall/ at a minimum/ utilize ground water sampling and analysis of soil samples taken at the time of well installation///This alternative shall not be approved if any of the following conditions exist/

(i) First ground water/ including intermittent/ perched ground water/ is normally greater than 30 feet deep/

Table 4.7 MONITORING ALTERNATIVES*

ALTERNATIVE	METHOD	MINIMUM MONITORING FREQUENCY	REFERENCE SECTION	COMMENTS AND CONDITIONS PROHIBITING USE OF ALTERNATIVE*
1	Tank Testing	Monthly	Section 2643	None
2	Vapor Zone Monitoring Method and Ground Water Sampling	Daily/Continuous	Section 2646	1/ Must be able to do both vadose and ground water monitoring/ 2/ Ground water should normally be less than 100 feet deep to use this alternative/ 3/ Minimum number of ground water monitoring wells/ a/ Ground water equal to or less than 50 feet deep/ / Single or multiple tanks (all ≤11,000 gal/ same or closely spaced excavations) + one downgradient well per tank minimum up to three wells/ / Single tank (≤11,000 gal) + two wells minimum one of which shall be downgradient/ / Two or three tanks (at least one/≤11,000 gal/ same or closely spaced excavations) + three wells/ minimum at least one of which shall be downgradient/ / Four or more tanks (at least one/≤11,000 gal/ same or closely spaced excavations) + four wells minimum/ at least two of which shall be downgradient and the remainder equally spaced/ Pipelines (additional wells/ if needed/ as determined by the local agency/ b/ Ground water greater than 30 feet deep/ / Single tank zone downgradient well/ / Multiple tanks or closely spaced tank excavations + three wells uniformly spaced/ unless the ground water gradient can be accurately determined/ in which case/ one downgradient well/ / Pipelines + additional wells/ if needed/ by the local agency/
3	Soils	One-Time	Section 2645	None

3	Vadose Zone and Soils and Tank Testing	Daily/Weekly One-Time Annual	Section 2646	This alternative shall not be used when first ground water is less than 100 feet deep and/ 1/ First ground water has actual or potential beneficial uses (municipal/ domestic/ industrial/ or agricultural supply)/ or 2/ First ground water is hydraulically connected to ground water which has or potentially has beneficial uses/
4	Ground Water and Soils	Monthly One-Time	Section 2647 Section 2645	1/ Use of this alternative shall be limited to the following situations/ a/ Perennial ground water is nominally less than 30 feet deep/ and b/ The ground water being monitored does not have any actual or potential beneficial uses (municipal/ domestic/ agricultural/ or industrial supply)/ and c/ The ground water being monitored is not hydraulically connected to ground water which has any actual or potential beneficial uses (municipal/ domestic/ agricultural/ industrial supply)/ and d/ The monitoring well can be screened in the zone 10 feet above the highest perennial ground water level and 20 feet below the lowest ground water level/ 2/ Minimum number of ground water monitoring wells/ See Section 241 of Alternative No/ 2/
5	Investigation Recommendation and Tank Testing and Pipeline Leak Detection	Daily Annual Continuous	Section 2644 Section 2643	1/ Must use approved meters for tank inputs and withdrawals/ 2/ Investigation recommendation which exceeds an allowable measurement error of plus 0/1% percent of throughput at any time during a 30-day period shall require further investigation/ Tank Size / Allowable Measurement Error ±4000 / 25 gallons 4000 to ±8000 / 50 gallons 8000 to ±12000 / 75 gallons ±12000 / 100 gallons 3/ Limited to motor vehicle fuels storage tanks/

6	///Inventory Reconciliation and Tank Testing and Pipeline Leak Detection and Spill and Vadose Monitoring of Ground Water Monitoring	Daily Annual Continuous Variable Variable	Section 2644 Section 2643 Section 2646 Section 2647	1/ Must use approved meters for tank inputs and withdrawals/ 2/ Inventory reconciliation which does not meet the following shall require further investigation/ a/ Daily variation ////+/-100 gallons b/ Weekly variation ///+/-5 percent of throughput but no greater than 350 gallons c/ Monthly variation +/-1% percent of throughput no less than 100 gallons 3/ Minimum number of ground water wells/+/See Alternative No/ 2 4/ Limited to motor vehicle fuel storage tanks/
7	Tank Gauging and Tank Testing	Weekly Annually	Section 2644 Section 2643	1/ This alternative is limited to use on small tanks that do not have frequent input of withdrawals /(e/g/ standby generator fuel supply) and where the liquid level in the tank can be measured to the nearest of + or -5 gallons///A liquid level differences of 1 percent of the tank volume or 3 gallons/ whichever is less shall be cause for further investigation/
8	Tank Testing and Inventory Reconciliation or Tank Gauging	Annually Daily Daily or Weekly	Section 2643 Section 2644 Section 2644	1/ This is an interim monitoring alternative that can be implemented for up to three years/ 2/ Inventory reconciliation shall utilize approved meters for inputs and withdrawals and shall maintain variations within the limits specified in Alternative No/ 6/ 3/ Tank gauging is limited to use on tanks described in Alternative No/ 7 and to those tanks that can eliminate inputs and withdrawals three times per week for 12 hours each///A liquid level differences of 1 percent of the tank volume but not greater than 30 gallons shall be cause for further investigation/

† This table is provided as a summary of the various monitoring alternatives/
//Section 2641 shall be used to determine the actual requirements for each monitoring alternative/

(ii) The ground water proposed for monitoring has actual or potential beneficial uses (domestic, municipal, industrial, or agricultural supply) or is hydraulically connected to ground or surface water which has actual or potential beneficial uses; or

(iii) The ground water monitoring well can not be perforated within the interval from 10 feet above the highest anticipated ground water level to 20 feet below the lowest perennial ground water level.///The 10-foot requirement may be waived by the local agency if ground water is less than 10 feet deep.

If the local agency waives this requirement, the well must still be capable of being perforated above the highest anticipated ground water level.

(B) Ground water monitoring wells shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article and shall be monitored monthly, at a minimum.///The minimum number of monitoring wells shall be as specified in Table 4.1 of this article for Alternative 4. Analysis of samples collected shall be by visual observation, or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated. If visual observation or field

analysis is used, the local agency shall require periodic laboratory analysis if the visual observation of field analysis does not provide a degree of detection equal to that of laboratory analysis.

(C) The soils sampling and analysis shall be performed as specified in Sections 2645 and 2648 of this article. Samples shall be taken from all wells installed.

(5) Inventory Reconciliation, Underground Storage Tank Testing, and Pipeline Leak Detectors.

(A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation, underground storage tank testing, and pipeline leak detectors. The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels.

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article. The owner or operator of an underground storage tank that experiences a inventory reconciliation in excess of allowable variation(s) shall implement the evaluation procedures specified in Subsection (f) of Section 2644 of this article within the times limits specified.

(i) The daily variation in inventory recognized shall be the difference between the calculated volume in storage and the actual volume in storage.

(ii) If the variation is based on the previous day's physically measured inventory, the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection.

(iii) If the variation is based on the previous day's calculated inventory, then the daily variation shall not exceed the allowable variation described in Subsection (iv) of this subsection. The calculated inventory on any given day shall be based on continuous calculations from the day on which the physical inventory was used. The period of continuous calculations shall be no greater than 1 month.

(iv) The allowable variation shall be the sum of the measurement error from Table 4.2 of this article and the throughput error calculated in accordance with Subsection (v) of this subsection.

Table 4.2

Tank Size*	Allowable Measurement Error
Less than 4,000	25
4,000 to less than 8,000	50
8,000 to less than 12,000	75
12,000 or greater	100

* All values in gallons

(4) The throughput error shall be 0.15 percent (0.0015) of the measured throughput during the period under consideration as described in either Subsection (1) or Subsection (11) of this subsection.

(C) Underground storage tank testing shall be performed yearly, at a minimum, according to the procedures specified in Section 2643 of this article.

(D) All pressurized pipelines shall be monitored using an automatic on-line pressure loss detector and flow restriction device. The detector shall be connected to an audible/visual alarm system unless it provides for at least a 50-percent reduction from the normal flow rates. Suction pipelines shall be monitored daily for indications of possible leaks.

(6) Inventory Reconciliation/ Underground Storage Tank Testing/ Pipeline Leak Detectors/ Vadose Zone/ or Ground Water Monitoring and Soil Testing/

(A) This monitoring alternative shall, at a minimum, utilize inventory reconciliation/ underground storage tank testing/ and pipeline leak detectors///In addition/ either vadose zone or ground water monitoring shall be included and analysis of soil samples taken at the time of boring or well installation/ The use of this alternative is limited to those underground storage tanks which contain motor vehicle fuels/

(B) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article/ The owner or operator of an underground storage tank that experiences a variation in excess of any of the following shall implement the evaluation procedures specified in Subsection (f) of Section 2644 of this article within the times specified/

(i) daily variation///plus or minus 100 gallons

(ii) 7-day variation///plus or minus 5 percent of throughput or 100 gallons whichever is greater but/ in no case/ greater than 350 gallons

(III) more than 30-day variation///plus or minus 01% percent of throughput or 100 gallons whichever is less

(C) Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in Section 2643 of this article/

(D) All pressurized pipelines and suction pipelines shall be monitored as provided for in Subsection (5)(D) of this subsection/

(E) Vadose zone monitoring/ If used/ shall be designed and installed according to the procedures specified in Sections 2646 and 2648 of this article///The frequency of monitoring shall be no less frequent than semi-annually/

(F) Ground water monitoring/ If used/ shall be designed and installed according to the procedures specified in Sections 2647 and 2648 of this article///The minimum number of monitoring wells shall be as specified in Alternative 6 in Table 4I of this article///Analysis of samples collected can be by visual observation/ or field or laboratory analysis as determined by the local agency depending on the constituents being evaluated///Ground water samples shall be collected and analyzed at least semi-annually///If samples are analyzed by visual observation or field analysis/ the local agency shall require laboratory analysis if the results of the visual or field analysis are less accurate than laboratory methods/

(G) The soil sampling and analysis shall be performed as specified in Sections 2548 and 2548 of this article. Samples shall be taken from all borings and wells installed.

(7) Underground Storage Tank Gauging and Testing.

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank.///This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the/underground storage tank can be measured to an accuracy of + 5/ gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

(B) The underground storage tank gauging shall be performed according to the following specifications.

(i) The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals.

(ii) Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days///No input or withdrawals shall occur during these periods///The liquid level at the beginning and end of each period shall, if possible, be performed by the same person;

(iii) Underground storage tank testing shall be performed early at a minimum according to the procedures specified in Section 2643 of this article; and

(iv) If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred///The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations;

(B) Interim Monitoring

(A) This alternative monitoring method shall at a minimum utilize underground storage tank testing and either inventory reconciliation or tank gauging///This alternative shall be available only to any of the following categories of owners for a period of up to 3 years after the effective date of these regulations:

(i) Small businesses as defined in Subsection 11342(e) of the Government Code and non-profit organizations which would meet the criteria for a small business, provided the owner demonstrates to the local agency that sufficient funds will be available to close the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection within the 3-year period.

(ii) Any underground storage tank owner who provides a written, legally binding, commitment to the local agency that the underground storage tank will be closed according to the procedures specified in Article 7 of this subchapter within

3 years from the statutory compliance date or replaced with a new underground storage tank which complies with the provisions of Article 3 of this subchapter.//The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit, or

(iii) Any governmental agency that demonstrates to the local agency that, due to budgetary constraints the governmental agency needs additional time to close or replace the underground storage tank pursuant to Article 7 of this subchapter or to implement one of the first 7 monitoring alternatives of this subsection. The local agency shall not issue a permit pursuant to this subsection for longer than 3 years and shall not renew the permit.

(B) Underground storage tank testing shall be performed according to the procedures specified in Section 2643 of this article and shall be performed yearly, at a minimum.

(C) Inventory reconciliation shall be performed according to the procedures specified in Section 2644 of this article.//The owner or operator of an underground storage tank that experiences a variation in excess of the levels specified in Subsection (C)(6)(B) of this section shall implement the evaluation procedures specified in Subsection (F) of Section 2634 of this article within the time specified.

(D) Underground storage tank gauging shall be performed according//to the specifications of Subsection (C)(7)(B) of this section/ Variations in excess of 1 percent of the underground storage tank volume or 50 gallons/ whichever is less/ shall be cause for further evaluation/

(D) The local agencies shall evaluate each monitoring alternative proposed to determine if it achieves the objectives specified in Subsection (B) of this article according to the following/

(1) Whenever possible/ a primary method of monitoring other than ground water monitoring shall be performed/ monthly at a minimum/

(2) Where the underground storage tank is in an area where precipitation or surface runoff provides direct recharge of the ground water and the ground water being recharged has an actual or potential use (domestic/ municipal/ agricultural/ or industrial supply)/ a monitoring method other than ground water monitoring shall be utilized on a monthly or more frequent basis for leak detection monitoring/

(3) In addition/ ground water monitoring may be required by the local agency in the areas described in Subsection (2) above///The local agency shall review and approve the number and location of the monitoring well(s)/ More than 1 underground storage tank or facility may be monitored using the same well provided the well is directly downgradient of all underground storage tanks or facilities being monitored and is within 1/000 feet of all underground storage tanks being monitored/

2641. Monitoring Program Requirements

(a) Owners of existing underground storage tanks subject to this article shall implement a monitoring program which is capable of detecting any unauthorized release from any portion of the underground storage tank system at the earliest possible opportunity, except for piping which is either exempt from the definition of underground storage tank pursuant to section 25281.5 of the Health and Safety Code, or is exempt from monitoring under subsection (b) of this section.

(b) Underground piping shall be exempt from the monitoring program if the local agency determines that the piping has been designed and constructed in accordance with the standards set forth in section 2635(b)(7) of this chapter.

(c) The monitoring program for all underground piping that operates at less than atmospheric pressure, unless it is exempt from monitoring under subsection (b) of this section, shall comply with section 2643(e) and shall include daily monitoring as described in Appendix II.

(d) The monitoring program shall include visual monitoring in accordance with section 2642 of this article for all portions of the underground storage tank system which is not exempt under this section. A portion of the underground storage tank shall be exempt from visual monitoring if the owner demonstrates to the satisfaction of the local agency that one or more of the following conditions apply to that portion:

(1) A portion of the underground storage tank is not accessible for direct viewing;

(2) Visual inspection of a portion of the underground storage tank would be hazardous or would require the use of extraordinary personal protection equipment other than normal protective equipment such as steel-toed shoes, hard hat, or ear protection; or

(3) The underground storage tank is located at a facility which is not staffed on a daily basis.

(e) The monitoring program shall include non-visual monitoring which must be implemented for all portions of the underground storage tank which are exempt under subsection (d) of this section and for the underground storage tank during periods when visual monitoring required under subsection (d) of this section is not conducted. This non-visual monitoring shall include a quantitative release detection method as specified in section 2643 of this article or a qualitative release detection method as specified in section 2644 of this article or a combination of these methods as approved by the local agency.

(f) At a minimum, any non-visual monitoring shall include a quantitative release detection method for underground pressurized piping that complies with the performance requirements specified in section 2643(d)(1).

(g) The monitoring program must be approved by the local agency and as a minimum shall be in compliance with the requirements of this article and as specified in the underground storage tank operating permit. The local agency may require additional monitoring methods or increased monitoring frequencies as necessary to satisfy the objective in subsection (a) of this article. In deciding whether or not to approve a proposed monitoring program, or to require additional methods or frequencies of monitoring, the local agency shall consider the following factors:

(1) The volume and physical and chemical characteristics of the hazardous substance(s) stored in the underground storage tank;

(2) The compatibility of the stored hazardous substance(s) and any chemical reaction product(s) with the function of monitoring equipment or devices;

(3) The reliability and consistency of the proposed monitoring equipment and systems under site-specific conditions;

(4) The depth and quantity of ground water and the direction of ground water flow;

(5) The patterns of precipitation in the region and any ground water recharge which occurs as a result of precipitation;

(6) The existing quality of ground water in the area, including other sources of contamination and their cumulative impacts;

(7) The current and potential future uses (e.g., domestic, municipal, agricultural, industrial supply) of ground water in the area;

(8) The proximity and withdrawal rates of ground water users in the area;

(9) The type, homogeneity, and range of moisture content of the backfill material and native soils and their probable effects on contaminant migration and detection;

(10) The presence of contamination in the excavation zone or surrounding soils;

(11) The proximity of the underground storage tank to surface waters; and

(12) Additional hydrogeologic characteristics of the zone surrounding the underground storage tank.

(h) Owners shall repair or close in accordance with the requirements of Article 6, or 7, respectively, any underground storage tank for which an approved monitoring program is not promptly obtained.

(i) Equipment and devices used in implementing the monitoring program shall be installed, calibrated, operated, and maintained in accordance with manufacturer's instructions, including routine maintenance and service checks (at least once per calendar year) for operability or running condition. Written records shall be maintained as required in section 2712 of Article 10 of this chapter.

(j) When an unauthorized release is indicated during the installation of a release detection system, the owner or operator shall cease the installation process and comply with the release reporting requirements of Article 5 and shall replace, repair or close the underground storage tank in accordance with Article 3, 6 or 7 of this chapter.

(k) When implementation of the monitoring program indicates that an unauthorized release may have occurred, the owner shall comply with the release reporting requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25283, 25291, 25292

40 CFR 280.40, 280.41

2642. Visual Monitoring

(a) Visual monitoring shall be utilized as the principal leak detection monitoring method, where feasible, for all visible exterior surfaces of an underground storage tank unless the owner demonstrates to the local agency that at least one of the exemption criteria of subsection (b) of this section is applicable.// If visual monitoring is required, the provisions of Subsections (c) and (d) of this section shall be followed.

(b) The owner is exempt from visual monitoring for that portion of the underground storage tank to which the following conditions apply:

(1) Any portion of an underground storage tank that is in contact with the ground, a floor, or pad such that it cannot be seen.// An underground storage tank in a saddle should not typically qualify for an exemption.

(2) Visual inspection of the underground storage tank would put a person in a physically unsafe environment.

(3) Visual inspection of the underground storage tank would require the use of extraordinary personal protection equipment (other than normal protective equipment, such as steel-toed shoes, hard hat, eye or ear protection, etc.).

(4) The underground storage tank is located at a facility which is not staffed on a daily basis.

(c)

(a) A An owner who is required, pursuant to section 2641 of this article, to implement visual monitoring program shall incorporate comply with all of the following requirements:

(1) Provisions for routine direct visual/inspection of All accessible visible exterior surfaces of an underground storage tank, and the including any visible horizontal surface directly beneath the underground storage tank, shall be inspected at least daily monitored by direct viewing. The inspection schedule shall be established such that some of the inspections are conducted when the liquid in the underground storage tank is at its highest level;

(2) A written statement of the routine monitoring procedure shall be prepared and be available at the facility which and the record shall include(s) the frequency of visual inspections, the location(s) from which observations will be made, the name(s) or and title(s) of the person(s) responsible for performing the observations and the reporting format(;

(3) Visual inspections shall be performed/daily at a minimum/ and shall be more frequent if necessary/ The inspection schedule shall be established such that some of the inspections occur when the liquid/the underground storage tank is at its highest level///The inspection frequency shall be determined such that any unauthorized released will remain observable on the exterior of or the horizontal surface beneath the underground storage tank between visual//inspections/ The evaluation of

how long the hazardous substance remains observable shall consider the volatility of the hazardous substance and the porosity and slope of the surface immediately beneath the underground storage tank or portion thereof being visually monitored.

(4)

(3) Written records shall be maintained according to section 2712 of Article 10 of this chapter and shall include recordation of the observations made and the liquid level in the underground storage tank at the time of the each inspection. These records shall also include a description of any sampling, analyses, and testing procedures conducted to satisfy subsection (b) of this section, including any minimum levels of detection used.

(d)

(b) The observation of The owner or operator shall undertake all of the following activities if any liquid around or on the exterior of or the horizontal surface immediately beneath the underground storage tank being visually is observed: monitored shall cause the owner or operator to implement all or a portion of the following actions:///The applicable

(1) Any and all action necessary to promptly actions and their timing shall be based on the site-specific situation, shall be instituted to determine if the observed liquid constitutes an unauthorized release, and shall be included in the permit, shall be taken;

(I) Laboratory or field analysis of the observed liquid which shall include minimum levels of detection;

(2) Observed liquid shall be analyzed in the field or laboratory to determine if an unauthorized release has occurred; and

~~(2)~~

(3) ~~Testing of t~~The underground storage tank shall be tested utilizing ~~the procedures described~~ a quantitative release detection method which complies with one or more of the performance standards set forth in section 2643 of this article.

~~(3) Removing all hazardous substances from the underground storage tank~~

(c) If the steps in subsection 2642(b) indicate that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter, and shall replace, repair or close the underground storage tank pursuant to Article 3, 6, or 7 of this chapter.

