



Environmental Science & Engineering, Inc.

FAXED

Concord, California Office

DATE: 7/17/91

TIME: 5:05 a.m. p.m.

TO: (NAME) Paul Smith

(COMPANY) A.C. Env. Health

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(PROJECT - IF CHARGEABLE) AD-5122

FROM: (NAME) Pat [unclear]

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SPECIAL INSTRUCTIONS: Excerpts from 4th

Quarterly Monitoring Report

Excerpts from new CA on [unclear]

Can we base our decision on these [unclear]

in BA-Regulation? PA

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE PHONE (415) 685-4053.

File 101 Regs
CA (STATE)

STATE OF CALIFORNIA

PETE WILSON, Governor

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF CLEAN WATER PROGRAMS

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Pat _____
Steve _____



MAY 17 1991

TO: INTERESTED PARTIES

The proposed amendments to the underground storage tank regulations as shown in the enclosure were approved by the State Water Resources Control Board on May 16, 1991. They will become effective after they are approved by the Office of Administrative Law and signed by the Secretary of State.

If you have questions, please contact me at (916) 739-4436.

Sincerely,

David Holtry
Underground Storage Tank Program
Engineering Unit

Enclosure

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MSH 111091

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 2638(a) 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.

The monitoring program shall include non-visual monitoring which must be performed 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.

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 or systems under site-specific conditions;
- (4) The depth and quantity of ground water and the direction of groundwater flow;
- (5) The patterns of precipitation in the region and any ground water leakage 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, quantity, and kind of waste 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 area 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.

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(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 6 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

2042, Visual Monitoring

(1) 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 STATE NOTIFICATION TO THE LOCAL AGENCY THAT IS ISSUED FOR THE PRODUCTION OF LEAKS OF SUBSECTION (b) OF THIS SECTION IS APPLICABLE. VISUAL MONITORING IS DEFINED AS THE PROVISION OF SUBSECTION (c) AND (d) OF THIS SECTION SHALL BE FOLLOWS:

(a) THE OWNER IS EXEMPT FROM VISUAL MONITORING FOR THAT PORTION OF THE UNDERGROUND STORAGE TANK IN WHICH THE FOLLOWING CONDITIONS APPLY:

(1) ANY PORTION OF AN UNDERGROUND STORAGE TANK THAT IS IN CONTACT WITH THE GROUND SURFACE OF THE TANK THAT IS CONSIDERED AN UNDERGROUND STORAGE TANK IN A TANK WHICH IS SPECIFICALLY LISTED FOR AN EXEMPTION;

(2) ANY PORTION OF THE UNDERGROUND STORAGE TANK WHICH IS A PORTION OF A STRUCTURE WHICH IS EXEMPTED;

(3) VISUAL INSPECTION OF THE UNDERGROUND STORAGE TANK WHICH REQUIRES THE USE OF APPROPRIATE PROTECTIVE EQUIPMENT WHICH IS NOT PROTECTIVE EQUIPMENT SUCH AS STABILIZED SHOULDER SHOULDER OR AIR PROTECTIVE HELMET;

(4) THE UNDERGROUND STORAGE TANK IS LOCATED IN A FACILITY WHICH IS NOT LISTED BY A STATE AGENCY.

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(1) TESTING OF COMPONENTS WHICH HAVE BEEN ISOLATED AND WHICH ARE SUBJECT TO HYPERBARIC PRESSURE TEST IN VIEW OF THE TEST REQUIRED IN SUBSECTION (D) OF THIS SECTION THIS HYPERBARIC PRESSURE TEST SHALL BE CONDUCTED AT A PRESSURE OF NO LESS THAN 1200 PSI AND NO MORE THAN 1200 PSI FOR HYPERBARIC TESTS AND THE PROBABILITY OF A LEAKING COMPONENT PRESSURE AREA OF LESS THAN 5 PSI (250 PSI) SHALL BE DETERMINED AND A REPORT TO THE SUBSECTION (D) OF THIS SECTION SHALL BE SUBMITTED

(2) THE TESTS REQUIRED IN THIS SECTION SHALL BE PERFORMED BY PERSONNEL WHO HAVE RECEIVED TRAINING IN APPROPRIATE TEST PROCEDURES THE PERSON PERFORMING THE TEST ACCEPTED IN SUBSECTION (D) OF THIS SECTION SHALL CERTIFY THAT THE TEST PROCEDURE DESCRIBED EARLIER IN THIS SECTION IS APPROPRIATE AND IS CAPABLE OF DETECTING LEAKS OF THIS ORDER OF MAGNITUDE (1 YEAR AFTER THE DEVELOPMENT OF A SYSTEM OF CERTIFICATION DEVELOPED BY A NATIONAL RECOGNIZED ACCREDITED TESTING ORGANIZATION WHICH EVALUATES THE ADEQUACY OF THE TEST FOR THE TYPE OF LEAK DETECTION IN SUBSECTION (D) OF THIS SECTION) AND THAT THE TESTER IS QUALIFIED

(3) WITHIN 30 DAYS OF COMPLETION OF EITHER OF THE LEAK DETECTION TESTS DESCRIBED IN SUBSECTION (D) OF (2) OF THIS SECTION THE UNDERGROUND STORAGE TANK OWNER SHALL PROVIDE THE TESTS TOGETHER WITH A REPORT WHICH INCLUDES THE FOLLOWING INFORMATION, IF APPLICABLE:

(1) THE PROCEDURES USED (INCLUDING THE DETERMINATION OF THE LOCATION OF THE DEVELOPER OF THE UNDERGROUND STORAGE TANK TEST PROCEDURE) FOR THE LEAK DETECTION ACTION

(2) THE TEST RESULTS USED IN DETERMINING THE FUNDAMENTAL TYPE OF LEAK

(3) THE FUNDAMENTAL TYPE OF LEAKAGE TESTS USED

(4) THE INFORMATION SHALL BE PROVIDED IN WRITING WHICH SHOULD FORMULATE AN APPROPRIATE AND THAT BE AS A BASIS OF FURTHER ACTION FOR THE LEAK DETECTION

(5) UNDERGROUND STORAGE TANKS WHICH ARE FOUND TO LEAK SHALL BE REPAIRED OR REMOVED OR DELETED IN ACCORDANCE WITH SECTION 251 OF THIS SUBCHAPTER

(6) THE DESIGN OF ANY UNDERGROUND STORAGE TANK WHICH DOES NOT MEET THE REQUIREMENTS OF THIS ARTICLE PERFORMED BY THE UNDERGROUND STORAGE TANK IS DEPENDENT OF THE UNDERGROUND STORAGE TANK IS SUBJECT TO BE REVIEWED BY THE UNDERGROUND STORAGE TANK BOARD TO THE LEAK DETECTION WITHIN 30 DAYS OF COMPLETION OF THE TEST

SECTION 261. Non-Visual Monitoring/Quantitative Release Detection Methods

(1) An owner required, pursuant to Section 251 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 methods that may be used to meet the performance standards of this section are presented in Appendix IV.

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(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.

(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.

(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:

(c) 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 monthly (once per calendar month after tank filling) and be capable of detecting a release of 1.0 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

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(1) Monitoring shall be conducted at least monthly (once per calendar month after tank filling) and be capable of detecting a release equivalent to 3.0 gallons per hour defined at 10 pounds per square inch pressure within any 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 31, 1992 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 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 overflow 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

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(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 99 percent probability of detection and not more than a 5 percent probability of false alarm;

(3) Monitoring shall be conducted at least annually (once per calendar year) at a pressure designated by the equipment manufacturer provide 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 99 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 psf with at least a 99 percent probability of detection and not more than a 5 percent probability of false alarm. Data 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 (c) of this section. Manual tank gauging and inventory reconciliation release detection methods shall comply with Sections 2040 and 2046 of this article, respectively.

(1) 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 standards specified in this section. This certification shall be provided as a result of one of the following detection procedures:

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

(2) An independent third party testing laboratory shall evaluate and approve the method using a voluntary procedure validated 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);

*ICMA Standard Test Procedure
per Appendix II*

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APPENDIX II.

SECTION PIPING MONITORING

*This is Applicable
to AICOPIPERK*

Section piping shall be inspected for the presence of air in the pipeline by observing the section pumping system for the following indicators:

- (1) The cost/quantity display shows an increase in the volume of water pumped during operation;
- (2) The suction pump is operating at a higher RPM than is being pumped;
- (3) The section pump starts at a normal speed first turned on and then slows down as it begins to pump;
- (4) A rattling sound in the section pipe is observed, indicating an air and liquid mixture.

If any of the above indicators are observed during testing of the suction piping system, the pipe section valve should be inspected to determine if it is sealed tightly. If leakage is observed following the inspection that the valve seats tightly, it should be repaired, replaced, or sealed off. If the suction pumping test shows a decreased flow and air is still entering the suction line, it is assumed that the pipe is leaking underground.

APPENDIX IV

Examples of

Quantitative Release Detection Methods for Tanks

Examples of

Quantitative Release Detection Methods for Pressure Piping

<u>Detection Method</u>	<u>Performance Standards</u>
<u>Automatic Tank Gauging (Monthly)</u>	<u>Subsection 2643 (c)(1)</u>
<u>Tank Integrity Test (Annually)</u> and <u>Inventory Reconciliation (Monthly)</u>	<u>Subsection 2643 (c)(2)(A)</u> <u>Subsection 2643 (c)(2)(B)</u>
<u>Manual Tank Gauging (Weekly)</u>	<u>Section 2645</u>

<u>Detection Method</u>	<u>Performance Standards</u>
<u>Automatic Line Leak Detector (Monthly)</u> and <u>Electronic Line Leak Detector (Monthly)</u>	<u>Subsection 2643 (d)(1)</u> <u>Subsection 2643 (d)(2)</u>
<u>Automatic Line Leak Detector (Hourly)</u> and <u>Electronic Line Leak Detector (Annually)</u>	<u>Subsection 2643 (d)(1)</u> <u>Subsection 2643 (d)(3)</u>
<u>Automatic Line Leak Detector (Monthly)</u> and <u>Line Visual Inspection (Annually)</u>	<u>Subsection 2643 (d)(1)</u> <u>Subsection 2643 (d)(3)</u>
<u>Electronic Line Leak Detector (Monthly)</u>	<u>Subsection 2643 (d)(3)</u>

this is applicable to Airpark

Examples of

Quantitative Release Detection Methods for Suction Piping

Line Tightness Test (Yearly)

Section 2543 (e)



and

Daily Monitoring

Appendix 21



Examples of

Qualitative Release Detection Methods

Vapor Monitoring

Section 2544 (b) and 2547

or

Ground Water Monitoring

Sections 2544 (c) and 2548