~~(c)~~

(d) Visual monitoring of the exposed portion of a partially concealed underground storage tank shall not relieve an owner from implementing monitoring ~~for~~ the concealed portion of the tank using a non-visual monitoring alternative as specified in section 2641 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292, 25293

2643/ Underground Storage Tank Testing

(a) All owners of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies underground storage tank testing shall implement a testing program pursuant to Subsections 2643 (b) through (g) of this section/

(b) Testing of underground storage tanks shall utilize a method capable of detecting a release of a hazardous substance at a rate of 0/05 gallons per hour///These methods are limited to those tests that make adjustments for all of the following/ if applicable/

(1) The presence of vapor pockets/

(2) Thermal expansion or contraction of the hazardous substance/ which includes any density considerations/

(3) Temperature stratification in the underground storage tank/

(4) Evaporation/

(5) Pressure variations in the underground storage tank/ and

(6) Detection of the underground storage tank ends/

(c) Testing of pipelines which have been isolated may utilize a hydrostatic pressure test in lieu of the test required in Subsection (b) of this section. This hydrostatic pressure test shall be conducted at a pressure of 30 psi (2000 mm Hg) or greater. The test shall be performed for at least 5 minutes. A pressure drop of more than 5 psi (200 mm Hg) per minute indicates the probability of a leaking pipeline. A pressure drop of less than 5 psi (200 mm Hg) but greater than zero is inconclusive, and a pursuant to Subsection (b) of this section shall be performed.

(d) The tests required in this section shall be performed by personnel who have received training in appropriate test procedures. The person performing the test described in Subsection (b) of this section shall certify that the test procedure utilized takes into account the variables specified and is capable of measuring leaks of 0.05 gallons per hour. Additionally, I year after the development of a listing or certification procedure by a nationally recognized independent testing organization which evaluates the accuracy of the test for the type of test described in Subsection (b) of this section, only listed or certified tests shall be accepted.

(e) Within 30 days of completion of either of the leak detection test described in Subsection (b) or (c) of this section, the underground storage tank owner shall provide the local agency with a report which includes the following information, if applicable:

(1) The procedures used (including any deviations from those recommended by the developer of the underground storage tank test procedure) for the leak detection method.

(2) The test results used in determining the volumetric rate of product loss;

(3) The volumetric rate of product loss; and

(4) The information shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the test procedure used.

(f) Underground storage tanks which are found to lose product shall be repaired or replaced as specified in Articles 6 and 7 of this subchapter; respectively.

(g) The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank is leaking shall be reported by the underground storage tank owner to the local agency within 30 days of completion of the test.

Section 2643. Non-Visual Monitoring/Quantitative Release Detection Methods

(a) An owner required, pursuant to section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a quantitative release detection method is used. Examples of release detection method(s) that may be used to meet the performance standards of this section are presented in Appendix IV.

(b) At a minimum, any quantitative release detection method(s) used as part of non-visual monitoring shall comply with the performance standards specified in subsection (c) of this section for the monitoring of underground storage tanks, subsection (d) of this section for the monitoring of pressurized piping, and subsection (e) of this section for the monitoring of suction piping.

(c) Any quantitative release detection method(s) used for the monitoring of underground storage tanks shall comply with at least one of the following performance standards:

(1) Monitoring shall be conducted at least monthly (once per calendar month after tank filling) and be capable of detecting a release of 0.2 gallon per hour defined at any operating product level in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(2) Monitoring shall be conducted which complies with both of the following:

(A) Monitoring shall be conducted at least annually (once per calendar year after tank filling) and be capable of detecting a release of 0.1 gallon per hour defined at or above the maximum product level determined by the overfill protection system in the underground storage tank with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; and

(B) Monitoring shall be conducted at least monthly and be capable of detecting a minimum release of 1.0 gallon per hour with a 95 percent probability of detection and not more than a 5 percent probability of false alarm defined at any normal operating product level in the underground storage tank.

(d) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under pressure shall comply with the performance standards specified below in subsection 1, and either subsection 2 or subsection 3 as follows:

(1) Monitoring shall be conducted at least hourly at any pressure, provided that the method is capable of detecting a release equivalent to 3.0 gallons per hour defined at 10 pounds per square inch pressure within one hour of its occurrence with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. The leak detection method shall have the capability of alerting the operator of the presence of an unauthorized release by restricting or shutting off the flow of product through the piping or by triggering a visual or audible alarm. (After December 22, 1998 the leak detection method shall shut off the pump when a release occurs.) If pipeline use is intermittent, leak detection monitoring is required only at the beginning or end of the period during which the pipeline is under pressure, but in any event there shall not be more than one hour between the time the pipeline is put under pressure and detection of an unauthorized release; and

(2) Monitoring shall be conducted at least monthly at any pressure provided that the method is capable of detecting a minimum release equivalent to 0.2 gallon per hour defined at normal operating pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm; or

(3) Monitoring shall be conducted at least annually (once per calendar year) at a pressure designated by the equipment manufacturer provided that the method is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at 150 percent (one and one half times) the normal operating pressure of the product piping system at the test pressure with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm.

(e) Any quantitative release detection method(s) used for the monitoring of piping that conveys hazardous substances under less than atmospheric pressure shall include monitoring conducted at least every three years which is capable of detecting a minimum release equivalent to 0.1 gallon per hour defined at a minimum of 40 psi with at least a 95 percent probability of detection and not more than a 5 percent probability of false alarm. Daily monitoring shall be performed as described in Appendix II.

(f) Inventory reconciliation and manual tank gauging do not require certification of compliance with the performance standards of subsection (b) of this section. Manual tank gauging and inventory reconciliation release detection methods shall comply with sections 2645 and 2646 of this article, respectively.

(g) Each quantitative release detection method, with the exception of inventory reconciliation and manual tank gauging, shall have a certification stating that it complies with the performance standard(s) specified in this section. This certification shall be provided as a result of one of the following evaluation procedures:

(1) An independent third party testing laboratory shall evaluate and approve the method using the appropriate "EPA Standard Test Procedure" for leak detection equipment presented in Appendix V; or

(2) An independent third party testing laboratory shall evaluate and approve the method using a voluntary consensus standard that is intended for the method being evaluated; or

(3) An independent third party testing laboratory shall evaluate and approve the method using a procedure deemed equivalent to an EPA procedure. Any resultant certification shall include a statement by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as used in the EPA standard test procedure. This certification shall include a statement that:

(A) The method was tested under various conditions that simulate interferences likely to be encountered in actual field conditions (no fewer nor less rigorous than the environmental conditions used in the corresponding EPA test procedure);

(B) Each condition under which the method was tested was varied over a range expected to be encountered in 75 percent of the normal test cases;

(C) All portions of the equipment or method evaluated received the same evaluation;

(D) The amount of data collected and the statistical analysis are at least as extensive and rigorous as the data collected and statistical analysis used in the corresponding EPA test procedure and are sufficient to draw reasonable conclusions about the equipment or method being evaluated;

(E) The full-sized version of the leak detection equipment was physically tested; and

(F) The experimental conditions under which the evaluation was performed and the conditions under which the method was recommended for use have been fully disclosed and that the evaluation was not based solely on theory or calculation.

(4) The evaluation results must contain the same information and shall be reported following the same general format as the EPA standard results sheet as any corresponding EPA test procedure.

(h) The underground storage tank owner shall notify the local agency 48 hours prior to conducting any tank integrity test. The 48-hour notification requirement may be waived by the local agency. Within 30 calendar days of completion of an underground storage tank integrity test, the tank owner shall provide the local agency with a report. The results of any underground storage tank tests, other than those required by this article, performed on the underground storage tank to determine if the underground storage tank has a release shall be reported by the owner or operator to the local agency within 30 days of completion of the test. The report shall be presented in written and/or tabular format as appropriate and shall be at a level of detail appropriate for the release detection method used.

(i) If an automatic tank gauge is used as a method of release detection, the automatic tank gauge shall generate a hard copy of all data reported, including time and date; tank identification; fuel depth; water depth; temperature; liquid volume; the time automatic tank gauging is performed; and hourly temperature corrected volume data during the automatic tank test.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code ~~25291~~ 25292 ~~25293~~

40 CFR 280.40 - 280.45

2644. Non-Visual Monitoring/Qualitative Release Detection Methods

(a) An owner required, pursuant to section 2641 of this article, to establish non-visual monitoring shall comply with the requirements of this section if a qualitative release detection method is used. Each qualitative release detection method shall have an independent third party evaluation to certify accuracy and response time of the detection method in accordance with procedures presented in Appendix V. Examples of qualitative release detection method(s) that may be used are presented in Appendix IV.

(b) Vadose zone monitoring release detection shall be conducted in accordance with the requirements of section 2647.

(c) Ground water monitoring release detection shall be conducted in accordance with the requirements of section 2648.

(d) Any qualitative release detection method which includes the installation of monitoring wells or the drilling of other borings shall include installation, construction, and sampling and analysis procedures according to the requirements of section 2649 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292

40 CFR 280.43

2645/ Soil Testing

(a) All owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires borings for vadose zone or ground water monitoring shall implement soil testing pursuant to Subsections (b) through (h) of this section/

(b) Undisturbed (intact) soil samples shall be recovered from all borings used for the installation///This requirement may be waived by the local agency when borings cannot be drilled and sampled using accepted techniques that do not introduce liquids into the boring/

(c) Soil samples shall be taken at intervals of 5 feet or less beginning at the ground surface/ but sampling shall not be required below the water table nor in unweathered bedrock which has little or no primary permeability/

(d) A soil sample shall also be obtained at the termination depth of a dry boring regardless of the spacing interval/

(e) Borings shall be drilled and sampled by techniques that do not introduce liquids into the boring and that allow the accurate detection of perched and saturated zone ground water/ If this cannot be accomplished using accepted techniques/ the requirement for soil sampling may be waived by the local agency/ However/ the vadose zone or ground water monitoring system shall still be installed/ Furthermore/ once below the water table/ it is not required that the wells be advanced using the same method that was used in the vadose zone/

(f) Borings shall be described in accordance with the provisions of Subsections 2648 (t) and (u) of this article.

(g) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide replicate analyses, if specified.

(h) If more than one boring is utilized, composite samples consisting of soil from the same depth from each boring may be used for laboratory analysis if such samples can be made without loss of constituents prior to analysis and any pollutant in a sample will not be diluted below detection limits by mixing with uncontaminated samples or samples that contain low concentrations of the pollutant.

(i) Soil samples shall be acquired, prepared, preserved, stored, transported and analyzed by methods that are appropriate for the objectives of the investigation and that will safeguard sample integrity.///Some acceptable methods may be found in the references listed in Appendix I, Table C of this subchapter.///Other similar or superior methods may be approved by the local agency.

(j) Samples shall be analyzed by field or laboratory methods that provide quantitative or qualitative results.///If qualitative methods are used, their lower detection limits shall be verified by the developer, distributor or manufacturer of the testing method or device, or by actual field tests in the case of sensory-type tests. The analyses shall be by methods that are

appropriate for the objectives of the investigation and that will safeguard sample integrity///Some acceptable methods may be found in the references listed in Appendix I, Table C of this subchapter///Other similar or superior methods may be approved by the local agency///The analytical method approved for soil testing shall have a detection limit that is lower than the concentration that would interfere with any of the long-term monitoring methods that could be used at the site/

(K) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank///If the use of the underground storage tank has historically changed, then analysis shall be for at least one constituent from each period of use///If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents/

(L) Samples may be analyzed in any order of depth/ If levels of hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site)/ further soils analysis is not necessary pursuant to this subsection and the hazardous substance(s) shall be assumed to have originated from the underground storage tank///In this situation/ the remainder of the soil samples need not be analyzed pursuant to these regulations///A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank/<u>system</u> is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the

underground storage tank can be detected despite the presence of the hazardous substance already in the environment.

(m) If soil analysis indicates that an unauthorized release has occurred, the permittee shall report the release pursuant to Article 5 of this subchapter and shall repair or close the underground storage tank pursuant to Article 6 or 7 of this subchapter.

(n) If evidence of an unauthorized release is not detected, an alternative leak detection monitoring system shall be installed pursuant to Section/2643 2641 of this Article.

2645. Manual Tank Gauging and Testing

(a) Manual tank gauging shall only be used as part of non-visual monitoring for existing underground storage tanks which have a total system capacity of 2,000 gallons or less and which can be taken out of service for at least 48 continuous hours each week. Underground storage tanks with a capacity of 551 - 2,000 gallons must also receive a tank integrity test each year.

(b) Manual tank gauging shall not be used on tanks with secondary containment and shall not be used as part of a non-visual monitoring alternative under this article after December 22, 1998 for underground storage tanks with a capacity of 1,001 gallons or greater.

(c) Owners of existing underground storage tanks who utilize manual tank gauging as part of a non-visual monitoring alternative shall, at a minimum, conduct weekly gauging according to the following specifications:

(1) Tank liquid level measurements shall be taken at the beginning and ending of a gauging period which shall be at least 36 continuous hours during which no liquid is added to or removed from the tank. The underground storage tank shall be secured to prevent inputs or withdrawals during the gauging period. No inputs shall occur within the 12-hour period preceeding the gauging period. The liquid level measurements shall be based on an average of two consecutive stick readings at both the beginning and ending of the period; and

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

(3) If the variation between beginning and ending measurements exceeds the weekly or monthly standards set forth in Table 4.1, a second 36 hour test shall be commenced immediately and all measurements and calculations checked for possible errors. If the second test confirms a variation which exceeds the weekly or monthly standards in Table 4.1, then an unauthorized release shall be suspected and a tank integrity test shall be conducted within 72 hours. The local agency may extend this 72-hour period up to 30 calendar days, if all the contents of the underground tank are safely and properly removed within the 72-hour period.

(d) If the results of a tank integrity test conducted under the requirements of subsection (c)(3) of this section confirm an unauthorized release, the owner shall comply with the requirements of Article 5 of this chapter and replace, repair, or close the underground storage tank in accordance with Article 3, 6, or 7 of this chapter.

Table 4.1

MANUAL TANK GAUGING MEASUREMENT STANDARDS

Tank Size (Gallons)	Weekly Standard (One Test) (Gallons)	Monthly Standard (Average of Four Tests) (Gallons)
550 or Less	10	5
551 to 1,000	13	7
1,001 to 2,000	26	13

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25291, 25292, 25293

40 CFR 280.43

2648/ Vadose Zone Monitoring

(a) All/owners of existing underground storage tanks implementing one of the monitoring alternatives described in Section 2641 of this article which requires vapor or another form of vadose zone monitoring shall implement the vadose zone detection monitoring system pursuant to Subsections (b) through (k) of this section/

(b) Vadose zone monitoring shall consist of vapor monitoring/ soil-pore liquid monitoring/ or other forms of vadose zone monitoring///Combinations of these methods may be used/

(c) Wells for vapor monitoring shall be fully perforated except for that portion adjacent to a surface seal and that portion of the bottom of a well where a plugged/ blank segment of casing is used as a free liquid trap/

(d) The number/ location/ and depths of vadose zone monitoring points shall be selected so as to give the earliest possible warning of any unauthorized release from the underground storage tank/

(e) Subsurface vadose zone monitoring systems shall/ if possible/ be located within the backfill surrounding the underground storage tank/

(f) Vapor monitoring for underground storage tanks shall be used in accordance with the following criteria if the vapor characteristics of the stored product are susceptible to detection/

(1) Before any method of vapor monitoring is approved for a specific site, it shall be demonstrated by an actual on-site demonstration, using an appropriate tracer substance, that vapor would actually be detected by the installed system.///This requirement may be waived by the local agency based on a demonstration by the applicant that the proposed monitoring system has been proven to be effective in detecting unauthorized releases from underground storage tanks in equal or less favorable situations. The following factors shall be considered in comparing the demonstration to the actual on-site conditions:

(A) Backfill materials and grain size distribution;

(B) Type and homogeneity of native soils;

(C) Range of moisture contents of the backfill and native soils, that will be encountered, and their effect on vapor migration and detection;

(2) The location and depth at which each sensor is placed relative to the underground storage tank shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(3) Vapor monitoring wells placed in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well;

(g) Soil-pore liquid monitoring and other forms of vadose zone monitoring may be approved if the discharger can clearly show that:

(1) The stored substance is susceptible to detection by the proposed technique;

(2) The stored substance will not attack the materials from which the detector system is constructed or otherwise render the detector system inoperable;

(3) The site and soil characteristics will not prevent detection of an unauthorized release by the monitoring system;

(4) The proposed technique will be effective in providing early detection of underground storage tank leakage.

(h) Borings shall be described in accordance with the provisions of the Subsections 2648(t) and (u) of this article.

2644/

2646. Inventory Reconciliation

(a) Inventory reconciliation shall only be used as part of non-visual monitoring for existing underground storage tanks which contain motor vehicle fuels.

(b) After January 1, 1993, inventory reconciliation, and any other leak detection method that utilizes manual stick readings, shall not be used as part of non-visual monitoring for existing underground storage tanks containing a hazardous substance including motor vehicle fuel, where the existing ground water level or the highest anticipated ground water level is less than 20 feet below the bottom of the tank. These ground water levels shall be determined according to the requirements of section 2649(c) of this article.

(c) Inventory reconciliation that utilizes manual stick readings shall not be used after December 22, 1998.

(d) All owners or operators of existing underground storage tanks implementing a monitoring alternative in Section 2641 of this article which specifies/who utilize inventory reconciliation as part of non-visual monitoring shall comply with implement an inventory reconciliation program as described in Subsection (b) through (f) the requirements of this section. This requirement may be transferred to the operator pursuant to the appropriate provisions of Chapter 6.7 of Division 20 of the Health and Safety Code/

(e) Each underground storage tanks shall be individually monitored utilizing an inventory reconciliation system that takes into account:

(1) Separate daily underground storage tank quantity measurements for both the stored hazardous substance and any water layer; and

(2) Daily readings for underground storage tank input and withdrawals; and

(3) Checking of product inputs indicated by delivery receipt by measurement of the tank inventory volume before and after delivery. Underground storage tanks that are connected by a manifold may require time for the level to stabilize before a measurement is taken.

(f) Meters used for determining inputs and withdrawals shall comply with California Code of Regulations, Title 4, Chapter 9, Subchapter 1, "Tolerances and specifications for commercial weighing and measuring devices." Meters shall be inspected by the County Department of Weights and Measures or a device repairman as defined in the California Business and Professions Code, Division 5, Chapter 5.5.

(g) For the purpose of this section, "daily" means at least 5 days per week. The number of days involved may be reduced by the number of public holidays that occur during any such week. Local agencies may reduce

the frequency of monitoring to no less than once every 3 days at facilities that are not staffed on a regular basis, provided that the monitoring is performed on every day the facility is staffed or ~~that~~ when inputs or withdrawals are made from the underground storage tank.

~~(d)~~

(h) Underground storage tank quantity measurements shall be based on liquid level ~~elevation~~ measurements which are:

(1) Performed during periods when no additions or withdrawals are being made to the underground storage tank;

(2) Performed by the underground storage tank owner, operator, or other designated ~~personnel~~ persons who have had appropriate training;

(3) Based on the average of two readings if stick or tape measurements are used;

(4) Determined by equipment capable of measuring the level of the product over the full range of the tank's height to the nearest one-eighth of an inch;

~~(4)~~

(5) Determined by equipment ~~C~~capable of ~~detecting~~ measuring, to the nearest one-eighth of an inch, water ~~level~~ present in the bottom of the underground storage tank~~, if possible~~. If the underground storage tank is not level, and the measurements are taken manually, then the measurement should occur at the lowest end of the underground storage tank;

(5)

(6) Measured at the center of the longitudinal axis of the underground storage tank if access is available or measured at the lowest end of the underground storage tank with a calibration measurement at both ends, if possible, to determine if any underground storage tank tilt exists and, if so, its magnitude; and

(6)

(7) Converted to volume measurements based on a calibration chart for the underground storage tank. This chart shall, if possible, where feasible, take into account the actual tilt of the underground storage tank as determined in (5) above.

(i) The daily variation in inventory reconciliation shall be the difference between physically measured inventory in storage and the calculated inventory in storage. The physically measured inventory shall be determined at approximately the same time each day by taking liquid level measurement and converting it to gallons using the calibration chart. The calculated inventory shall be determined at approximately the same time of day for each business day by adding the inputs and subtracting the withdrawals from the physically measured inventory determined the day before. These variations shall be summed for a period of one month. Monthly variations exceeding a variation of 1.0 percent of the monthly tank delivery plus 130 gallons must be investigated in accordance with this section.

(e)

(j) The owner or operator shall, on a quarterly an annual basis, submit a statement to the local agency, under penalty of perjury, that either which states that all inventory reconciliation data is are within allowable variations or which includes a listing of the dates period of times and the corresponding variations that which exceed the allowable variations. Said statement shall be executed under penalty of perjury.

(f)

(k) If the monthly inventory reconciliation, conducted under subsection (i) of this section, exceeds the allowable variation, indicates a loss of the hazardous substance greater than that specified, the owner or operator as appropriate or permittee shall: implement the following:// If the inventory reconciliation indicates a gain of hazardous substances greater than that specified, the operator or permittee shall implement subsections (1),(2),(3), and (5) of this section.//The steps may be implemented sequentially or concurrently, however, they must be completed within the specified time periods.//Reporting as required in Article 5 of this subchapter shall be followed.

If completion of the steps described in subsections (2), (3), or (5) of this subsection indicates inventory reconciliation errors that, when corrected cause the levels specified, not to be exceeded, then the requirements of the steps need not be completed.// If completion of the steps described in subsections (4) or (5) through (8) of this subsection reveal the source of the loss, then the requirements of the steps need not be completed.

The transfer of hazardous substances into and out of the underground storage tank may continue during implementation of the steps provided that the steps are completed within the specified periods and any loss or gain did not exceed two times the specified levels///Daily reconciliation shall continue during implementation of the steps/

(1) Notify the local agency of a suspected unauthorized release within 24 hours of completing any inventory reconciliation which exceeds the allowable variation;

(1) The operator shall notify the owner verbally or in writing of the fact that inventory reconciliation indicates a loss of hazardous substances or gain of water within 24 hours of the completion of the daily reconciliation which indicates the loss or gain/

(2) Within 24 hours of discovering a variation which exceeds the allowable variation, the operator shall review the inventory records for the preceding 30 days and within 2 hours to determine if an calculation error exists which would that caused the gain or loss apparent excessive variation. to be less than that specified/

(3) The operator shall have performed, by a qualified person, a complete review of all inventory records from the last time a zero loss or gain condition existed. This shall include a new inventory reconciliation which was taken at least 8 hours after the inventory reconciliation which triggered this evaluation. This shall be completed within 24 hours of the conclusion of Subsection (f)(2) of this section.

(4) The readily accessible physical facilities shall be carefully inspected for leakage///This shall be completed by trained personnel within 24 hours of completion of Subsection (f)(3) of this section.

(3) Within 24 hours of discovering a variation which exceeds the allowable variation, have all readily accessible facilities carefully inspected for leakage by appropriately trained persons;

(5)

(4) Have All dispenser meters associated with hazardous substance withdrawal shall be checked for calibration within 24 hours of completing of the procedure required in subsection (f)(4)(3) immediately above of this section.

(6) All piping shall be tested within 24 hours of completion of Subsection (f)(5) of this section.// The piping shall be isolated and hydrostatically pressure tested at/50 psi (2600 mm Hg) or greater.// If the pressure drops more than 5 psi (260 mm Hg) per minute, it indicates the probability of a leak in the line.// Repeat the test at least once to ensure against compression of entrained air.// Any pressure drop less than 5 psi (260 mm Hg) per minute is inconclusive as it may be caused by cooling.// This step may be completed after/the step described in Subsection(f)(7) of this section if exception is necessary to perform the tests and if/the step described in/Subsection (f)(7) of this section is completed within 48 hours of the completion of Subsection (f)(5) of this section.// If this occurs, then this subsection shall be completed within 24 hours of the completion of Subsection (f)(7) of this section.

(7) The underground storage tank shall be tested using the tests described in Section 2643 of this article within 48 hours of completion of Subsection (f)(6) of this section.

(5) Continue to conduct inventory reconciliation according to the requirements of this section. If a second 30-day period of data confirms the initial results, the owner or operator shall comply with the requirements of Article 5 of this chapter; and

(8)

(6) Conduct such Aadditional tests or investigations as may be required by the local agency.

(l) Whenever any of the steps in subsection (k) of this section are performed, the results shall be documented in the monitoring record required under section 2712 of Article 10 of this chapter. If completion of any one of these steps indicates an inventory reconciliation error that, when corrected, indicates that allowable variations have not been exceeded, then the remainder of the steps need not be completed. If completion of any of these steps indicates that the apparent excessive variation is not due to a release or tank failure, then the remainder of the steps need not be completed.

(m) The transfer of hazardous substances into and out of the underground storage tank may continue while the steps indicated in subsection (k) are being implemented provided the steps indicated are completed within the specified periods. Daily inventory readings and monthly reconciliation shall continue while the steps are being implemented.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25291, 25292

40 CFR 280.43

2647/ Ground Water Monitoring

(a) All owners of existing underground storage tanks/ implementing one of the monitoring alternatives in Section 2641 of this article which requires ground water monitoring shall implement a ground water monitoring system pursuant to Subsections (b) through (j) of this section/

(b) All ground water monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster/

(c) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the underground storage tank bottom///However/ wells shall not extend through laterally extensive clay layers that are below the water table and are at least 5 feet thick///In these situations/ the well shall be terminated 1 to 2 feet into this clay layer/

(d) Ground water monitoring well casings shall extend to the bottom of the boring and be factory perforated from a point 1 foot above the bottom of the casing to an elevation which is either 10 feet above the highest anticipated ground water level or to the bottom of the surface seal or to the ground surface/ whichever is the lowest point above the highest anticipated ground water level/

(e) Ground water monitoring wells shall be constructed as filter-packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well.

(f) All well casings shall have a bottom cap or plug.

(g) Filter packs shall extend at least 2 feet above the top of the perforated zone except where the ground surface is less than 10 feet above the highest ground water level, in which case this requirement may be waived by the local agency provided the filter pack extends to the top of the perforated zone.

(h) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of 2 inches which is installed in a boring whose diameter is at least 4 inches greater than the inside diameter of the casing.

(i) Ground water monitoring wells shall be sealed from the ground surface to the top of the filter pack.

(j) Borings shall be described in accordance with the provisions of Sections 2648 (t) and (u) of this article.

Authority: H&SC 25299.3

Reference: H&SC 25292

2647. Vadose Zone Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize vadose zone monitoring as part of non-visual monitoring shall comply with the requirements of this section. Vapor monitoring, soil-pore liquid monitoring, or a combination of these or other vadose zone monitoring methods may be used.

(b) Vadose zone monitoring shall not be used as the sole release detection method of non-visual monitoring for existing underground storage tanks where the monitoring well cannot be located within the backfill surrounding the tank, or where the existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than ten feet below the bottom of the tank. Ground water levels shall be determined according to the requirements of section 2649(c) of this article.

(c) Vadose zone vapor monitoring shall be conducted continuously. Other vadose zone monitoring shall be conducted at least weekly. At a minimum, all manual sampling shall comply with the requirements of section 2649(g) of this article.

(d) The number, location, and depths of vadose zone monitoring points shall be selected to achieve the objective specified in section 2641(a) of this article. Where possible, monitoring points shall be located within the excavation backfill surrounding the underground storage tank. The owner or operator shall determine the exact location of the underground storage tank before attempting to install monitoring wells and/or devices as approved by the local agency.

(e) Vadose zone vapor monitoring shall comply with the following minimum requirements:

(1) The vapor characteristics of the stored product, or a tracer compound placed in the underground tank system, shall be sufficiently volatile to result in a vapor level that is detectable by the monitoring devices;

(2) Backfill materials and soils surrounding monitoring points shall be sufficiently porous to readily allow diffusion of vapors;

(3) The level of background contamination in the excavation zone and surrounding soils shall not interfere with the method used to detect releases from the underground storage tank;

(4) The monitoring devices shall be designed and operated to detect any significant increase in concentration above the background of the hazardous substance stored in the underground storage tank, a component or components of that substance, or a tracer compound placed in the tank system;

(5) To maximize release detection, the location and depth of each monitoring point shall be determined according to the most probable movement of vapor through the backfill or surrounding soil;

(6) Vapor monitoring wells located in the backfill shall be constructed so that any unauthorized release that may pond at the horizontal interface between the backfill and natural soils can be detected in the vapor well; and

(7) All vapor monitoring wells shall be installed, constructed, and sampled according to the requirements specified in sections 2649(b),(c),(e) and (f) of this article.

(f) Soil-pore liquid monitoring and other forms of vadose zone monitoring shall comply with the following minimum requirements:

(1) The stored substance shall be susceptible to detection by the proposed release detection method;

(2) The stored substance shall not corrode or otherwise attack the materials from which the detection system is constructed or otherwise render the detection system inoperable or inaccurate; and

(3) Site-specific conditions (e.g., precipitation, ground water, soil-moisture, background contamination) shall not interfere with the operability and accuracy of the release detection method.

(g) Compliance with the requirements of subsections (e) and (f) of this section shall be based on a site-assessment, including assessment of the underground storage tank excavation zone.

Authority: Health and Safety Code 25299.3, 25299.9

Reference: Health and Safety Code 25292

40 CFR 280.43

2648/ General Construction and Sampling Methods

(a) Soil and water sampling equipment and materials used to construct a well shall be compatible with the stored hazardous substance and shall not degrade/ capture/ mask/ nor alter the constituents for which analyses will be made/

(b) Representative samples of all imported material used for filter packs//and to construct seals shall be evaluated to determine their acceptability with regard to Subsection (a) of this section/

(c) All drilling tools shall be thoroughly cleaned immediately before a boring is started/

(d) All well casings/ casing fittings/ screens/ and all other components that are installed in the well shall be thoroughly cleaned before installation in the boring/

(e) All soil and water samplers shall be cleaned before each sample is taken/

(f) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the provisions of Subsection (a) of this section. All additives used and the depth in which they were used shall be accurately recorded in the boring log.

(g) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 days for possible analysis for contaminating or interfering constituents.

(h) All ground water monitoring wells shall be appropriately developed until the discharge water contains less than 10 ppm settleable solids.

(i) Well heads shall be provided with a water-tight cap.

(j) Well heads shall be enclosed in a surface security structure that protects the well from the entry of surface water, accidental damage, unauthorized access, and vandalism///This may be accomplished by providing a locked well cap or by securing the facility within which a well is located.

(k) Permanent well information including well identification, well type, well depth, well casing diameters if more than one size is used, and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(l) Surface seals for vapor wells that are completed no more than 5 feet below the bottom of the underground storage tank and which are above any free water zones shall be required at the discretion of the local agency on a site-specific basis.

(m) If surface seals for vapor wells that are completed in or below a free water zone are required, the seal shall not extend below the top of the underground storage tank.

(n) Vapor wells constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface need not be sealed against infiltration of surface water.

(o) The need for surface seals for other types of vadose zone installations shall be determined on a case-by-case basis.

(p) In order to implement monitoring Alternatives 2, 3, 4, and the ground water monitoring well portion of 6, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by a review of all available water level records for wells within 1 mile of the site. Existing site ground water levels shall be established by either water level measurements taken within the last 2 years in all existing wells, for which records are available, that are within 500 feet of the facility and which are perforated in the zone of interest, or by drilling at least 1 exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient if possible and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than 500 feet from the underground storage tank.

(2) The exploratory boring may be of any diameter capable of allowing the detection of first water.

(3) The exploratory boring shall be drilled to first perennial ground water or to a minimum depth of 100 feet for Alternatives 2, 3, and 6 or to a minimum depth of 30 feet for Alternative 4.

(4) If ground water is encountered and ground water monitoring is part of the monitoring alternative, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section and Section 2647 of this article.

(5) If ground water is encountered but monitoring is not required or if the exploratory boring does not encounter ground water it shall be sealed in accordance with the provisions of Subsections 2648 (q) and (s) of this article.

(q) All borings that are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with bentonite grout.

(r) All borings that are converted to vadose zone monitoring wells in which the monitored interval is shallower than the total depth of the boring shall have the portion of the boring which is below the monitored interval sealed with bentonite grout.

(s) All slurry-type grouts used to abandon a boring or for well seals shall be emplaced by the tremie method.

(t) All borings, shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System.//A technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be deemed qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeness of the logs.

(u) All wet zones above the free water zone shall be noted and accurately logged.

(v) If evidence of contamination is detected by sight, smell, or other field analytical methods, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

Authority: H&SC 25299.3

Reference: H&SC 25292

2648. Ground Water Monitoring Requirements

(a) Owners of existing underground storage tanks who utilize ground water monitoring as part of non-visual monitoring shall comply with the requirements of this section. Ground water monitoring may be used in combination with other quantitative or qualitative release detection methods or, where permissible under this section, as the sole release detection method.

(b) Ground water monitoring may be used as the sole release detection method of non-visual monitoring for existing underground tanks only where all of the following conditions exist:

(1) The hazardous substance stored in the underground storage tank is immiscible with water and has a specific gravity of less than one;

(2) Continuous monitoring devices or manual methods are used which are capable of detecting the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells. This capability shall be certified by an independent third party using an appropriate evaluation procedure. Examples of acceptable evaluation procedures are provided in Appendix V of this chapter;

(3) The existing ground water level or the highest anticipated ground water level, including intermittent perched ground water, is less than 20 feet from the ground surface. These ground water levels shall be determined according to the requirements of section 2649(c) of this article;

(4) The hydraulic conductivity of the soil(s) between the underground storage tank and the monitoring wells or devices is at least 0.01 cm/sec (e.g. the soil consists of gravels, coarse to medium sands, or other permeable materials);

(5) The ground water proposed for monitoring has no present beneficial uses (e.g., domestic, municipal, industrial, agricultural supply) or is not hydraulically connected to ground or surface water which has actual beneficial uses; and

(6) Monitoring wells or devices are located within the excavation zone or as close to the excavation zone as feasible.

(c) Compliance with the conditions specified in subsection (b) of this section shall be based on a site-assessment, including assessment of the areas within and immediately below the underground storage tank excavation zone. If ground water monitoring is approved as the sole release detection method of non-visual monitoring, the number and location of the monitoring wells and/or devices as approved by the local agency shall also be based on this site-assessment with minimum requirements as follows:

(1) Single tank - two wells, one at each end of the tank.

(2) Two or three tanks - three wells equally spaced.

(3) Four or more tanks - four wells, at least two of which shall be downgradient and the remainder equally spaced.

(4) Pipelines - additional wells, if needed, as determined by the local agency.

(d) Ground water monitoring shall be conducted at least monthly or continuously. Any continuous monitoring system shall be capable of detecting the presence of hazardous substance on top of the ground water in the monitoring well and allow collection of periodic samples. Ground water samples shall be analyzed by visual observation or field or laboratory analysis as approved by the local agency depending on the method of monitoring and the constituents being evaluated. The local agency may require periodic laboratory analysis where visual observation or field analysis does not provide an adequate degree of detection as compared to that of laboratory analysis. Sampling conducted which requires field or laboratory analysis shall comply with the minimum requirements of section 2649(g) of this article.

(e) The number, location, and depths of ground water monitoring wells shall be selected to achieve the objective specified in section 2641(a) of this article. Monitoring wells shall be located as close as possible to the underground storage tank or the perimeter of the underground storage tank cluster, subject to the review and approval of the local agency.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292

40 CFR 280.43

2649. Well Construction and Sampling Requirements

(a) Owners of existing underground tanks who utilize a qualitative release detection method shall comply with the requirements of this section and any applicable requirements of sections 2644, 2647, and 2648 of this article.

(b) The installation of all monitoring wells and the drilling of all other borings shall be in accordance with local permitting requirements or, in their absence, with the following requirements:

(1) All monitoring wells and all other borings shall be logged during drilling according to the following requirements:

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manual Numbers 4, 5, and 6, published in January of 1986 (available from the Bureau of Reclamation, Engineering and Research Center, Attention: Code D-7923-A, Post Office Box 25007, Denver, Colorado 80225);

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation;

(C) All wet zones above the water table shall be noted and accurately logged. Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log; and

(D) Geologic logs shall be described by a professional geologist or civil engineer, who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System, or by a technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals, provided that the professional must review the logs and assume responsibility for the accuracy and completeness of the logs.

(2) All drilling tools shall be thoroughly steam cleaned immediately before each boring is started;

(3) All well casings, casing fittings, screens, and all other components that are installed in a well shall be thoroughly cleaned before installation;

(4) Soil and water sampling equipment and materials used to construct a monitoring well shall be compatible with the stored hazardous substance and shall not donate, capture, mask, or alter the constituents for which analyses will be made. All perforated casings used in the construction of monitoring wells shall be factory perforated;

(5) Drilling fluid additives shall be limited to inorganic, non-hazardous materials which conform to the requirements of subsection (b)(4) of this section. All additives used shall be accurately recorded in the boring log;

(6) Representative samples of additives, cement, bentonite, and filter media shall be retained for 90 calendar days for possible analysis for contaminating or interfering constituents;

(7) If evidence of contamination is detected by sight, smell, or field analytical methods, drilling shall be halted until a responsible professional determines if further drilling is advisable;

(8) All borings which are converted to vadose zone monitoring wells shall have the portion of the boring which is below the monitored interval sealed with approved grout;

(9) All borings which are not used for ground water or vadose zone monitoring shall be sealed from the ground surface to the bottom of the boring with an approved grout. All slurry-type grouts used to seal an abandoned boring or an abandoned well shall be emplaced by the tremie method; and

(10) All monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering. Surface seals may be required by the local agency.

(c) When installing a vadose zone or ground water monitoring well, the highest anticipated ground water level and existing ground water level shall be determined. Highest anticipated ground water levels shall be determined by reviewing all available water level records for wells within one mile of the site. Existing site ground water levels shall be established either by reviewing all available water level measurements taken within the last two years at all existing wells, within 500 feet of the underground storage tank which are perforated in the zone of interest, or by drilling at least one exploratory boring constructed as follows:

(1) The exploratory boring shall be drilled downgradient, if possible, and as near as possible to the underground storage tank within the boundaries of the property encompassing the facility, but no further than ten feet from the underground storage tank;

(2) The exploratory boring may be of any diameter capable of allowing the detection of first ground water;

(3) The exploratory boring shall be drilled to first perennial ground water, or to a minimum depth of 20 feet for vadose zone monitoring wells, or to a minimum depth of 30 feet for ground water monitoring wells if permitted by site lithology;

(4) If ground water is encountered, and ground water monitoring is the monitoring method, the boring shall be converted to a ground water monitoring well consistent with the provisions of this section; and

(5) If ground water is encountered, but ground water monitoring is not the monitoring method, or if the exploratory boring does not encounter ground water, the boring shall be sealed in accordance with the provisions of subsection (b)(9) of this section.

(d) In addition to the requirements of subsection (b) of this section, all ground water monitoring wells shall be designed and constructed according to the following minimum requirements:

(1) Ground water monitoring wells shall extend at least 20 feet below the lowest anticipated ground water level and at least 15 feet below the bottom level of the underground storage tank. However, wells shall not extend through laterally extensive impermeable zones that are below the water table and that are at least five feet thick. In these situations, the well shall be terminated one to two feet into the impermeable zone;

(2) Ground water monitoring wells shall be designed and constructed as filter packed wells that will prevent the migration of the natural soil into the well and with factory perforated casing that is sized to prevent migration of filter material into the well;

(3) Ground water monitoring well casings shall extend to the bottom of the boring and shall be factory perforated from a point of one foot above the bottom of the casing to an elevation which is either five feet above the highest anticipated ground water level or to within three feet of the bottom of the surface seal or to the ground surface, whichever is the lowest elevation;

(4) All well casings shall have a bottom cap or plug;

(5) Filter packs shall extend at least two feet above the top of the perforated zone except where the top two feet of the filter pack would provide cross-connection between otherwise isolated zones or where the ground surface is less than ten feet above the highest anticipated ground water level, the local agency may reduce the height of the filter pack so long as the filter pack extends at least to the top of the perforated zone. Under such circumstances, additional precautions shall be taken to prevent plugging of the upper portion of the filter pack by the overlying sealing material;

(6) Ground water monitoring wells shall be constructed with casings having a minimum inside diameter of two inches which are installed in a boring whose diameter is at least four inches greater than the outside diameter of the casing;

(7) Ground water monitoring wells shall be sealed in accordance with local permitting requirements or, in their absence, with the Department of Water Resources Standards for Well Construction (Reference Bulletins 74-81 and 74-90 on Water Well Standards are available from the Department of Water Resources, Sacramento);

(8) Seventy-two or more hours following well construction, all ground water monitoring wells shall be adequately developed and equilibrium shall be established prior to any water sampling;

(9) Well heads shall be provided with a water-tight cap and shall be enclosed in a surface security structure that protects the well from surface water entry, accidental damage, unauthorized access, and vandalism. Traffic lids shall be clearly marked as monitoring wells; and

(10) Pertinent well information including well identification, well type, well depth, well casing diameters (if more than one size is used), and perforated intervals shall be permanently affixed to the interior of the surface security structure and the well identification number and well type shall be affixed on the exterior of the surface security structure.

(e) In addition to the requirements of subsection (b) of this section, all vadose zone vapor monitoring wells shall be cased and sealed as follows:

(1) Well casings for vapor monitoring shall be fully perforated except for the portion adjacent to a surface seal and that portion used as a free liquid trap;

(2) Surface seals for vapor wells that are completed no more than five feet below the bottom of the underground storage tank and which are above any free water zones may be required at the discretion of the local agency on a site-specific basis;

(3) If surface seals for vapor wells are completed in or below a potential free water zone, the seal shall not extend below the top of the underground storage tank; and

(4) Vapor wells need not be sealed against infiltration of surface water if constructed wholly within backfill that surrounds the underground storage tank and which extends to the ground surface.

(f) Undisturbed (intact) soil samples shall be obtained from all borings for the installation of monitoring wells and all other borings and analyzed according to the following minimum requirements, unless the local agency waives this requirement under this subsection:

(1) Borings shall be drilled and sampled using accepted techniques which do not introduce liquids into the boring and which will allow the accurate detection of perched and saturated zone ground water. If this cannot be accomplished using acceptable techniques, the requirement for soil sampling may be waived by the local agency provided, however, that installation of the vadose zone or ground water monitoring system shall be completed; and provided further, that once below the water table, borings need not be advanced using the same method that was used in the vadose zone;

(2) Soil samples shall be obtained at intervals of five feet or less and at any significant change in lithology, beginning at the ground surface. Sampling is not required in unweathered bedrock which has little or no permeability;

(3) A soil sample shall be obtained at the termination depth of a dry boring regardless of the spacing interval;

(4) Soil samples shall be of sufficient volume to perform the designated analyses including soil vapor and soil extract analyses and to provide any specified replicate analyses;

(5) Soil samples shall be acquired, prepared, preserved, stored, and transported by methods that are appropriate for the objectives of the investigation which safeguard sample integrity and satisfy the requirements of subsection (g) of this section;

(6) Samples shall be analyzed in a State-certified laboratory by methods that provide quantitative or qualitative results. Lower detection limits shall be verified by the laboratory;

(7) Samples shall be analyzed for one or more of the most persistent constituents that have been stored in the underground storage tank. If the use of the underground storage tank has historically changed, then samples shall be analyzed for at least one constituent from each period of use. If the hazardous substance is known to degrade or transform to other constituents in the soil environment, the analysis shall include these degradation and/or transformation constituents;

(8) If hazardous substances known or suspected to have been contained in the underground storage tank are detected at concentrations in excess of background concentrations (background concentrations shall be applicable only if the constituent occurs naturally at the site), further soil analysis is not necessary pursuant to this subsection. The hazardous substance(s) shall be assumed to have originated from the underground storage tank. In this situation, the remainder of the soil samples need not be analyzed pursuant to these regulations and the owner or operator shall comply with subsection (9) of this section. A permit shall not be granted unless further detailed investigation clearly establishes that the underground storage tank is not the source of the hazardous substance or has been properly repaired since the unauthorized release and that any subsequent unauthorized release from the underground storage tank can be detected despite the presence of the hazardous substance already in the environment; and

(9) If soil analysis indicates that an unauthorized release has occurred, the owner or operator shall comply with the requirements of Article 5 of this chapter and shall replace, repair, or close the underground storage tank pursuant to Article 3, 6 or 7 of this chapter.

(g) The qualitative release detection method shall include consistent sampling and analytical procedures, approved by the local agency, that are designed to ensure that monitoring results provide a reliable indication of the quality of the medium (e.g., ground water, soil-pore liquid, soil vapor, or soil) being monitored. Some acceptable procedures are listed as references in Appendix I, Table C of this chapter. At a minimum, the owner or operator shall provide a written detailed description, to be specified in the permit and to be maintained as part of the records required under section 2712 of Article 10 of this chapter, of the procedures and techniques for:

(1) Sample collection (e.g., purging techniques, water level, sampling equipment, and decontamination of sampling equipment);

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain-of-custody control.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292

40 CFR 280.43

Article 5. Release Reporting and Initial Abatement Requirements

2650. Reporting and Recording Applicability

(a) All unauthorized releases from the primary or secondary container shall be reported according to the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(b) Certain unauthorized releases to secondary containers, as described in Section 25294 of the Health and Safety Code, shall be recorded on the operator's monitoring reports according to Section 2651 of this article.// No other report shall be required if the leak detection monitoring system in the space between the primary and secondary containers can be reactivated within 8 hours.// This provision shall be applicable only to new underground storage tanks as defined in Article 2 of this subchapter.

(c) All other unauthorized releases shall be reported within 24 hours after the release has been, or should have been, detected according to Section 2652 of this article.

(a) The requirements of this article apply to all owners or operators of one or more underground storage tanks storing hazardous substances.

(b) The owner or operator shall record or report any unauthorized release from the underground storage tank, and any spill or overfill, in accordance with the requirements of the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code and this article.

(c) The owner or operator of an underground storage tank with secondary containment shall record any unauthorized release described in section 25294 of the Health and Safety Code in accordance with section 2651 of this article.

(d) Owners or operators subject to the requirements of this article shall record all spills and overfills in accordance with the requirements of section 2651 of this article.

(e) The owner or operator of an underground storage tank shall report to the Board any unauthorized release described in section 25295 of the Health and Safety Code, and any of the following conditions according to section 2652 of this article:

(1) Any unauthorized release recorded under subsections (c) or (d) of this section which the owner or operator is unable to cleanup or which is still under investigation within eight hours of detection;

(2) The discovery by the owner or operator, local agency, or others of released hazardous substances at the site of the underground storage tanks or in the surrounding area. This includes the presence of free product or vapors in soils, basements, sewer, and utility lines and nearby surface or drinking waters;

(3) Unusual operating conditions observed by the owner or operator including erratic behavior of product dispensing equipment, the sudden loss of product from the underground storage tank, or an unexplained presence of water in the tank, unless system equipment is found to be defective, but has not leaked, and is immediately repaired or replaced; and

(4) Monitoring results from a release detection method required under Article 3 or Article 4 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial results.

(f) The reporting requirements of this article are in addition to any reporting requirements specified by section 13271 of Division 7 of the California Water Code and other laws and regulations.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25294, 25295

40 CFR 280.52

2651. Unauthorized Releases Requiring Recording Requirements for Unauthorized Releases

(a) Owners or operators required by section 2650 to record a release or condition shall comply with the requirements of this section.

(a)

(b) The operator's monitoring records, as required under section 2712 of Article 10 of this chapter, report required by subsection 2650(b) of this article shall include:

(1) The operator's name and telephone number;

(1)

(2) A list of the types, quantities, and concentrations of hazardous substances released/;

(2) Method of cleanup/

(3) A description of the actions taken to control and clean up the release;

(3)

(4) The method and location of disposal of the released hazardous substances (indicate whether a hazardous waste manifest is is was/will be utilized)/;

(4) Method of future leak prevention or repair///If this involves a change as defined in Article 10/ Section 2712/ subsection (a)/ of this subchapter/ then appropriate reports pursuant to that article shall also be filed.

(5) A description of the actions taken to repair the underground storage tank and to prevent future releases. If this involves a change as described in section 25286 of the Health and Safety Code, then notification pursuant to that section shall be made.

(5)

(6) If the primary container is to be used, then a A description of how the method used to reactivate the interstitial monitoring system between the primary and secondary container has been reactivated after replacement or repair of the primary containment.

(6) Facility operator's name and telephone number.

(7) The approximate costs for cleanup to be submitted included voluntarily.

(c) The integrity of the secondary containment should be reviewed for possible deterioration under the following conditions:

(1) Hazardous substance in contact with the secondary containment is not compatible with the material used for secondary containment;

(2) The secondary containment is prone to mechanical damage from the mechanical equipment used to remove or clean up the hazardous substance collected in the secondary containment; or

(3) Hazardous substances, other than those stored in the primary containment system, are added to the secondary containment to treat or neutralize the released hazardous substance and the added substance or resulting substance from such a combination is not compatible with the secondary containment.

(d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts (e.g., secondary containment is breached due to deterioration), the release shall be reported pursuant to section 2652 of this article.

(b)

(e) Whenever the local agency shall reviews the operator's monitoring reports and finds that one or more recordable unauthorized releases have occurred, the local agency shall review the information submitted included in the monitoring records pursuant to subsection (a), of this section and shall review the permit, and may inspect the underground storage tank pursuant to the provisions of Article 10, Section 2712, Subsections 2712 (g) (e) and (h) (f), of this subchapter Article 10. If the local agency shall finds that the containment and monitoring standards of Article 3 of this subchapter can no longer continue to be met, declared or the local agency shall revoke the permit require the operator to cease the operation of the underground storage tank system until appropriate modifications are made to allow compliance comply with the standards.

(c) Determination of the secondary container is likely when any of the following conditions exist:

(1) The secondary container will have some loss of integrity due to contact with the stored hazardous substances;

(2) The mechanical means used to cleanup the released hazardous substance could damage the secondary container; or

(3) Hazardous substances, other than those stored in the primary container, are added to the secondary container for treatment or neutralization of the released hazardous substance as part of the cleanup process.

(d) If a recordable unauthorized release becomes a reportable unauthorized release due to initially unanticipated facts the release shall immediately be treated as a reportable release pursuant to Section 2652 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25291, 25292, 25294, 25295

40 CFR 280.52

2652. Reporting, Investigation and Initial Response Requirements for Unauthorized Releases Requiring Reporting

(a) All other unauthorized releases shall be reported as specified in this section.

(a) Owners or operators required under section 2650 of this article to report a release or condition, shall comply with the requirements of this section.

(b) Within 24 hours after the an unauthorized release or condition has been detected, or should have been detected, using required monitoring, the owner or operator shall notify the local agency and the State Office of Emergency Services or the regional Board. The owner or operator shall investigate the condition, take immediate measures to stop the release, and if necessary remove the remaining stored substance from the tank. If an emergency exists, the owner or operator shall also notify the State Office of Emergency Services.

(c) Within 5 working days of detecting ~~the~~ an unauthorized release, the owner or operator ~~or perform~~ shall submit to the local agency a full written report ~~to~~ which, at the minimum, includes all of the following information ~~which~~ to the extent that information is known at the time of filing the report:

(1) Operator's name and telephone number;

~~(1)~~

(2) A ~~l~~list of the types, quantity~~ies~~, and concentrations of hazardous substances released~~/~~;

(3) The approximate date the unauthorized release occurred;

(4) The date the unauthorized release was discovered;

(5) The date the unauthorized release was stopped;

(6) A description of the actions taken to control and/or stop the release;

~~(2)~~

(7) A description of the corrective and remedial actions, including investigations which were undertaken and will be ~~The results of all investigations completed at that time~~ conducted to determine the nature, and extent of soil, ~~or~~ ground water or surface water contamination due to the release~~/~~;

~~(3)~~

(8) The ~~m~~method(s) of cleanup implemented to date, proposed cleanup actions, and ~~approximate cost of actions taken to date~~ a time schedule for implementing the proposed actions~~/~~;

(4)

(9) The method and location of disposal of the released hazardous substance and any contaminated soils or ground water or surface water (including the hazardous waste manifests if [is] is utilized). Copies of any completed hazardous waste manifests for off-site transport of these media shall be attached to the report;

(5)

(10) A description of the proposed method(s) of repair or replacement of the primary and secondary containment. If this involves a change as defined in Subsection 27121(a) of Article 10 of this Subchapter/ described in section 25286 of the Health and Safety Code, then notification appropriate pursuant to that Article section shall also be filed made.

(11) A description of any additional actions taken to prevent future releases.

(6) Facility operator's name and telephone number/

(d) Until investigation and cleanup is are complete, the owner or operator or persons shall submit reports to the local agency and the or regional board, whichever is overseeing the cleanup, every 3 months or at a more frequent intervals, as specified by a responsible agency the local agency or regional board. At a minimum, the reports shall include the an update of the required information required in subsections (c)(2)/ (c)(3)/ and (c)(4) of this section/, and the results of all investigations and corrective actions. Information required by sections 2653 and 2654 shall be submitted as part of the periodic report to the local agency.

(e) Free product removal reports prepared in compliance with section 2655 of this article shall be submitted to the local agency within 45 calendar days of release confirmation.

~~(e) The reporting requirements of this section are in addition to any reporting requirements specified by Section 13271 of Division 7 of the Water Code and other laws and regulations.~~

(f) The owner or operator shall conduct any necessary initial abatement and site characterization actions according to the requirements of sections 2653 and 2654 of this article.

(g) If the test results from either an investigation conducted under subsection (f) of this section, or any other procedures approved by the local agency, do not confirm that a release from the underground storage tank has occurred, no further investigation or corrective action is required.

Authority: Health and Safety Code ~~25288.2~~ 25299.3, 25299.7

Reference: Health and Safety Code ~~25284.4~~ 25286, 25288, 25295
40 CFR 280.50 - 280.53

2653. Initial Abatement Actions

(a) Owners or operators required to conduct initial abatement actions, under section 2652(f) of this article, shall comply with the requirements of this section. Owners and operators shall:

(1) Remove as much of the hazardous substance from the underground storage tank as is necessary to prevent further release to the environment.

(2) Visually inspect any above ground releases or exposed below ground releases and prevent further migration of the released substance into surrounding soils and ground water.

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

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

(5) Investigate to determine the possible presence of free product. If free product is present, begin removal thereof in accordance with the requirements of section 2655 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25295

40 CFR 280.61, 280.62

2654. Initial Site Characterization

(a) Owners or operators required to conduct initial site characterization under section 2652(f) of this article, shall comply with the requirements of this section.

(b) The owner or operator shall promptly assemble information about the underground storage tank site and the nature of the unauthorized release, including information gained while confirming the release or completing any necessary initial abatement actions and free product removal. This information must include, but is not limited to, the following:

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

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

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25295

40 CFR 280.63

2655. Free Product Removal

(a) At sites where investigations under section 2653 of this article indicate the presence of free product, the owner or operator shall comply with the requirements of this section. The owner or operator shall remove free product to the maximum extent practicable, as determined by the local agency, while continuing to take any actions required under sections 2652 through 2654 of this article.

(b) The owner or operator shall conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by *using recovery and disposal techniques* appropriate to the hydrogeologic conditions at the site. Free product removal shall result in proper treatment, discharge or disposal of recovery byproducts in compliance with applicable local, State and Federal regulations.

(c) The owner or operator shall use abatement of free product migration as a minimum objective for the design of the free product removal system.

(d) The owner or operator shall handle any flammable products in a safe manner consistent with state and local requirements.

(e) A free product removal report required by section 2652(e) shall, at a minimum, provide the following information:

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

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

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

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

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

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

(7) The means of disposal and/or proposed disposition of the recovered free product.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25295

40 CFR 280.64

Article 6. Allowable Repairs and Upgrade

2660. Applicability

(a) This article describes the conditions which must be met to allow primary container repairs of underground storage tanks containing motor vehicle fuel not under pressure utilizing the interior coating process, the required repair methodology, and the required underground storage tank testing following repair.

(b) Section 2661 of this article lists the required evaluations which must be completed in order to allow the repair of a primary container.//A satisfactory demonstration of each part of Section 2661 of this article shall be made prior to approval by the local agency of the repair process.

(c) Section 2662 of this article describes the required methodology which must be utilized in the interior coating repair process.

(d) Section 2663 of this article lists the required primary container monitoring which shall be implemented by amendment of the permit by the local agency following primary container repair.//Subsections (a) and (b) of Section 2663 of this article describe the monitoring which shall be performed prior to placing the underground storage tank back in service.

Authority: H&SC 25299.3

Reference: H&SC 25295

(a) This article describes the conditions which must be met to repair or upgrade underground storage tank systems.

(b) Section 2661 of this article describes the repair requirements for underground storage tanks and piping.

(c) Section 2662 of this article describes upgrade requirements for corrosion protection for all underground storage tanks installed on or before January 1, 1984. Underground storage tanks constructed of fiberglass, steel clad with fiberglass or noncorrosive materials do not require upgrade to prevent releases due to corrosion.

(d) Section 2663 of this article describes the upgrade requirements for spill and overfill prevention equipment.

(e) Section 2664 of this article describes the upgrade requirements for underground pressurized piping.

(f) Upgrade requirement for underground storage tanks, for spill and overfill prevention, and for underground pressurized piping shall be completed on or before December 22, 1998.

(g) The owner may line an underground storage tank containing motor vehicle fuel not under pressure as a preventative measure. The owner shall notify the local agency of his intent to line the tank. Prior to lining the tank, soil samples shall be taken to ensure that there has not been an unauthorized release. The owner shall notify the local agency prior to taking soil samples. If there has been no unauthorized release, the owner may line the tank in accordance with section 2662 of this article.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25292, 25292.1, 25296
40 CFR 280

2661. Underground Storage Tank Repairs Evaluation

(a) The evaluations described in subsections (b) through (d) of this section must be completed before a primary container repair can be authorized by the local agency. Failure The local agency shall deny the proposed repair if the owner fails to adequately demonstrate that the repaired primary container will provide continued containment based on the evaluations described below shall be grounds for a local agency to deny the proposed repair.

(b) It shall be determined if the cause of failure mechanism is isolated to the actual failure or is affecting other areas of the underground storage tank, or if any other causes of failure mechanism is affecting the primary container.

(c) One of the following Appropriate tests shall be conducted to determine the thickness of the underground storage tank:(1) An ultrasonic test:(2) and Certification certified by a special inspector that the shell will provide structural support for if the tank is repaired using the interior lining method. The special inspector shall make this certification by entering and inspecting the entire interior surface of the underground storage tank and shall base this certification upon the following procedures and criteria: (A)

(1) If the underground storage tank is made of glass fiber, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. tThe underground storage tank shall be cleaned so that no residue remains on the underground storage tank wall surface. The special inspector shall take interior diameter measurements and, if the cross-section of the tank has compressed more than 1 percent of the original diameter, the underground storage tank shall not be certified and shall also not be returned to service unless the tank is excavated and rehabilitated to correct the compression. The special inspector shall also conduct an interior inspection to identify any area where compression or tension cracking is occurring and shall determine whether additional glass fibre fiber reinforcing is required for certification before the underground storage tank may be lined.

(B)

(2) If the underground storage tank is made of steel, the tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute. This vacuum test is not required if the tank is submerged in ground water by more than 50 percent. The underground storage tank interior surface shall be abrasive blasted completely free of scale, rust, and foreign matter. The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thicknesses recorded on a form that identifies the location of each reading. The tank must be closed in accordance with Article 7, if any area shows metal thickness less than 75 percent of the original wall thickness The specific inspector shall submit any perforations or areas showing corrosion pitting with a brass ballpeen hammer to enlarge the perforation or break through a potentially thin steel area or the underground storage tanks that have has any of the following defects shall not be certified or returned to service:

1/ (A) An underground storage tank which has open seam or a split longer than 3 inches.

2/ (B) An underground storage tank which has a A perforation larger than 1 1/2 inches in diameter or below a gauging opening larger than 2 1/2 inches in diameter.

3/ (C) An underground storage tank with 5 Five or more perforations in any 1 square-foot area. and any single perforation which is larger than 1/2 inch in diameter

4/ An underground storage tank with 20 or more perforations in a 500 square-foot area and any single perforation which is larger than 1/2 inch in diameter/

5/ Any failure or opening within 6 inches of any seam or weld/

(D) Multiple perforations of which any single perforation is larger than 1/2 inch in diameter.

(3) A test approved by the board as comparable to the tests specified in *subparagraph (A) or (B)* subsection (1) or (2) *of this subsection* immediately above.

(d) It shall be demonstrated to the satisfaction of the local agency based on *one of* the tests in subsection (c) of this section that a serious corrosion or structural problem does not exist. If the local agency determines that a serious corrosion or structural problem exists, an interior lining repair may be used *allowed by the local agency* if it can be demonstrated that new or additional corrosion protection will significantly minimize the corrosion and that the existing corrosion problem does not threaten the structural integrity or containment ability of the underground storage tank.

(e) If interior lining is the proposed repair method, then it shall be demonstrated that the primary container has never been repaired using an interior lining.

2662. Repair Methodology

(a) If an interior lining of an underground storage tank is approved by the local agency based on satisfactory demonstration of the issues raised in Section 2661 of this article, then the repair must be accomplished according to the applicable subsections of this section.

(b)

(f) If interior lining (coating) is the method of repair, the material used in the repair shall be applied in accordance with nationally recognized engineering practices.

(c)

(g) The repair material and any adhesives used shall be compatible with the existing tank materials and shall not be subject to deterioration due to contact with the hazardous substance being stored.

(d)

(h) The repair material and lining process shall be listed or certified by a nationally recognized an independent testing organization based on voluntary consensus standards. The requirement shall become effective 1 year after the effective date of these regulations or 1 year after a listing or certification procedure is available, whichever is later.

(i) Holes shall be plugged using self-tapping bolts or boiler plugs or by welding and shall be repaired as follows:

(1) Repair areas shall be covered with epoxy or isophthalic polyester based resin. The resin shall be compatible with the intended use of the tank.

(2) Fiberglass cloth with a minimum weight of 1.5 oz/yd that is silane treated shall be worked completely into the resin base. The resin base shall be installed a minimum of two inches beyond the fiberglass cloth.

(3) All repairs shall include installation of fiberglass cloth with a minimum dimension of 12 x 12 inches centered over the area to be repaired. Larger repairs shall require the cloth to be large enough to provide cloth coverage of at least five inches of cloth bonded to the tank wall, measured from the outermost edge of the repair area, to the cloth's edge.

(4) A second layer of fiberglass cloth of the same weight as specified in subsection 2 above, shall be installed directly over the primary cloth layer, and shall be cut to overlap the primary patch by 1.5 inches on all sides.

(5) This repair shall be allowed sufficient cure time, as determined by the resin manufacturer, to provide an acceptable base for tank lining installation.

(j) Steel underground storage tanks that exhibit external corrosion during the course of inspection or repair shall comply with the cathodic protection requirements in section 2635.

(k) Repaired tanks shall be internally inspected by a coatings expert for conformance with the standards under which it was repaired. Certification of this repair work shall be provided to the local agency by the owner or operator and the party performing the internal inspection.

(l) Repairs to non-steel underground storage tanks shall be properly conducted in accordance with the tank manufacturer's specifications.

(m) Sections of piping and fittings that have released product as a result of corrosion or other damage must be replaced. Soil samples shall be taken in accordance with the requirements in section 2672(d) of Article 7 of this chapter.

(n) Repaired tanks and piping must be tested for tightness within 30 calendar days following the date of completion of the repair in accordance with the tank manufacturer's specifications. Tanks that fail any test shall be repaired in accordance with provisions of this section, replaced in accordance with Article 3, or closed in accordance with Article 7 of this chapter.

(o) Underground storage tank owners and operators must maintain records of repairs for the remaining operating life of the tank that demonstrate compliance with the requirements of this section.

(p) A vapor or ground water monitoring system shall be installed to continuously monitor the repaired underground storage tank for future unauthorized releases, in accordance with section 2647 or 2648, if no secondary containment system exists.

Authority: Health and Safety 25299.3, 25299.7

Reference: Health and Safety 25296

40 CFR 280.33

2662. Underground Storage Tank Upgrade

(a) All underground storage tanks containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in Article 3 before December 22, 1998.

(b) Owners of motor vehicle fuel tanks made of steel shall, on or before December 22, 1998, retrofit those tanks with secondary containment meeting the requirements specified in Article 3, or provide both interior lining and exterior cathodic protection by complying with the following upgrade requirements:

(1) Tank owners shall provide interior lining by complying with all requirements set forth in section 2661 except subsection (p) and those pertaining to non-steel tank and piping, and

(2) Cathodic protection shall be designed, installed, and inspected as specified in section 2635(a)(2). All cathodic protection wells must be constructed in accordance with applicable state and local well regulations.

(3) The upgraded underground storage tank interior shall be inspected by a coatings expert within ten years of lining and every five years thereafter as follows:

(A) The tank shall be cleaned so that no residue remains on the tank walls.

(B) The tank shall be vacuum tested at a vacuum of 5.3 inches of Hg for no less than one minute.

(C) The inspector shall take interior diameter measurements and visually inspect the lining.

(D) If the liner shows discontinuity, compression or tension cracking or the tank cross-section has compressed more than one percent of the diameter measurement made at the time of lining, the tank shall be replaced or closed in accordance with Articles 3 or 7, respectively.

(E) The entire tank interior shall be tested using a thickness gauge on a one-foot grid pattern with wall thickness recorded on a form that identifies the location of each reading. If any area shows metal thickness less than 75 percent of the original wall thickness the tank shall be closed in accordance with Article 7.

(4) The upgraded underground storage tank shall be replaced or closed in accordance with Articles 3 or 7 at the end of the tank's operational life.

Authority: Health and Safety 25299.3, 25299.7

Reference: Health and Safety 25296
40 CFR 280.21

2663. Primary Container Monitoring Spill and Overfill Prevention Equipment Upgrade Requirements

(a) After any repair, the primary container shall be demonstrated to be capable of containing the stored hazardous substance by satisfactorily passing the underground storage tank test as described in Section 2643 of Article 4 of this subchapter.//The underground storage tank shall also be vacuum tested at a vacuum of 5/3 inches (135 mm) Hg for 1 minute. The vacuum test shall not be
required if technology is not available for testing the underground storage
tank on-site using accepted engineering practices.

(b) All pipelines shall be pressure tested following repair to assure the adequacy of the repair.//The testing shall be accomplished using accepted procedures.//Some acceptable procedures for pressure testing are provided in Appendix I of this subchapter.

Authority: H&SC 25299.3

Reference: H&SC 25296

(a) Underground storage tank systems shall have an overfill prevention system and a spill container which meets the requirements specified in section 2635(c) of this article. The overfill prevention equipment is not required if the spill container is in an observable area and can catch any spill. This requirement applies to all existing underground storage tanks, regardless of the date of installation, and must be complied with on or before December 22, 1998.

(b) Owners or operators must use care to prevent releases due to spilling or overfilling. The owner, operator, or their agent must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

Authority: Health and Safety 25299.3, 25299.7

Reference: Health and Safety 25292, 25292.1
40 CFR 280.21

2664. Underground Pressurized Piping Upgrade Requirement

(a) All underground pressurized piping containing hazardous substances, other than those which contain motor vehicle fuel, shall be retrofitted with secondary containment meeting the requirements specified in section 2635(b) by December 22, 1998.

(b) All underground pressurized piping containing motor vehicle fuel installed on or before January 1, 1984 shall be retrofitted with secondary containment unless the owner or operator demonstrates to the local agency that the piping is constructed of fiberglass reinforced plastic, cathodically protected steel, or other materials compatible with stored products and resistant to corrosion. The secondary containment system shall meet the requirements specified in section 2635(b). Any retrofitting of such piping which is required shall be completed no later than December 22, 1998.

(c) All underground pressurized piping shall be equipped with automatic line leak detectors no later than December 22, 1990.

(d) All underground pressurized piping and secondary containment shall be tested for tightness after installation and annually in accordance with the requirements specified in section 2635(b)(4) and (5).

Authority: Health and Safety 25299.3, 25299.7

Reference: Health and Safety 25292,25292.1

40 CFR 280.21

Article 7. Closure Requirements

2670. Applicability

(a) This article defines temporary and permanent closure and describes the nature of activities which must be accomplished in order to protect water quality in each of these situations.

(b) The temporary closure requirements of section 2671 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased but where the underground storage tank owner or operator proposes to retain the ability to use the underground storage tank within 2 years will again be used for the storage of hazardous substances within the next 12 consecutive months. At the end of 12 months, the local agency may approve an extension of the temporary closure period for a maximum additional period of up to 12 months if the tank system meets the requirements for new underground storage tank system or the upgrade requirements for existing tanks. Section 2671 of this article does not apply to underground storage tanks that are empty as a result of the withdrawal of all stored material during normal operating practice prior to the planned input of additional hazardous substances consistent with permit conditions.

(c) The permanent closure requirements of section 2672 of this article shall apply to those underground storage tanks in which the storage of hazardous substances has ceased and where the owner or operator has no intent within the next 2 years to use the underground storage tank the tanks will not be used, or are not intended for use, for storage of hazardous substances within the next 12 consecutive months.

(d) The requirements of this article do not apply to those underground storage tanks in which hazardous substances are continued to be stored but no filling or withdrawal has been made. *even though there is no use being made of the stored substance.* In these cases, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(e) During the period of time between cessation of hazardous substance storage and actual completion of underground storage tank closure pursuant to section 2671 or 2672 *of this article*, the applicable containment and monitoring requirements of Articles 3 or 4 of this subchapter shall continue to apply.

(f) At least thirty (30) days *P*prior to closure, or for such shorter period of time as may be approved by the local agency, the underground storage tank owner who intends to close a tank shall submit to the local agency a proposal describing how the owner intends to comply with section 2671 or 2672 of this article, as appropriate. *The requirement for prior submittal is waived if the storage of hazardous substances ceases as a result of an unauthorized release or to prevent or minimize the effects of an unauthorized release.//In this situation, the underground storage tank owner shall submit the required proposal within 14 days of either the discovery of an unauthorized release or the implementation of actions taken to prevent or minimize the effects of the unauthorized release.*

(g) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release do not qualify for temporary closure pursuant to section 2671 of this article until the underground storage tank owner demonstrates to the local agency's satisfaction that appropriate authorized repairs have been made which would ~~allow~~ make the underground storage tank ~~to be~~ capable of storing hazardous substances ~~pursuant to~~ in accordance with the permit issued by the local agency.

(h) Underground storage tanks that have ~~experienced~~ emitted an unauthorized release and that cannot be repaired by authorized methods must be permanently closed pursuant to requirements of section 2672 ~~of this article~~.

(i) Underground storage tanks, closed on-site by cleaning and filling with an inert solid prior to January 1, 1984, need not comply with the closure requirements in this section. However, hazardous substances released from such tanks before or after the closure, shall be reported by the owner pursuant to Article 5 of this chapter and shall be cleaned up pursuant to section 13304 of the Water Code and any other applicable law or regulations.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298

40 CFR 280.70, 280.71, 280.73

2671. Temporary Closure Requirements

(a) This section applies to those underground storage tanks in which storage has ceased but where the owner or operator proposes to retain the ability to use the underground storage tank within 2 years for the storage of hazardous substances.

(b)

(a) The owner or operator shall comply with all of the following requirements to complete and maintain temporary closure of an underground storage tank:

(1) All residual liquid, solids, or sludges shall be removed and handled pursuant to the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank, either in part or as a whole, shall be inerted, as often as necessary purged of the flammable vapors to levels that would will preclude an explosion or to such lower levels as may be required by the local agency.

(3) The underground storage tank may be filled with a noncorrosive liquid that is not a hazardous substance. This liquid must be tested and the test results submitted to the local agency prior to its being removed from the underground storage tank at the end of the temporary closure period.

(4) Except for required venting, all fill and access locations and piping shall be sealed utilizing locked caps or concrete plugs.

(5) Power service shall be disconnected from all pumps associated with the use of the underground storage tank ~~except if~~ unless the ~~pump~~ power services some other equipment which is not being closed such as the impressed current cathodic protection system.

~~(c)~~

(b) The monitoring required pursuant to the permit may be modified ~~by~~ ~~eliminated~~ by the local agency during the temporary closure period ~~by~~ ~~the~~ ~~local~~ ~~agency~~. In making a decision to modify such monitoring ~~T~~the local agency shall consider~~, in making the above decision~~ the need to maintain monitoring in order to detect unauthorized releases that may have occurred during the time the underground storage tank was used but that have not yet ~~reached~~ ~~the~~ ~~monitoring~~ ~~location~~ and been detected.

~~(d)~~

(c) The underground storage tank shall be inspected by the owner or operator at least once every 3 months to ~~assure~~ verify that the temporary closure ~~action~~ measures are still in place. ~~This~~ Such inspection shall include at least the following actions:

(1) Visual inspection of all locked caps and concrete plugs.

(2) If locked caps are utilized, then at least one shall be removed to determine if any liquids or other substances have been added to the underground storage tank or if there has been a change in the quantity or type of liquid added pursuant to subsection ~~(b)~~ (a)(3) of this section.

(d) The owner may terminate the temporary closure and reuse the underground storage tank only if the local agency approves the reuse according to the requirements specified in sections 2662, 2663, and 2664.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298

40 CFR 280.70

2672. Permanent Closure Requirements

(a) Owners of underground storage tanks subject to permanent closure shall comply with either subsection (b) of this section for underground storage tank removal or subsection (c) of this section for closure in place. It is not essential that all portions of an underground storage tank be permanently closed in the same manner; however, all actions shall comply with the appropriate subsection of this section. Subsections (d) and (e) of this section regarding no discharge demonstration applies to all underground storage tanks subject to permanent closure.

(b) Owners of underground storage tanks proposing to remove the underground storage tank subject to permanent closure shall comply with applicable provisions of Chapter 6.5 of Division 20 of the Health and Safety Code/ in addition to the following and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed, and handled as a hazardous waste or recyclable materials in accordance with Chapter 6.5 of the Health and Safety Code.

(2) If the underground storage tank contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the underground storage tank/ ~~either in part or as a whole/~~ shall be inerted ~~purged of the flammable vapors~~ to levels that ~~would~~ shall preclude explosion or such lower levels as may be required by the local agency.

(3) When an underground storage tank or any part of an underground storage tank is to be disposed of, the owner must document to the local agency that proper disposal has been completed. This documentation shall be submitted within the time frame specified by the local agency.

(4) An owner of an underground storage tank or any part ~~of an underground storage tank~~ thereof that is destined for a specific reuse shall ~~identify to~~ advise the local agency, within the time frame specified by that agency, of:

(A) ~~t~~The ~~future~~ name of the new owner of the underground storage tank ~~owner~~/;

(B) Name of the new operator/;

(C) The location of use/; and

(D) ~~n~~Nature of use.

~~(5) An owner of an underground storage tank or any part of an underground storage tank that is designated for reuse as storage shall identify this reuse to the local agency~~

(c) Closure of Owners of underground storage tanks in place subject to permanent closure where the tanks are approved to be closed in place shall comply with the applicable provisions of Chapters 6.5 and 6.7 of Division 20 of the Health and Safety Code/ in addition to all of the following and with the following requirements:

(1) All residual liquid, solids, or sludges shall be removed and handled as a hazardous waste or recyclable materials in accordance with Chapters 6.5 and 6.7 of the Health and Safety Code.

(2) All piping associated with the underground storage tank shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.

(3) The underground storage tank, except for the piping that is closed pursuant to subsection (2) of this subsection, shall be completely filled with an inert solid, unless the owner intends to use the underground storage tank for the storage of a nonhazardous substance which is compatible with the previous use of the underground storage tank and its construction.

(4) A notice shall be placed in the deed to the property///The notice shall describe the exact vertical and areal location of the closed underground storage tank/ the hazardous substances it contained/ and the closure method/

(d) The owner of an underground storage tank being closed pursuant to this section shall demonstrate to the satisfaction of the local agency that no unauthorized release has occurred. This demonstration can shall be based on the on-going leak detection monitoring, ground water monitoring, or soil sampling analysis and/or water analysis if water is present in the excavation. This analysis shall be performed during or immediately after closure activities. If feasible the demonstration is based on soil sample analysis, soil samples shall be taken and analyzed according to the following requirements:

(1) If the underground storage tank or any portion thereof is removed, then soil samples shall be taken from the soils immediately beneath the removed portions of the tank, a minimum of two feet into native material at each end of the tank shall be taken in accordance with section 2649. A separate sample shall be taken for every 200 square-feet for underground storage tanks or every for each 20 lineal-feet of trench for piping, at a minimum.

(2) If the underground storage tank or any portion thereof is not removed, soils sampling pursuant to Section 2645 of Article 4 of this subchapter shall be implemented, if feasible, at least one boring shall be taken as close as possible to the midpoint beneath the tank utilizing a slant boring (mechanical or manual), or other appropriate method such as vertical borings drilled on each long dimensional side of the tank.

If the depth to ground water is less than 20 feet, then a ground water monitoring well shall be installed adjacent to the tank and/or piping in the verified downgradient direction.

(3) Soils shall be analyzed in accordance with section 2649 for all constituents of the previously stored hazardous substances and their breakdown or transformation products. The local agency may waive the requirement for analysis of all constituents, breakdown or transformation products when key constituents that pose a significant threat to water quality or the environment can be identified for analysis.

(e) The detection of any unauthorized release shall require compliance with the reporting requirements of Article 5 of this ~~subchapter~~ chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25298

40 CFR 280.71

Article 8. Categorical and Site-Specific Variance Procedures

2680. General Applicability of this Article

(a) This article sets up procedures for categorical and site-specific variances from the requirements for the construction and monitoring of new and existing underground storage tanks as described in Chapter 6.7 of Division 20 of the Health and Safety Code and Articles 3 and 4 of this ~~subchapter~~. A site-specific variance, if approved, would apply only to the specific site(s) approved for a variance. A categorical variance, if approved, would apply to the region, area, or circumstances approved for a variance. A categorical variance application shall include more than one site or shall be non-site specific. These procedures are in addition to those established by the appropriate sections of Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2681 of this article specifies the procedures that must be followed by the applicant and the ~~State~~ Board for categorical variance requests.

(c) Section 2682 of this article specifies the procedures that must be followed by the applicant, local agency, and the regional board for site-specific variance requests.

Authority: Health and Safety Code 25299.3

Reference: Health and Safety Code 25299.4

2681. Categorical Variances

(a) A categorical variance allows an alternative method of construction or monitoring which is applicable at sites in to more than one local agency's jurisdiction. (Application for a categorical variance shall be made by the petitioner to the State Board on a form provided by the State Board.

(b) Application for a categorical variance shall include, but not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A description of the proposed alternative program, method, device, or process.

(3) A description of the region, area, or circumstances under which the variance would apply.

(4) Clear and convincing evidence that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

(6) Written comments or recommendations from impacted local agencies.

(6)

(7) An initial payment fee of $11,000.

(c) The applicant will be required to pay a fee based on the actual costs of considering the application. The State Board will bill the applicant for additional costs or refund any remaining part unused portion of the initial fee, if necessary.

(d) The State Board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

(e) The State Board shall complete any documents necessary to satisfy the California Environmental Quality Act (Division 13), commencing with Section 21000, of the Public Resources Code).

(f)

(e) The State Board shall remand the application to the appropriate regional board if it determines that the application falls within section 2682 of this article.

(g)

(f) The State Board shall hold at least 2 public hearings as set forth in section 25299.4 of the Health and Safety Code. in different areas of the state within 180 days of receipt of a completed variance application to consider the request for a categorical variance.

(h) Upon the close of a hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed 30 days, to allow any interested person to file additional exhibits, reports, or affidavits,

(g) If the State Board grants the variance, it will prescribe the conditions the applicant must maintain and will describe the specific alternative for which the variance is being granted.

(h) All permit applicants who intend to utilize an approved categorical variance shall attach a copy of the approved variance to the permit application submitted to the local agency. The local agency shall review the application and categorical variance to determine if the variance applies to the specific site. If the local agency concurs in the applicability of the variance applies, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the State Board provided all other permit conditions are met.

(i) The State Board shall modify or revoke a categorical variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The State Board shall not modify or revoke a categorical variance until it has followed procedures comparable to those prescribed in this section and Subchapters 1.5 and 6 of Division 3 of Title 23 of the California Code of Regulations this chapter. The State Board shall notify all affected local agencies of the any modification or revocation. Local agencies shall appropriately modify or revoke all permits which were based on the categorical variance.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25299.4

2682. Site-Specific Variances

(a) A site-specific variance allows an alternative method of construction or monitoring which would be applicable at one or more sites within the local agency's jurisdiction. Application for a site-specific variance shall be made by the permittee to the appropriate regional board on a form provided by the Regional Board.

(b) At least 60 days Prior to applying to the regional board for a variance, the permittee applicant shall submit a complete construction and monitoring plan to the local agency. The proposed alternative construction or monitoring methods which may require a variance shall be clearly identified. If the local agency decides that a variance would be necessary to approve the specific methods or if the local agency does not act within 60 days of its receipt of the permittee's a complete construction and monitoring plan from the permittee/applicant, then the applicant may proceed with a submit the variance application to the regional board.

(c) An Application for a site-specific variance shall include, but need not be limited to:

(1) A description of the provision from which the variance is requested.

(2) A detailed description of the complete construction and monitoring methods to be used. The proposed alternative program, method, device, or process shall be clearly identified.

(3) Any special circumstances on which the applicant ~~would rely~~ relies to justify the findings necessary for the variance, as prescribed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code.

(4) Clear and convincing evidence ~~]~~that the proposed alternative will adequately protect the soil and the beneficial uses of waters of the state from an unauthorized release.

(5) Any ~~documents necessary to satisfy~~ environmental information or documentation requested by the regional board pursuant to the California Environmental Quality Act (Division 13, commencing with section 21000~~/~~ of the Public Resources Code).

(6) A list including names and addresses of all persons known to the applicant who may be affected by or may be interested in the variance request.

~~(8)~~

(7) A fee of $2,750 for variance requests at one site. A fee of $5,500 for variance requests at more than one site within one local agency's jurisdiction.

(d) The regional board shall review all applications submitted and shall notify the applicant in writing within 30 days of receipt of the application as to whether or not the application is complete.

(e) The regional board shall hold a hearing on the proposed alternative variance as specified in section 25299.4(c) of the Health and Safety Code. Within 60 days after receiving a complete variance application, however, the hearing shall be held after the 30-day period allowed by the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code for local agencies to join in the application.

(f) Any site-specific variance shall prescribe appropriate additional conditions and shall describe the specific alternative system for which the variance is being granted. The regional board shall notify the applicant, and the local agency, and the Board of its decision.

(g) The regional board shall consider the local agency's recommendations in rendering its decision.//The regional board shall consider the completeness and accuracy of the information provided by the applicant in Subsection (e) of this section in rendering its decision.

(h)

(g) If the variance request is approved, the local agency shall issue a permit to the applicant which includes the conditions prescribed by the regional board. A local agency shall not modify the permit unless it determines that the modification is consistent with the variance that has been granted.

(i)

(h) The regional board shall modify or revoke a variance upon a finding that the proposed alternative does not adequately protect the soil and the beneficial uses of the waters of the state from an unauthorized release. The regional board shall not modify nor revoke the variance until it has followed procedures comparable to those prescribed in this section and Chapters 1.5 and 6 of Division 3 of Title 23 of the California Code of Regulations. The regional board shall notify the local agency and the Board of the modification or revocation. The local agency shall modify or revoke the permit for the site.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25299.4

Article 9. Local Agency Additional Standards Request Procedures

2690. Applicability

(a) This article sets up procedures for local agencies to request State Board authorization for more stringent design and construction standards other than those set by Article 3 of this subchapter. These procedures are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

Authority: Health and Safety 25299.3, 25299.7

Reference: Health and Safety 25299.2, 25299.4

2691. Additional Standards Request Procedures

(a) A local agency application for additional design and construction standards shall include:

(1) A description of the proposed design and construction standards which are in addition to those described in Article 3 of this subchapter.

(2) Clear and convincing evidence that the additional standards are necessary to would adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases.

(3) Any documents required by the California Environmental Quality Act (Division 13, commencing with section 21000 of the Public Resources Code).

(4) An initial fee of $5,500.

(b) The applicant shall be required to pay a fee based on the actual costs of considering the application. The Board will bill the applicant for additional costs or refund any ~~remaining part~~ unused portion of the initial fee~~, if necessary~~.

(c) The Board shall conduct an investigation and public hearing on the proposed standards and ~~their~~ the need to protect the soil and beneficial uses of the water before determining whether to authorize the local agency to implement additional standards.

(d) The Board may modify or revoke a previously issued authorization allowing the implementation of additional standards if it finds that, based on new evidence, the additional standards are not necessary to adequately protect the soil and beneficial uses of the waters of the state from unauthorized releases. The Board shall not modify nor revoke the authorization until it has followed procedures comparable to those presented in ~~sub~~Chapters 1.5 and 6/of ~~this chapter~~ Division 3 of Title 23 of the California Code of Regulation.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25299.4

Article 10. Permit Application, Annual Quarterly Report and Trade Secret Requirements

2710. General Applicability of Article

(a) This article describes specific administrative actions that must be accomplished undertaken by all underground storage tank owners, local agencies, and the State Board relative to issuing permits for underground storage tanks. These actions are in addition to those established by Chapter 6.7 of Division 20 of the Health and Safety Code.

(b) Section 2711 of this article lists the information that must be submitted by the underground storage tank owner to the local agency as part of the permit application.

(c) Section 2712 of this article describes the conditions associated with a permit for the operation of an underground storage tank that local agencies must include in all permits issued and the conditions which local agencies must meet prior to permit issuance.

(d) Section 2713 of this article describes the annual quarterly report requirements for local agencies for unauthorized releases.

(e) Section 2714 of this article specifies conditions that must be met by an underground storage tank owner when requesting trade secret protection for any information submitted to the local agency, State Board, or regional board. It also specifies how the local agency, the State Board, or regional board shall consider the request and how they shall maintain the information if the trade secret request is accepted.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25284, 25285, 25286, 25288, 25289, 25290, 25293

2711. Permit Application and Information

(a) The permit application shall include, but not be limited to, the following information to the extent such information is known to the permit applicant:

(1) The name and address of the person who owns the underground storage tank or tanks.

(2) The name, location, mailing address, and phone number where the underground storage tank is located, and type of business, if any, involved.

(3) The name, address, and telephone numbers of the underground storage tank operator and 24-hour emergency contact person.

(4) The name and telephone number of the person making the application, if other than the owner.

(5) A description of the underground storage tank including, but not limited to, the underground storage tank and auxiliary equipment manufacturer, year date of manufacture/ installation and tank capacity/ history of repairs/ and operation methods scheduled/

(6) In the case of new underground storage tanks installed with systems for secondary containment utilizing membrane liners/ a certification by the membrane liner material manufacturer that the membrane liner meets the standards set forth in Subsection 2631(c) and (3)(1) and (2) of Article 3 of this subchapter/ or/ if applicable/ Subsection 2633(e)(1) and (2) of Article 3 of this subchapter/ and a certification by the membrane liner fabricator that the membrane liner meets the standards set/forth in Subsection 2631(c) and (3)(3) of Article 3 of this subchapter/

(7)

(6) Construction details of the underground storage tank and any auxiliary equipment including, but not limited to, type and thickness of primary containment, type and thickness of secondary containment (if applicable), installation procedures/ backfill/ spill and overfill prevention equipment, interior lining, wrapping/ and cathodic corrosion protection methods (if applicable).

(7) A description of the piping including, but not limited to, the type of piping system, construction, material, corrosion protection and leak detection.

(8) A scaled diagram or design or as-built drawing which indicates the location of the underground storage tank (underground storage tank, piping, auxiliary equipment) with respect to buildings or other landmarks.

(9) The description of the proposed monitoring program including, but not limited to, the following where applicable:

(A) Visual inspection procedures;

(B) Underground storage tank testing release detection methods or inspection procedures;

(C) Inventory reconciliation including gauging and reconciliation methods;

(D) Soils sampling locations and methods and analysis procedures Pipeline leak detection methods;

(E) Vadose zone sampling locations, and methods and analysis procedures;

(F) Ground water well(s) locations construction and completion development methods, sampling, and analysis procedures; and

(G) Frequency and sensitivity of any monitoring method sensing instrument or analytical method.

(10) A list of all the substances which previously, currently, or are proposed to be stored in the underground storage tank or tanks.

(11) Documentation to show compliance with State and Federal financial responsibility requirements applicable to underground storage tanks containing petroleum.

~~(11)~~

(12) If the owner or operator of the underground storage tank is a public agency, the application shall include the name of the supervisor of the division, section, or office which operates the underground storage tank.

~~(12)~~

(13) The permit application must be signed by:

(A) The owner of the underground storage tank or a duly authorized representative of such owner;

(B) If the tank is owned by a corporation, partnership, or public agency, the application must be signed by;

~~(A)~~ 1. A principal executive officer at the level of vice-president or by an authorized representative. The representative must be responsible for the overall operation of the facility where the underground storage tank(s) ~~is~~ are located;

~~(B)~~ 2. A general partner proprietor; or

~~(C)~~ 3. A principal executive officer, ranking elected official, or authorized representative of a public agency.

(b) The owner or operator must inform the local agency of any changes to the information provided in subsection (a) of this section within 30 calendar days unless required to obtain approval before making the change.

(b)

(c) The permit application (Form A dated 5/91 and Form B dated 7/91) shall be accompanied by the local government and state surcharge fees set by the local agency.

(d) The local agency shall provide the California Association of Environmental Health Administrators with copies of permit applications in accordance with the requirements of Chapter 6.7 of the Health and Safety Code.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25286, 25287

2712. Permit Conditions

(a) As a condition of any permit to operate an underground storage tank, the permittee shall report to the local agency which has permitting authority within 30 days after any changes in the usage of any underground storage tank, including:

(1) The storage of new hazardous substances;

(2) Changes in monitoring procedure; or

(3) The replacement or repair of all or part of any underground storage tank;

(b)

(a) As a condition of any permit to operate an underground storage tank, the permittee owner or operator shall report to the local agency any comply with the reporting and recording requirements for unauthorized releases and corrective actions, as defined in Article 2 of this subchapter, within the time frame specified in Subsections 2652 (b) and (c) of Article 5 of this subchapter.

(c)

(b) Written records of all monitoring and maintenance performed shall be maintained on-site or off-site at a readily available location, by the operator if approved by the local agency, for a period of at least 3 years. from the date the monitoring was performed. These records must be made available, upon request within 36 hours, to the local agency or the Board. The local agency may require the submittal of the monitoring records or a summary at a frequency that they may establish. The written records of all monitoring performed in the past 3 years shall be shown to the local agency, regional board, State Board, or duly authorized representative upon demand during any site inspection. Monitoring records shall include:

(1) The date and time of all monitoring or sampling;

(2) Monitoring equipment calibration and maintenance records;

(3) The results of any visual observations;

(4) The results of all sample analysis performed in the laboratory or in the field, including laboratory data sheets and analysis used;

(5) The logs of all readings of gauges or other monitoring equipment, ground water elevations, or other test results; and

(6) The results of inventory readings and reconciliations.

~~(d)~~

(c) A permit to operate issued by the local agency shall be effective for 5 years. The permit shall show the state underground storage tank identification number(s) for which the permit was issued. Before ~~A~~a local agency ~~shall not~~ issues a new permit or renewal to operate an underground storage tank ~~until~~ the local agency shall inspect~~s~~ the underground storage tank and determine~~s~~ that the underground storage tank complies with the provisions of these regulations. ~~The underground storage tank owner shall apply to the local agency for permit renewal at least 180 days prior to the expiration of the permit.~~

~~(e) The local agency shall have 18 months after it establishes a program implementing this subchapter to issue permits for all existing underground storage tanks.~~

~~(f)~~

(d) Permits may be transferred to new underground storage tank owners if: (1) the new underground storage tank owner does not change any conditions of the permit, (2) the transfer is registered with the local agency within 30 days of the change in ownership, and (3) ~~any necessary modifications are made to the information in the initial permit application due to the change in ownership.~~ State permit application forms are completed to show the changes. Transferred permits shall expire and be renewed on the original expiration date. A local agency may review, modify, or terminate the permit to operate the underground storage tank upon receiving ~~the~~ an ownership transfer request.

(e) The local agency shall not renew an underground storage tank permit unless the underground storage tank has been inspected by the local agency or a special inspector within the prior 3 years and the inspection indicated that the underground storage tank complied with Article 3 or 4 of this chapter, as applicable, and with all existing permit conditions. The inspection shall be conducted as specified in the appropriate subsection of Chapter 6.7 of Division 20 of the Health and Safety Code. If the inspection indicated noncompliance then the local agency must verify by a follow-up inspection that all required corrections have been implemented before renewing the permit.

(f) Within 30 days of receiving an inspection report from either the local agency or the special inspector, the permit holder shall implement the corrections specified in the inspection report and comply with either Article 3 or Article 4 of this chapter, as appropriate, and the permit conditions. The corrective action shall include all of the recommendations made by the local agency or special inspector. The local agency may waive the implementation of any of the special inspector's recommendations based on a demonstration by the permit holder to the local agency's satisfaction that the failure to implement the recommendation will not cause an unauthorized release.

(g) The local agency shall take appropriate enforcement action pursuant to section 25299 of the Health and Safety Code or prohibit the operation of the tank systems if the owner or operator fails to comply with the monitoring

requirements specified in Article 3 or 4 of this chapter or the reporting requirements specified in Article 5 of this chapter.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25284, 25285, 25286, 25288, 25289, 25293, 25294 40 CFR 280

2713. Annual Transmittal of Unauthorized Release Reports

(a) The local agency shall notify the State Board of any changes in permits as defined in Subsections (d) or (f) of Section 2712 of this article or any unauthorized releases as defined in Article 1 of this subchapter annually on the State Board's annual report forms or other methods determined by the State Board.//This information shall be submitted to the State Board by March 1 of each year covering the prior calendar year.

Each local agency shall transmit unauthorized release information, submitted by the owner or operator pursuant to Article 5 of this chapter to the appropriate regional board.

(b) Local agencies shall transmit unauthorized release update report information, submitted by the owner or operator pursuant to section 2712 of this Article, to the appropriate regional board for sites where they are overseeing cleanup. Local agencies shall transmit this unauthorized release update information on a quarterly schedule established by the Board.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25286.

2714. Trade Secret Provisions

(a) Any person providing information in an application for a permit to operate an underground storage tank or for renewal of the permit or application for a categorical or site-specific variance, shall, at the time of its submission, identify all information which the person believes is a trade secret and submit a legal justification for the request for confidentiality. The information which must be submitted includes:

(1) Which portions of the information submitted are believed to be trade secrets;

(2) How long this information should be treated as confidential;

(3) Measures that have been taken to protect this information as confidential; and

(4) A discussion of why this information is ~~a~~ subject to trade secret/ protection, including references to statutory and case law as appropriate.

(b) If the local agency, the ~~State~~ Board, or the regional board determines that a request for ~~confidentiality~~ trade secret protection is clearly valid, the material shall be given trade secret protection as discussed in subsection (f) of this section.

(c) If the local agency, the State Board, or the regional board determines that the request for confidentiality trade secret protection is clearly frivolous, it will send a letter to the applicant stating that the information will not be treated as a trade secret unless the local agency, the State Board, or the regional board is instructed otherwise by a court within 10 working days of the date of the letter.

(d) If the validity of the request for confidentiality trade secret protection is unclear, the local agency, the State Board, or the regional board will inform the person claiming trade secrecy that the burden is on him to justify the claim. The applicant will be given a fixed period of time to submit such additional information as the local agency, the State Board, or the regional board may request. The local agency, the State Board, or the regional board shall then evaluate the request on the basis of the definition of "trade secrets" contained in the appropriate section of Chapter 6.7 of Division 20 of the Health and Safety Code and issue its decision. If the local agency, the State Board, or the regional board determines that the information is not a trade secret, it shall act in accordance with subsection (c) of this section.

(e) All information received for which trade secrecy status is requested shall be treated as confidential as discussed in subsection (f) of this section until a final determination is made.

(f) Information which has been found to be confidential or regarding which a final determination has not been made which is being reviewed to determine if confidentiality should exist, shall be immediately filed in a separate "confidential" file. If a document or portion of a document is filed in a confidential file, a notation should be filed with the remainder of the/file document indicating that further information is in the confidential file.

(g) Information contained in confidential files shall only be disclosed to authorized representatives of the applicant or other governmental agencies only in connection with the State Board's, the regional board's, or the local agency's responsibilities pursuant to Chapter 6.7 of the Health and Safety Code or Division 7 of the Water Code.

(h) Nothing contained herein shall limit an applicant's right to prevent disclosure of information pursuant to other provisions of law.

Authority: Health and Safety Code 25299.3, 25299.7

Reference: Health and Safety Code 25290

APPENDIX

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APPENDIX I, TABLE A

SUGGESTED SPECIFICATIONS TEST METHODS

APPLICABLE TO REGULATORY REQUIREMENTS

SECTION NUMBER		
2631(d)(1)	ASTM D-814,	"Rubber Property - Vapor Transmission of Volatile Liquids"
2631(d)(2)(A)	ASTM D-543,	"Resistance of Plastics to Chemical Reagents"
2631(d)(2)(B)		
2631(d)(6)	ASTM D-751, (1989)	"Coated Fabrics"
	ASTM D-1004 (1988)	"Initial Tear Resistance of Plastic Film and Sheeting"
2631(d)(2)(C)	ASTM D-2240,	"Rubber Property - Durometer Hardness"
2631(d)(2)(D)	ASTM D-2684,	"Determining Permeability of Thermoplastic Containers"
2631(d)(6)	ASTM D-413 (1982)	"Rubber Property - Adhesion to Flexible Substrate"
	ASTM D-471 (1979)	"Rubber Property - Effect of Liquids"

	ASTM D-638 (1989)	"Tensile Properties of Plastics"
	ASTM E-96 (1980)	"Water Vapor Transmission of Materials"
2631(d)(6)	FTMS 101C Method 2065 (1980)	"Puncture Resistance and Elongation Test (1/8 inch Radius Probe Method)"
2631(d)(6)	FTMS 101C Method 2031 (1980)	"Puncture Resistance"
2633(b)(1)	ASME/	"ASME Pressure Vessel Code/ Section VIII/ Division 1/ Boiler and Pressure Vessel Code"
	UL-58/	"Steel Underground Tanks for Flammable and Combustible Liquids"
	UL-1316/	"Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products"

	UL-1615-1977	Standard for Reinforced Plastic Underground Storage Tanks for Petroleum Products
2635(b)(2)	ASTM G-1-72	Standard Recommended Practice for Preparing, Cleaning, and Evaluating Test Specimens
	ASTM G-31-72	Standard Recommended Practice NL for Laboratory Immersion Corrosion Testing of Metals
	ASTM D-4021-81	Standard Specifications for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks
	NACE TM-10-69	Laboratory Corrosion Testing of Metals for the Processing Industry
	NACE TM-02-70	Method for Conducting Laboratory Controlled Velocity Laboratory Corrosion Tests
2661(c)(2)(B)	API-1631	Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks
2663(b)	NFPA 329-1987	Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquids

APPENDIX I, TABLE B

ORGANIZATIONS THAT ADOPT VOLUNTARY CONSENSUS STANDARDS

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018
(212) 354-3473300

API American Petroleum Institute
2101220 L Street, N.W.
Washington, D.C. 2003705
(202) 4577000682-8000

ASME The American Society of Mechanical Engineers
345 East 47th Street
New York, NY 10017
(215) 2991400 (212) 705-7800

ASTM American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103
(215) 299-5400

NACE National Association of Corrosion Engineers
Post Office Box 986
1440 South Creek Drive
Katy, TX 77450
(713) 492-0535

NFPA National Fire Protection Association
Batterymarch Park
Quincy, MA 02269
(617) 328-9290

NSF National Sanitation Foundation
3475 Plymouth Road
Post Office Box 1468
Ann Arbor, MI 48106
(313) 769-8010

UL Underwriters Laboratories
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

ULC Underwriters Laboratories of Canada, Inc.
7 Crouse Road
Scarborough, Ontario

STI Steel Tank Institute
666 Dundee Road, Suite 705
Northbrook, IL 60062
(312) 498-1980

APPENDIX I, TABLE C

"Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Final Rule and Interim Final Rule and Proposed Rule," EPA Fed. Reg. Vol. 49, No. 209, October 26, 1984.

"Manual of Methods for the Chemical Analysis of Water and Wastes," EPA 600/4-79-020, March 1979.

"Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities," EPA 530/SW-611, August 1977.

"Soil Sampling Quality Assurance User's Guide," EPA 600/4-84-043, May 1984.

"Hazardous Waste Land Treatment," EPA SW-874, April 1983.

"Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater," EPA 600/4-82-057, July 1982.

"Handbook for Sampling and Sample Preservation of Water and Wastewater," EPA 600/4-82-029, September 1982.

"Manual of Analytical Quality Control for Pesticides and Related Compounds in Human and Environmental Samples," EPA 600/2-81-059, April 1981.

"EPA Test Methods for Evaluating Solid Waste - Physical/Chemical Method," SW-846

"Manual of Analytical Methods for the Analysis of Pesticides in Human and Environmental Samples," EPA 600/8-80-038.

"Standard Methods for the Examination of Water and Wastewater," American Public Health Assoc., American Water Works Assoc., Water Pollution Control Federation, 15th Edition, 1981.

"Selected Analytical Methods Approved and Cited by the United States Environmental Protection Agency," Supplement to the Fifteenth Edition of Standard Methods for the Examination of Water and Wastewater, 1981.

"Guidelines on Sampling and Statistical Methodologies for Ambient Pesticide Monitoring," Federal Working Group on Pest Management, October 1974.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Part 31, Water/," 1982.

"Methods for Determination of Inorganic Substances in Water and Fluvial Sediments of the U/S/ Geological Survey"/

"Methods for Analysis of Organic Substances in Water," U.S. Geological Survey, Techniques of Water-Resources Investigations, Book 5, Chapter A3, 1972.

"Criteria for Identification of Hazardous and Extremely Hazardous Wastes," Sections 66693 through 66746, Article 11, Chapter 30, Division 4, Title 22, California Code of Regulations.

"American Society for Testing and Materials (ASTM) Annual Book of Standards, Parts 23-25, Petroleum Products and Lubricants, 1981."

Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC)

APPENDIX II.

SUCTION PIPELINES MONITORING

Suction pipelines shall be monitored for the presence of air in the pipeline by observing the suction pumping system for the following indicators:

(1) The cost/quantity display wheels on the meter suction pump skip or jump during operation;

(2) The suction pump is operating, but no motor vehicle fuel is being pumped;

(3) The suction pump seems to overspeed when first turned on and then slows down as it begins to pump liquid; and

(4) A rattling sound in the suction pump and erratic flow indicating an air and liquid mixture.

If any of the above indicators are observed during testing of the suction piping system, the pipeline check valve should be inspected to determine if it is seated tightly. If there is any doubt following the inspection that the valve seats tightly, it should be repaired, replaced, or sealed off. Then the suction pumping test should be repeated and, if air is still entering the suction line, it is assumed that the pipe is leaking underground.

Appendix III.

Monitoring requirements for farm tanks having a capacity greater than 1,100 gallons are found in section 25292(b)(5) of Chapter 6.7 of Division 20 of the Health and Safety Code (see below). Section 25292(b)(5) refers to section 2641(c)(7) of Title 23 of the California Code of Regulations as it existed on August 13, 1985.

23 CCR 2641(c)(7) (August 12, 1985)

Underground Storage Tank Gauging and Testing:

(A) This monitoring alternative shall, at a minimum, utilize gauging and testing of the underground storage tank. This alternative shall only be utilized for underground storage tanks which do not have frequent inputs or withdrawals and where the liquid level in the underground storage tank can be measured to an accuracy of +5 gallons or less when the liquid level in the underground storage tank is such that a unit change in underground storage tank contents causes the smallest liquid level variation.

(B) The underground storage tank gauging shall be performed according to the following specifications:

1. The underground storage tank shall be capable of being secured to prevent unauthorized inputs or withdrawals.

2. Tank liquid level measurements shall be taken at the beginning and end of consecutive periods each lasting up to 7 days. No input or withdrawals shall occur during these periods. The liquid level measurement at the beginning and end of each period shall, if possible, be performed by the same person;

3. Underground storage tank testing shall be performed yearly at a minimum according to the procedures specified in section 2643 of this article; and

4. If the liquid level varies by more than 1 percent of the underground storage tank's volume or 5 gallons, whichever is less, between measurements, an unauthorized release shall be assumed to have occurred. The reporting requirements of Article 5 of this subchapter shall be followed and further evaluations shall be performed to verify or disprove the variations.

25292(b)(5), Health and Safety Code

(5) For monitoring underground storage tank systems which are located on farms and which store motor vehicle or heating fuels used primarily for agricultural purposes, alternative monitoring methods include the following:

(A) If the tank has a capacity of greater than 1,100 gallons but of 5,000 gallons or less, the tank shall be tested using the tank integrity test, at least once every three years, and the owner shall utilize tank gauging on a monthly or more frequent basis, as required by the local agency, subject to the specifications provided in paragraph (7) of subdivision (c) of section 2641 of Title 23 of the California Code of Regulations, as that section read on August 13, 1985.

(B) If the tank has a capacity of more than 5,000 gallons, the tank shall be monitored pursuant to the methods for all other tanks specified in this subdivison.

APPENDIX IV

Examples of

Quantitative Release Detection Methods for Tanks

Detection Method	Performance Standards
Automatic Tank Gauging (Monthly)	Subsection 2643 (c)(1)
Tank Integrity Test (Annually) and Inventory Reconciliation (Monthly)	Subsection 2643 (c)(2)(A) and Subsection 2643 (c)(2)(B)
Manual Tank Gauging (Weekly)	Section 2645

Examples of

Quantitative Release Detection Methods for Pressure Piping

Detection Method	Performance Standards
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Monthly)	Subsection 2643 (d)(1) Subsection 2643 (d)(2)
Automatic Line Leak Detector (Hourly) and Electronic Line Leak Detector (Annually)	Subsection 2643 (d)(1) Subsection 2643 (d)(3)
Automatic Line Leak Detector (Hourly) and Line Tightness Test (Annually)	Subsection 2643 (d)(1) Subsection 2643 (d)(3)
Electronic Line Leak Detector (Hourly)	Subsection 2643(d)(3)

Examples of

Quantitative Release Detection Methods for Suction Piping

Line Tightness Test (Triannually)	Section 2643 (e)
and	
Daily Monitoring	Appendix II

Examples of

Qualitative Release Detection Methods

Vapor Monitoring	Sections 2644 (b) and 2647
or	
Ground Water Monitoring	Sections 2644 (c) and 2648

APPENDIX V

EVALUATION PROCEDURE FOR LEAK DETECTION EQUIPMENT

Leak detection equipment can be evaluated for performance in accordance with one of the following three evaluation procedures:

1. EPA Standard Test Procedures

EPA has developed a series of standard test procedures that cover most of the methods commonly used for underground storage tank leak detection. These include:

a. "Standard Test Procedures for Evaluating Leak Detection Methods: Volumetric Tank Tightness Testing Methods"

b. "Standard Test Procedures for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods"

c. "Standard Test Procedures for Evaluating Leak Detection Methods: Automatic Tank Gauging Systems"

d. "Standard Test Procedures for Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods"

e. "Standard Test Procedures for Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors"

f. "Standard Test Procedures for Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors"

g. "Standard Test Procedures for Evaluating Leak Detection Methods: Pipeline Leak Detection Systems"

Each test procedure provides an explanation of how to conduct the test, how to perform the required calculations, and how to report the results. The results from each standard test procedure provide the information needed by tank owners and operators to determine if the method meets the regulatory requirements.

EPA standard test procedures must be conducted by an independent third party under contract to the manufacturer in order to prove compliance with the regulations. Independent third-parties may include consulting firms, test laboratories, not-for-profit research organizations, or educational institutions with no organizational conflict of interest. In general, evaluations are more likely to be fair and objective the greater the independence of the evaluating organization.

2. National Consensus Code or Standard

A second way for a manufacturer to prove the performance of leak detection equipment is to have an independent third party evaluate the system following a national voluntary consensus code or standard developed by a nationally recognized association (e.g., ASTM, ASME, ANSI, etc.). Throughout the technical regulations for underground storage tanks, EPA has relied on national voluntary consensus codes to help tank owners decide which brands of equipment are acceptable. Although no such code presently exists for evaluating leak detection equipment, one is under consideration by the ASTM D-34 subcommittee. Guidelines for developing these standards may be found in the U.S. Department of Commerce "Procedures for the Development of Voluntary Product Standards" (FR, Vol. 51, No. 118, June 20, 1986) and OMB Circular No. A-119.

3. Alternative Test Procedures Deemed Equivalent to EPA's

In some cases, a specific leak detection method may not be adequately covered by EPA standard test procedures or a national voluntary consensus code, or the manufacturer may have access to data that makes it easier to evaluate the system another way. Manufacturers who wish to have their equipment tested according to a different plan (or who have already done so) must have that plan developed or reviewed by a nationally recognized association or independent third-party testing laboratory (e.g. Factory Mutual, National Sanitation Foundation, Underwriters Laboratory, etc.). The results should include an accreditation by the association or laboratory that the conditions under which the test was conducted were at least as rigorous as the EPA standard test procedure. In general, this will require the following:

a. The evaluation tests the system both under the no-leak condition and an induced-leak condition with an induced leak rate as close as possible to (or smaller than) the performance standard. In the case of tank testing, this will mean testing under both 0.0 gallon per hour and 0.10 gallon per hour leak rates. In the case of ground water monitoring, this will mean testing with 0.0 and 0.125 inch of free product.

b. The evaluation should test the system under at least as many different environmental conditions as the corresponding EPA test procedure.

c. The conditions under which the system is evaluated should be at least as rigorous as the conditions specified in the corresponding EPA test procedure. For example, in the case of volumetric tank tightness testing, the test should include a temperature difference between the delivered product and that already present in the tank, as well as the deformation caused by filling the tank prior to testing.

d. The evaluation results must contain the same information and should be reported following the same general format as the EPA standard results sheet.

e. The evaluation of the leak detection method must include physical testing of a full-sized version of the leak detection equipment, and a full disclosure must be made of the experimental conditions under which: (1) the evaluation was performed, and (2) the method was recommended for use. An evaluation based solely on theory or calculation is not sufficient.

APPENDIX VI

CERTIFICATE OF TANK AND PIPE INSTALLATIONS

The owner or operator shall use the form below to certify that the UST and piping were installed properly.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
CERTIFICATION OF COMPLIANCE
FOR UNDERGROUND STORAGE TANK INSTALLATION

FORM C

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM

I. SITE LOCATION

STREET _____

CITY _____ COUNTY _____

II. INSTALLATION (mark all that apply):

- ☐ The installer has been certified by the tank and piping manufacturers.
- ☐ The installation has been inspected and certified by a registered professional engineer.
- ☐ The installation has been inspected and approved by the implementing agency.
- ☐ All work listed on the manufacturer's installation checklist has been completed.
- ☐ The installation Contractor has been certified or licensed by the Contractors State License Board.
- ☐ Another method was used as allowed by the implementing agency. (Please specify.)

_____

III. OATH I certify that the information provided is true to the best of my belief and knowledge.

Tank Owner/Agent _____ Date _____

Print Name _____ Phone ( )

Address _____

LOCAL AGENCY USE ONLY

STATE TANK I.D. #	COUNTY #	JURISDICTION #	FACILITY #	TANK #

FORM C (7/91) THIS FORM MUST BE ACCOMPANIED BY PERMIT APPLICATION FORMS A & B UNLESS THEY HAVE BEEN FILED PREVIOUSLY FOR005C7

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM A

COMPLETE THIS FORM FOR EACH FACILITY/SITE

MARK ONLY ONE ITEM: ☐ 1 NEW PERMIT ☐ 2 INTERIM PERMIT ☐ 3 RENEWAL PERMIT ☐ 4 AMENDED PERMIT ☐ 5 CHANGE OF INFORMATION ☐ 6 TEMPORARY SITE CLOSURE ☐ 7 PERMANENTLY CLOSED SITE

I. FACILITY/SITE INFORMATION & ADDRESS - (MUST BE COMPLETED)

DBA OR FACILITY NAME		NAME OF OPERATOR	
ADDRESS		NEAREST CROSS STREET	PARCEL # (OPTIONAL)
CITY NAME	STATE: CA	ZIP CODE	SITE PHONE # WITH AREA CODE

✓ BOX TO INDICATE ☐ CORPORATION ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ LOCAL-AGENCY DISTRICTS ☐ COUNTY-AGENCY ☐ STATE-AGENCY ☐ FEDERAL-AGENCY

TYPE OF BUSINESS ☐ 1 GAS STATION ☐ 2 DISTRIBUTOR ☐ 3 FARM ☐ 4 PROCESSOR ☐ 5 OTHER	☐ ✓ IF INDIAN RESERVATION OR TRUST LANDS	# OF TANKS AT SITE	E. P. A. I. D. # *(optional)*

EMERGENCY CONTACT PERSON (PRIMARY)		EMERGENCY CONTACT PERSON (SECONDARY) - optional	
DAYS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE	DAYS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE
NIGHTS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE	NIGHTS: NAME (LAST, FIRST)	PHONE # WITH AREA CODE

II. PROPERTY OWNER INFORMATION - (MUST BE COMPLETED)

NAME		CARE OF ADDRESS INFORMATION	
MAILING OR STREET ADDRESS		✓ box to indicate ☐ INDIVIDUAL ☐ LOCAL-AGENCY ☐ STATE-AGENCY ☐ CORPORATION ☐ PARTNERSHIP ☐ COUNTY-AGENCY ☐ FEDERAL-AGENCY	
CITY NAME	STATE / ZIP CODE		PHONE # WITH AREA CODE

III. TANK OWNER INFORMATION - (MUST BE COMPLETED)

NAME OF OWNER		CARE OF ADDRESS INFORMATION	
MAILING OR STREET ADDRESS		✓ box to indicate ☐ INDIVIDUAL ☐ LOCAL-AGENCY ☐ STATE-AGENCY ☐ CORPORATION ☐ PARTNERSHIP ☐ COUNTY-AGENCY ☐ FEDERAL-AGENCY	
CITY NAME	STATE / ZIP CODE		PHONE # WITH AREA CODE

IV. BOARD OF EQUALIZATION UST STORAGE FEE ACCOUNT NUMBER - Call (916) 323-9555 if questions arise.

TY (TK) HQ 44- ☐☐.☐☐☐

V. PETROLEUM UST FINANCIAL RESPONSIBILITY - (MUST BE COMPLETED) – IDENTIFY THE METHOD(S) USED

✓ box to indicate ☐ 1 SELF-INSURED ☐ 2 GUARANTEE ☐ 3 INSURANCE ☐ 4 SURETY BOND ☐ 5 LETTER OF CREDIT ☐ 6 EXEMPTION ☐ 99 OTHER

VI. LEGAL NOTIFICATION AND BILLING ADDRESS

Legal notification and billing will be sent to the tank owner unless box I or II is checked.

CHECK ONE BOX INDICATING WHICH ABOVE ADDRESS SHOULD BE USED FOR LEGAL NOTIFICATIONS AND BILLING: I. ☐ II. ☐ III. ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE)	APPLICANT'S TITLE	DATE MONTH/DAY/YEAR

LOCAL AGENCY USE ONLY

COUNTY # ☐☐ JURISDICTION # ☐☐☐ FACILITY # ☐☐☐☐☐☐

LOCATION CODE - *OPTIONAL*	CENSUS TRACT # - *OPTIONAL*	SUPVISOR - DISTRICT CODE - *OPTIONAL*

THIS FORM MUST BE ACCOMPANIED BY AT LEAST (1) OR MORE PERMIT APPLICATION - FORM B, UNLESS THIS IS A CHANGE OF SITE INFORMATION ONLY.

INSTRUCTIONS FOR COMPLETING FORM "A"

GENERAL INSTRUCTIONS:

1. One FORM "A" shall be completed for all NEW PERMITS, PERMIT CHANGES or any FACILITY/SITE INFORMATION CHANGES.
2. SUBMIT ONLY ONE (1) FORM "A" for a Facility/Site, regardless of the number of tanks located at the site.
3. This form should be completed by either the PERMIT APPLICANT or the LOCAL AGENCY UNDERGROUND TANK INSPECTOR.
4. Please type or print clearly all requested information.
5. Use a hard point writing instrument, you are making 3 copies.

TOP OF FORM: "MARK ONLY ONE ITEM"

Mark an (X) in the box next to the item that best describes the reason the form is being completed.

I. FACILITY/SITE INFORMATION & ADDRESS (MUST BE COMPLETED)

1. Record name and address (physical location) of the underground tank(s).
   NOTE: Address MUST have a valid physical location including city, state, and zip code.
   P.O. BOX NUMBERS ARE NOT ACCEPTABLE.
   Include nearest cross street and name of the operator.
2. Phone number must have an area code. If the night number is the same, write "SAME" in proper location.
3. Check the appropriate box for TYPE OF BUSINESS OWNERSHIP (ex. CORPORATION, INDIVIDUAL, etc.)
4. Check the appropriate box for TYPE OF BUSINESS.
5. If Facility/Site is located within an Indian reservation or other Indian trust lands, check the box marked "YES".
6. Indicate the NUMBER of TANKS at this SITE.
7. Record the E.P.A. ID # or write "NONE" in the space provided.

II. PROPERTY OWNER INFORMATION & ADDRESS (MUST BE COMPLETED)

Complete all items in this section, unless all items are the same as SECTION 1; if the same, write "SAME AS SITE" across this section. Be sure to check PROPERTY OWNERSHIP TYPE box.

III. TANK OWNER INFORMATION & ADDRESS (MUST BE COMPLETED)

Complete all items in this section, unless all items are the same as SECTION 1; If the same, write "SAME AS SITE" across this section. Be sure to check TANK OWNERSHIP TYPE box.

IV. BOARD OF EQUALIZATION UST STORAGE FEE ACCOUNT NUMBER (MUST BE COMPLETED)

Enter your Board of Equalization (BOE) UST storage fee account number which is required before your permit application can be processed. Registration with the BOE will ensure that you will receive a quarterly storage fee return in reporting the $0.006 (6 mills) per gallon fee due on the number of gallons placed in your USTs. The BOE will code persons exempt from paying the storage fee so returns will not be sent. If you do not have an account number with the BOE or if you have any questions regarding the fee or exemptions, please call the BOE at 916-323-9555 or write to the BOE at the following address: Board of Equalization, Environmental Fees Unit, P.O. Box 942879, Sacramento, CA 94279-0001.

V. PETROLEUM UST FINANCIAL RESPONSIBILITY (MUST BE COMPLETED)

Identify the method(s) used by the owner and/or operator in meeting the Federal and State financial responsibility requirements. USTs owned by any Federal or State agency are exempt from this requirement.

VI. LEGAL NOTIFICATION AND BILLING ADDRESS

Check ONE BOX for the address that will be used for BOTH LEGAL AND BILLING NOTIFICATIONS.

APPLICANT MUST SIGN AND DATE THE FORM AS INDICATED.

INSTRUCTION FOR THE LOCAL AGENCIES

The county and jurisdiction numbers are predetermined and can be obtained by calling the State Board (916)739-2421. The facility number may be assigned by the local agency; however, this number must be numerical and cannot contain any alphabetical. If the local agency prefers the State Board to assign the facility number, please leave it blank.

IT IS THE RESPONSIBILITY OF THE LOCAL AGENCY THAT INSPECTS THE FACILITY TO VERIFY THE ACCURACY OF THE INFORMATION. THIS APPLICATION CANNOT BE PROCESSED IF THE BOE ACCOUNT NUMBER IS NOT FILLED IN. THE LOCAL AGENCY IS RESPONSIBLE FOR THE COMPLETION OF THE "LOCAL AGENCY USE ONLY" INFORMATION BOX AND FOR FORWARDING ONE FORM "A" AND ASSOCIATED FORM "B"(s) TO THE FOLLOWING ADDRESS.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
C/O S.W.E.E.P.S.
DATA PROCESSING CENTER
P.O. BOX 527
PARAMOUNT, CA 90723

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

UNDERGROUND STORAGE TANK PERMIT APPLICATION - FORM B

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM.

MARK ONLY ONE ITEM
☐ 1 NEW PERMIT ☐ 2 INTERIM PERMIT ☐ 3 RENEWAL PERMIT ☐ 4 AMENDED PERMIT ☐ 5 CHANGE OF INFORMATION ☐ 6 TEMPORARY TANK CLOSURE ☐ 7 PERMANENTLY CLOSED ON SITE ☐ 8 TANK REMOVED

DBA OR FACILITY NAME WHERE TANK IS INSTALLED:

I. TANK DESCRIPTION
COMPLETE ALL ITEMS -- SPECIFY IF UNKNOWN

A. OWNER'S TANK I. D. #	B. MANUFACTURED BY:
C. DATE INSTALLED (MO/DAY/YEAR)	D. TANK CAPACITY IN GALLONS:

II. TANK CONTENTS
IF A-1 IS MARKED, COMPLETE ITEM C.

A. ☐ 1 MOTOR VEHICLE FUEL ☐ 2 PETROLEUM ☐ 3 CHEMICAL PRODUCT ☐ 4 OIL ☐ 80 EMPTY ☐ 95 UNKNOWN

B. ☐ 1 PRODUCT ☐ 2 WASTE

C. ☐ 1a REGULAR UNLEADED ☐ 1b PREMIUM UNLEADED ☐ 2 LEADED ☐ 3 DIESEL ☐ 4 GASAHOL ☐ 5 JET FUEL ☐ 6 AVIATION GAS ☐ 7 METHANOL ☐ 99 OTHER (DESCRIBE IN ITEM D. BELOW)

D. IF (A.1) IS NOT MARKED, ENTER NAME OF SUBSTANCE STORED C. A. S. # :

III. TANK CONSTRUCTION
MARK ONE ITEM ONLY IN BOXES A, B, AND C, AND ALL THAT APPLIES IN BOX D AND E

A. TYPE OF SYSTEM
☐ 1 DOUBLE WALL ☐ 2 SINGLE WALL ☐ 3 SINGLE WALL WITH EXTERIOR LINER ☐ 4 SECONDARY CONTAINMENT (VAULTED TANK) ☐ 95 UNKNOWN ☐ 99 OTHER_____

B. TANK MATERIAL (Primary Tank)
☐ 1 BARE STEEL ☐ 2 STAINLESS STEEL ☐ 3 FIBERGLASS ☐ 4 STEEL CLAD W/ FIBERGLASS REINFORCED PLASTIC
☐ 5 CONCRETE ☐ 6 POLYVINYL CHLORIDE ☐ 7 ALUMINUM ☐ 8 100% METHANOL COMPATIBLE W/FRP
☐ 9 BRONZE ☐ 10 GALVANIZED STEEL ☐ 95 UNKNOWN ☐ 99 OTHER_____

C. INTERIOR LINING
☐ 1 RUBBER LINED ☐ 2 ALKYD LINING ☐ 3 EPOXY LINING ☐ 4 PHENOLIC LINING
☐ 5 GLASS LINING ☐ 6 UNLINED ☐ 95 UNKNOWN ☐ 99 OTHER_____
IS LINING MATERIAL COMPATIBLE WITH 100% METHANOL ? YES___ NO___

D. CORROSION PROTECTION
☐ 1 POLYETHYLENE WRAP ☐ 2 COATING ☐ 3 VINYL WRAP ☐ 4 FIBERGLASS REINFORCED PLASTIC
☐ 5 CATHODIC PROTECTION ☐ 91 NONE ☐ 95 UNKNOWN ☐ 99 OTHER_____

E. SPILL AND OVERFILL SPILL CONTAINMENT INSTALLED (YEAR)_____ OVERFILL PREVENTION EQUIPMENT INSTALLED (YEAR)_____

IV. PIPING INFORMATION
CIRCLE A IF ABOVE GROUND OR U IF UNDERGROUND, BOTH IF APPLICABLE

A. SYSTEM TYPE	A U 1 SUCTION	A U 2 PRESSURE	A U 3 GRAVITY	A U 99 OTHER
B. CONSTRUCTION	A U 1 SINGLE WALL	A U 2 DOUBLE WALL	A U 3 LINED TRENCH	A U 95 UNKNOWN A U 99 OTHER
C. MATERIAL AND CORROSION PROTECTION	A U 1 BARE STEEL	A U 2 STAINLESS STEEL	A U 3 POLYVINYL CHLORIDE (PVC)	A U 4 FIBERGLASS PIPE
	A U 5 ALUMINUM	A U 6 CONCRETE	A U 7 STEEL W/ COATING	A U 8 100% METHANOL COMPATIBLE W/FRP
	A U 9 GALVANIZED STEEL	A U 10 CATHODIC PROTECTION	A U 95 UNKNOWN	A U 99 OTHER_____
D. LEAK DETECTION	☐ 1 AUTOMATIC LINE LEAK DETECTOR	☐ 2 LINE TIGHTNESS TESTING	☐ 3 INTERSTITIAL MONITORING	☐ 99 OTHER_____

V. TANK LEAK DETECTION
☐ 1 VISUAL CHECK ☐ 2 INVENTORY RECONCILIATION ☐ 3 VADOZE MONITORING ☐ 4 AUTOMATIC TANK GAUGING ☐ 5 GROUND WATER MONITORING
☐ 6 TANK TESTING ☐ 7 INTERSTITIAL MONITORING ☐ 91 NONE ☐ 95 UNKNOWN ☐ 99 OTHER

VI. TANK CLOSURE INFORMATION

1. ESTIMATED DATE LAST USED (MO/DAY/YR)	2. ESTIMATED QUANTITY OF SUBSTANCE REMAINING _____ GALLONS	3. WAS TANK FILLED WITH INERT MATERIAL ? YES ☐ NO ☐

THIS FORM HAS BEEN COMPLETED UNDER PENALTY OF PERJURY, AND TO THE BEST OF MY KNOWLEDGE, IS TRUE AND CORRECT

APPLICANT'S NAME (PRINTED & SIGNATURE)	DATE

LOCAL AGENCY USE ONLY
THE STATE I.D. NUMBER IS COMPOSED OF THE FOUR NUMBERS BELOW

STATE I.D.# COUNTY # ☐☐ JURISDICTION # ☐☐☐ FACILITY # ☐☐☐☐☐☐ TANK # ☐☐☐☐☐☐

PERMIT NUMBER	PERMIT APPROVED BY/DATE	PERMIT EXPIRATION DATE

FORM B (7-91) THIS FORM MUST BE ACCOMPANIED BY A PERMIT APPLICATION - FORM A, UNLESS A CURRENT FORM A HAS BEEN FILED.

FOR0034B-R5

INSTRUCTIONS FOR COMPLETING FORM "B"

GENERAL INSTRUCTIONS:

1. One FORM "B" shall be completed for each tank for all NEW PERMITS, PERMIT CHANGES, REMOVALS and/or any other TANK INFORMATION CHANGE.
2. This form should be completed by either the PERMIT APPLICANT or the LOCAL AGENCY UNDERGROUND TANK INSPECTOR.
3. Please type or print clearly all requested information.
4. Use a hard point writing instrument, you are making 3 copies.

TOP OF FORM: "MARK ONLY ONE ITEM"

1. Mark an (X) in the box next to the item that best describes the reason the form is being completed.
2. Indicate the DBA or Facility name where the tank is installed.

I. TANK DESCRIPTION - COMPLETE ALL ITEMS - IF UNKNOWN - SO SPECIFY

A. Indicate owners tank ID # - If there is a tank number that is used by the owner to identify the tank (ex. AB70789).
B. Indicate the name of the company that manufactured the tank (ex. ACME TANK MFG.).
C. Indicate the year the tank was installed (ex. 1987).
D. Indicate the tank capacity in gallons (ex. 25,000 or 10,000 etc.).

II. TANK CONTENTS

A. 1. If MOTOR VEHICLE FUEL, check box 1 and complete items B & C.
2. If not MOTOR VEHICLE FUEL, check the appropriate box in section A and complete items B & D.
B. Check the appropriate box.
C. Check the type of MOTOR VEHICLE FUEL (if box 1 is checked in A).
D. Print the chemical name of the hazardous substance stored in the tank and the C.A.S.#. (Chemical Abstract Service number), if box 1 is NOT checked in A.

III. TANK CONSTRUCTION - MARK ONE ITEM ONLY IN BOX A, B, C & D

1. Check only one item in TYPE OF SYSTEM, TANK MATERIAL, INTERIOR LINING and CORROSION PROTECTION.
2. If OTHER, print in the space provided.

IV. PIPING INFORMATION

1. Circle A if above ground; circle U if underground; and circle both if applicable.
2. If UNKNOWN, circle; or if OTHER, print in space provided.
3. Indicate the LEAK DETECTION system(s) used to comply with the monitoring requirement for the piping.

V. TANK LEAK DETECTION

1. Indicate the LEAK DETECTION system(s) used to comply with the monitoring requirements for the tank.

VI. INFORMATION ON TANK PERMANENTLY CLOSED IN PLACE

1. ESTIMATED DATE LAST USED - MONTH/YEAR (January, 1988 or 01/88).
2. ESTIMATED QUANTITY of HAZARDOUS SUBSTANCE remaining in the tank (in Gallons).
3. WAS TANK FILLED WITH INERT MATERIAL? Check 'Yes' or 'NO'.

APPLICANT MUST SIGN AND DATE THE FORM AS INDICATED.

INSTRUCTION FOR THE LOCAL AGENCIES

The state underground storage tank identification number is composed of the two digit county number, the three digit jurisdiction number, the six digit facility number and the six digit tank number. The county and jurisdiction numbers are predetermined and can be obtained by calling the State Board (916)739-2421. The facility number must be the same as shown in form "A". The tank number may be assigned by the local agency; however, this number must be numerical and cannot contain an alphabet. If the local agency prefers the State Board to assign the tank number, please leave it blank.

IT IS THE RESPONSIBILITY OF THE LOCAL AGENCY THAT INSPECTS THE FACILITY TO VERIFY THE ACCURACY OF THE INFORMATION. THE LOCAL AGENCY IS RESPONSIBLE FOR THE COMPLETION OF THE "LOCAL AGENCY USE ONLY" INFORMATION BOX AND FOR FORWARDING ONE FORM "A" AND ASSOCIATED FORM "B"(s) TO THE FOLLOWING ADDRESS.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
C/O S.W.E.I.P.S.
DATA PROCESSING CENTER
P.O. BOX 527
PARAMOUNT, CA 90723

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

CERTIFICATION OF COMPLIANCE
FOR UNDERGROUND STORAGE TANK INSTALLATION

FORM C

COMPLETE A SEPARATE FORM FOR EACH TANK SYSTEM

I. SITE LOCATION

STREET _____

CITY _____ COUNTY _____

II. INSTALLATION (mark all that apply):

- ☐ The installer has been certified by the tank and piping manufacturers.
- ☐ The installation has been inspected and certified by a registered professional engineer.
- ☐ The installation has been inspected and approved by the implementing agency.
- ☐ All work listed on the manufacturer's installation checklist has been completed.
- ☐ The installation Contractor has been certified or licensed by the Contractors State License Board.
- ☐ Another method was used as allowed by the implementing agency. (Please specify.)

_____

III. OATH I certify that the information provided is true to the best of my belief and knowledge.

Tank Owner/Agent _____ Date _____

Print Name _____ Phone ( ) _____

Address _____

LOCAL AGENCY USE ONLY

STATE TANK I.D. #	COUNTY #	JURISDICTION #	FACILITY #	TANK #
	☐☐	☐☐☐	☐☐☐☐☐☐	☐☐☐☐☐☐

INSTRUCTIONS FOR COMPLETING FORM "C": TANK INSTALLATION CERTIFICATION

GENERAL INSTRUCTIONS

1. Each tank system must be in compliance with the federal and state technical standards, contained in law and regulations, for tank and piping installation.

2. This certification shall be completed by either the UST owner or representative.

3. One certification is required for each tank system. This form shall be used to make the required certification.

4. Please type or print clearly all requested information (for printing, please use a hard point writing instrument).

5. Submit the completed certification to the appropriate Local Implementing Agency.

I. INSTALLATION: MARK ALL OF THE ITEMS THAT APPLY TO INDICATE THAT THE INSTALLATION REQUIREMENTS ARE MET.

II. OATH: THE TANK OWNER OR AGENT SHALL CERTIFY, BY SIGNING THE CERTIFICATION, THAT THE INFORMATION PROVIDED IS TRUE AND CORRECT. THE PERSON'S NAME SHOULD BE PRINTED UNDER THE SIGNATURE.

h. Memo to OAL transmitting corrected text (typographical and punctuation errors, August 9, 1991

State of California

Memorandum

To : John Smith
Deputy Director
Office of Administrative Law
555 Capitol Mall, Suite 1290
Sacramento, CA 95812

Date: AUG 9 1991

David Holtry

From : STATE WATER RESOURCES CONTROL BOARD

Subject: TRANSMITTAL OF REVISED TEXT, RE: OAL FILE NO. 91-~~0605-01E~~ 0730-01ER

The regulatory text has been corrected as a result of typographical and punctuation errors noted by your staff person, Victoria Cline. Please substitute the attached text for the text resubmitted on July 26, 1991.

Attachment

1991 AUG -9 PM 2 57
OFFICE OF
ADMINISTRATIVE LAW

IV. Miscellaneous Correspondence

1991 Index to Rulemaking File Underground Storage Tank Regulations Title 23, Waters Division 3, Water Resources Control Board Chapter 16, *Underground Storage Tank Regulations*

a. Letter to Mike McDonald from State Fire Marshal re conflict with Uniform Fire Code, December 27, 1990; letter from Dave Holtry to State Fire Marshal (no date)

STATE OF CALIFORNIA—STATE AND CONSUMER SERVICES AGENCY

GEORGE DEUKMEJIAN, *Governor*

STATE FIRE MARSHAL
HEADQUARTERS
7171 BOWLING DRIVE, SUITE 600
SACRAMENTO, CA 95823-2034

(916) 427-4161
(916) 427-4155
ATSS 8-466-4161
FAX (916) 427-4616

December 27, 1990

Mr. Mike McDonald, Manager
State Water Resources Control Board
Underground Storage Tank Program
2014 T Street
Sacramento, CA 94244-2120

Dear Mr. McDonald:

In regards to the proposed amendments to the California Underground Storage Tank Regulations dated October 15, it has been brought to my attention that Section 2661 "Underground storage tank repairs" appears to be in conflict with Section 79.601(d) of the Uniform Fire Code.

In as much as the Uniform Fire Code is a nationally recognized standard adopted by the California State Fire Marshal, it is our position that appropriate reference should be made to the provisions of the Uniform Fire Code as they relate to underground storage tanks.

If you should have questions regarding this subject, please feel free to contact me.

Sincerely,

MANNY MUNIZ
Coordinator, Regulations Program
(916) 427-4544

MM:wp

cc: Jeffrey M. Shapiro

Rulemaking 606

(916) 739-4436
(916) 739-2300 (FAX)

Responded by phone.

Mr. Manny Muniz
Regulations Program
State Fire Marshal Headquarters
7171 Bowling Drive, Suite 600
Sacramento, CA 95823-2034

Dear Mr. Muniz:

This is in response to your December 27, 1990 letter requesting that our regulations references Section 79.601(d) of the Uniform Fire Code.

This section requires the removal of underground storage tanks, when found to be leaking, this is in conflict with the Health and Safety Code [Section 25296(a)] which allows such tanks to be repaired.

If you have any questions, please give me a call at (916) 739-4436.

Sincerely,

David S. Holtry
Underground Storage Tank Program

FOLDER:DAVE
docname:mannymuniz
DH:jj

* Before this letter was mailed out David Holtry responded by phone to Mr. Muniz. Therefore, this file copy is just for our records.

SURNAME

DWR 540 REV.1/86

86 39106

b. Memo to Dave Holtry from SWRCB Budget Office re fiscal questions, March 29, 1991.

State of California

Memorandum

To : David Holtry, Chief
Engineering and Testing Unit
Division of Clean Water Programs

Date: March 29, 1991

Ronald J. Lucero, Chief
Budget and Program Evaluation Branch

From: **STATE WATER RESOURCES CONTROL BOARD**

Subject: **UNDERGROUND STORAGE TANK REGULATION PACKAGE**

I've had a chance to review your regulatory package and have several questions. The following questions were intended to fill informational gaps and bring the Department of Finance analyst on board with the full repercussions of the costs involved. I believe this will result in improved understanding and quicker approval.

1. Where is the detail on the $25,000 OSA estimate? Is it still current or does it need to be escalated for cost of living each year? A copy should be attached to the package.

2. Were all the regulation changes involving costs mandated in SB 1030? If so, is the estimated cost of this regulatory package consistent with the Boards fiscal analysis of that bill? If it is, it would help if you could provide a copy of the bill analysis with your package.

3. There is nothing in the package that tells Finance what is happening with the people/agencies who are burdened with the additional costs. Have they been notified of these requirements? Do they even know of the change? Have meetings been set with them? Have they started to upgrade their tanks or are they waiting until December 22, 1998 to comply? Are they waiting for the regulations to comply? Do we know if State agencies have budgeted for these costs and how much? How are you monitoring compliance? etc.

4. Finance in there letter to you specifically wanted to know what other state agencies were impacted. This was not provided.

I'd like to talk to you regarding this package and these questions. Please call me at 322-3007.

c. Letter to Office of Environmental Protection from Walt Pettit re transmittal of draft regulations, May 6, 1991

Pete Wilson, *Governor*

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

PAUL R. BONDERSON BUILDING
901 P STREET
P.O. BOX 100
SACRAMENTO, CALIFORNIA 95812-0100
(916) 739-4332

MAY 6 1991

Mr. Brian A. Runkel
Executive Officer
Office of Environmental Protection
555 Capitol Mall, Suite 235
Sacramento, CA 95812

Dear Mr. Runkel:

CALIFORNIA UNDERGROUND STORAGE TANK (UST) REGULATIONS

The California Legislature has passed legislation modifying our Health and Safety Code to bring our UST laws into a "no less stringent than" status with the federal UST statutes. Pursuant to the new statutes, we have prepared implementing emergency regulations and are submitting them to you in draft form for early review.

The regulations are to be submitted to the State Water Resources Control Board for adoption at the May 16, 1991 board meeting. If adopted at that meeting, they will be sent to you before being transmitted to the Office of Administrative Law (OAL) for review and approval.

If you have any questions regarding this matter, please call Harry Schueller at (916) 739-4332.

Sincerely,

ORIGINAL SIGNED BY

Walt Pettit
Executive Director

Enclosures

bcc Harry Schueller, CWP
Mike McDonald, CWP

MMcDonald:jking (05/06/91)
jking550/MCDONALD/runkel

SURNAME
DWR 540 REV.1/86

86 39106

d. Memo to Walt Pettit from Harry Schueller re briefing on regulatory changes, July 3, 1991.

State of California

Memorandum

To : Walt Pettit
Executive Director

Date: JUL 3 1991

RECEIVED
JUL 08 1991
EXECUTIVE OFFICE

From : Harry Schueller
Division of Clean Water Programs
STATE WATER RESOURCES CONTROL BOARD

Subject: RESUBMITTAL OF UNDERGROUND STORAGE TANK REGULATIONS TO THE OFFICE OF ADMINISTRATIVE LAW (OAL)

cc: Brian Runkel
OEP

As you know, OAL returned the tank regulations for minor corrections. The attachment shows which changes are being made to the text of the proposed regulations to satisfy OAL's comments.

A separate letter was received from OAL asking the State Board to correct some errors that exist in the Barclay's California Code of Regulations. OAL made these errors back in 1985 when the regulations were placed in the official record. OAL staff could correct these errors, but they indicated that it would be easier for them if we correct the errors through our process. In this manner their errors and our changes can be made at the same time, and incorporated into the update of Barclay's version of the regulations.

Because of the minor nature of the changes, we do not believe this item needs to go back to the Board.* Therefore we are preparing this package for resubmittal to OAL in about a week.

what about OEP?

Attachment

* Dorothy Jones, OCC, concurs w/ this. #

July 1991

SUMMARY OF CHANGES TO THE PROPOSED REGULATIONS

The following is a summary of changes made to the text as it was approved by the Board in the May 1991 Board Meeting. These changes are made in response to the Office of Administrative Law's (OAL) review comments.

I. Editorial changes

1. In the text submitted to OAL, some of the changes made to the existing (1985) regulatory text included deletion of the text instead of strike out of that text. This oversight is corrected by retyping the deleted text and striking it out, and underlining the proposed new text.

2. The proposed amended regulations as submitted to OAL contained some erroneous underlining. The unnecessary underlining is deleted.

3. In OAL's review some editorial errors in the original 1985 regulations (Barclay) were noted. These errors are corrected by including and striking out the erroneous text and underlining the correct language presented in the proposed regulations (Pages: 2.2, 3.14, 4.36, 6.4, 6.5).

4. The proposed regulations as presented to OAL used "paragraph" to reference subdivisions of sections. This is inconsistent with the code of regulations format. Throughout the text "paragraph" is changed to "subsection" or in some cases to "section" to achieve consistency in the regulatory text.

5. The proposed regulations as presented to OAL had some redundant repetitions of the text which lead to lack of clarity in the text. This is corrected by deleting the repetitious text (pages 5.12 and 5.13)

II. Other Changes

Article 3, Section 2631(d)(6), Page 3.7
The column heading in Table 3.1 is changed from: "Test Method" to "Some Acceptable Test Methods (See Appendix I). This change clarifies that the test methods are not required by the regulations; however, the material properties are required to meet the range requirement as specified in this Table.

Articles 3 & 4 & 5, Pages: 3.17, 3.33, 3.33, 3.39, 3.40, 3.44, 4.43, 4.72, 5.10
Phrases containing "days" are changed to "calendar days". This change leads to more accurate phrasing of regulatory time frame.

Article 4, Section 2647(c), Page 4.59
The new regulatory text as submitted to OAL is changed from: "Vadose zone monitoring shall be conducted either daily or continuously" to "Vadose zone monitoring shall be conducted continuously". This change will identify clearly what frequency of monitoring is required and is consistent with the statutory language.

Article 4, Section 2649(d)(7), Page 4.76
The text in this section is corrected to specify that the "Department of Water Resources Standards for Well Construction" is available through "Department of Water Resources, Sacramento". This informs interested parties where copies of such document can be obtained.

Article 5, Section 2652(b), Page 5.7
The phrase " by submitting a leak report form" is deleted from the following statement: " Within 24 hours after an unauthorized release has been detected, or should have been detected, the owner or operator shall notify the local agency by submitting a leak report form". This is to clarify the responsibility is on reporting the leak and there is no required form for compliance. Another change in this paragraph is replacing of " the State Office of Emergency Services and/or the appropriate Regional Board" with " the State Office of Emergency Services". This change is in response to OAL's comment that the use of "and/or" lacks clarity for those who have to comply with these regulations.

Article 6, Section 2661(n), Page 6.9
The new text in this section is changed from: "Tanks that fail any test shall be repaired, replaced or closed in accordance with the appropriate Article of this chapter." to: "Tanks that fail any test shall be repaired in accordance with provisions of this section, replaced in accordance with Article 3, or closed in accordance with Article 7 of this chapter.". This change further clarifies the regulatory text.

Article 6, Section 2664(a), Page 6.13
The new text of this section is changed from: "All underground pressurized piping continuing non-petroleum hazardous substances" to: "All underground storage pressurized piping containing hazardous substances, other than motor vehicle fuel tanks". The use of "non-petroleum" distinction is inconsistent with the California statutory language.

Article 7, Section 2670, Page 7.1
The text in this section was changed from: "The temporary closure requirement of Section 2671 shall apply to those underground storage tanks in which the storage of hazardous substances has ceased for 12 consecutive months but the underground storage tank will again be used for the storage of hazardous substances." To: " The temporary closure requirements of Section 2671 shall apply to those underground storage tanks in which the storage of hazardous substances has ceased, but the underground storage tank will again be used for the storage of hazardous substances within the next twelve consecutive months."
This change is made for clarification of the text. The substance of the regulations does not change as a result of this correction.

Article 7, Section 2672(b)(3), Page 7.7
In this section the following statement is added: " This documentation shall be submitted within the time frame specified by the local agency." This statement emphasizes that there is a time constraint for submittal of proper disposal of underground storage tank documentation.

Article 8, Section 2682(a), Page 8.5
The following phrase is deleted from the text: " on a form provided by the regional board". This deletion is made to clarify that submittal of a special form to apply for site-specific variance is not required by the regulations. The request can be made by means of a letter.

Article 9, Section 2690(b), Page 9.2
The phrase "as appropriate" is deleted from the following sentence of this section: " The Board will bill the applicant for additional costs or refund any unused portion of the initial fee, as appropriate.". This phrase is redundant and is deleted for clarification of the text.

Appendix I, Table A
This appendix has editorial changes (same as the ones described in Part I.1 and I.2 above). It is also corrected to include dates for the test methods suggested in Table 3.1 of the text. Office of Administrative law has specifically commented that listed test methods even though not required should be identified with the appropriate revision date.

Appendix III
This appendix as submitted to OAL does not accurately quote the 1985 regulatory version of Section 2641(c)(7) and the Health and Safety code. These errors are corrected by changing " + or - 5 Gallons or less" To " +5 Gallons or less"; and replacing " the tank shall be tested using the precision test as defined by the National Fire Protection Association Pamphlet 329" with " the tank integrity test".

e. Letter to local agencies from Mike McDonald re August 9, 1991adoption of regulations by OAL, August 12, 1991

STATE OF CALIFORNIA
PETE WILSON, *Governor*

STATE WATER RESOURCES CONTROL BOARD
DIVISION OF CLEAN WATER PROGRAMS
2014 T STREET, SUITE 130
P.O. BOX 944212
SACRAMENTO, CA 94244-2120
(916) 739-4352

AUG 12 1991

TO: LOCAL IMPLEMENTING AGENCIES

APPROVAL OF UNDERGROUND STORAGE TANK (UST) REGULATIONS

The Office of Administrative Law approved the UST regulations on August 9, 1991, the effective date of the regulations.

A copy of the regulations will be forwarded to you as soon as they become available and will also be distributed to those persons attending our UST conference in San Diego September 3 - 5, 1991.

If you have questions concerning the regulations or conference, please contact David Holtry at (916) 739-4436.

Sincerely,

Mike McDonald, Manager
Underground Storage Tank Section

f. Memo to SWRCB from OAL returning Secretary of State's copy of regulations marked "Endorsed Filed" (file is not in binder), March 12, 1993

State of California

Office of Administrative Law

Memorandum

To : Regulation Coordinator

Date : 3/12/93

File No. : 91-0730-01ER

Telephone : (916) 323-6225

From : Susana Martinez

Subject : Return of Rulemaking Materials

OAL hereby returns the rulemaking file your agency submitted for review.

Included with an approved file is a copy of the regulation stamped "ENDORSED FILED" by the Secretary of State.

The effective date of an approved regulation is specified on the form STD 400, facesheet (see item B.4.) Note: the 30th day after filing with Secretary of State is calculated from the date the regulation facesheet was stamped "ENDORSED FILED" by the Secretary of State.

Enclosures