

NOTICE OF PROPOSED RULEMAKING

Title 27:	Environmental Protection
Division 2:	Solid Waste
Chapter 3:	Criteria for All Waste Management Units, Facilities, and Disposal Sites
Subchapter 4:	Criteria for Landfills and Disposal Sites
Article 6:	Gas Monitoring and Control at Active and Closed Disposal Sites
Sections:	20918, et seq.

PROPOSED REGULATORY ACTION

The California Integrated Waste Management Board (CIWMB) proposes to amend Title 27, California Code of Regulations (27 CCR), Division 2, Chapter 3, Subchapter 4, Article 6, §20918 et seq. The proposed changes (1) modify the regulations governing landfill gas monitoring and control at active disposal sites by incorporating the more detailed criteria presently applicable only to closed disposal sites and (2) include appropriate cleanup language for clarity and consistency.

WRITTEN COMMENT PERIOD

Any interested person, or his or her authorized representative, may submit written comments relevant to the proposed regulations to the CIWMB. **The written comment period for this rulemaking ends at 5:00 p.m. on October 30, 2006.** The CIWMB will also accept oral and written comments during the public hearing described below. Please submit your written comments to:

John Bell
California Integrated Waste Management Board
Permitting & Enforcement Division
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PUBLIC HEARING

A public hearing to receive comments on the proposed rulemaking will be scheduled for December 4, 2006. The hearing will be held in the Coastal Hearing Room (Second Floor) at the Joe Serna, Jr. Cal/EPA Building, 1001 I Street, Sacramento, California. The hearing will begin at 10:00 a.m. and conclude after the public gives all testimony. The CIWMB requests that persons who make oral comments at the hearing submit written copies of their testimony at the hearing. The Coastal Hearing Room is wheelchair accessible.

INFORMATIVE DIGEST

The Integrated Waste Management Act (Act), PRC §40000 et seq., provides for the protection of public health and safety and the environment through waste prevention, waste diversion, and solid waste processing and disposal. Existing landfill gas monitoring and control regulations for disposal sites in the post-closure care period are much more comprehensive than the regulations for active disposal sites. At its September 17, 2004 meeting, the CIWMB Permitting and Enforcement Committee directed staff to implement the CIWMB-funded 2004 GeoSyntec Landfill Facility Compliance Study recommendation that “the landfill gas monitoring and control regulations for the active life of the landfill be changed so that they are as comprehensive as the regulations for gas monitoring and control during the post-closure care period.” This would provide consistency as well as additional guidance to solid waste Local Enforcement Agencies (LEAs) at active disposal sites, which like closed sites, may have gas-related compliance issues. This should also bring increased compliance with landfill gas issues at active sites.

POLICY STATEMENT OVERVIEW

The CIWMB has determined that there is a need to modify existing active disposal site gas monitoring and control regulations to include the more detailed criteria for closed disposal sites along with appropriate clean-up language as a means of providing clarity and consistency with state law.

PLAIN ENGLISH REQUIREMENTS

CIWMB staff prepared the proposed regulatory changes pursuant to the standard of clarity provided in Government Code §11349 and the plain English requirements of Government Code §§11342.580 and 11346.2(a)(1). The proposed regulations are considered non-technical and can be easily understood by those who will use them.

AUTHORITY AND REFERENCES

PRC §§40502, 43020, and 43021 provide authority for this proposed regulation change. The purpose of the proposed regulation is to implement, interpret and make specific PRC Section 44009.

FEDERAL LAW OR REGULATIONS MANDATE

Federal law or regulations do not contain comparable requirements and as an approved state under Subtitle D of the Resource Conservation and Recovery Act (42 U.S.C.A. §§6901 et seq.), the State of California has the authority to promulgate such regulations.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

CIWMB staff has determined that the proposed regulation changes will result in no costs or savings to state agencies, no costs to any school districts that are required to be reimbursed under Part 7 (commencing with §17500) of Division 4 of the Government Code, no other non-discretionary costs or savings on local agencies or school districts, and no costs or savings in federal funding to the state.

CIWMB staff has determined that the proposed regulations do not impose a mandate on local school districts.

EFFECT ON HOUSING COSTS

CIWMB staff made an initial determination that the proposed regulation changes would not have a significant effect on housing costs.

EFFECT ON BUSINESSES

CIWMB staff made an initial determination that the proposed regulation changes would not have a significant, statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

EFFECT ON SMALL BUSINESSES

CIWMB staff made an initial determination that the proposed regulation changes would not have a statewide adverse economic impact on small businesses including the ability of California businesses to compete with businesses in other states. Due to the capital investment required, few small businesses establish and operate solid waste landfills. As such these regulations will not affect small business in that no small business is

required to comply with the regulations, none is required to enforce the regulations, and none derives a benefit nor incurs a detriment from the enforcement of the regulations.

EFFECT ON CREATION OR ELIMINATION OF JOBS, EXISTING OR NEW BUSINESS IN THE STATE OF CALIFORNIA

CIWMB staff has determined that the proposed regulatory action will not affect: 1) the creation or elimination of jobs within the State of California; 2) the creation of new or the elimination of existing businesses with California; or 3) the expansion of businesses currently doing business with the state.

COST IMPACTS ON REPRESENTATIVE PRIVATE PERSONS OR BUSINESSES

CIWMB staff analyzed the economic impact of the proposed action. The CIWMB estimates that 25 private landfills could incur projected annual increases in compliance costs. The economic analysis indicates a net total statewide cost of the proposed regulations of \$60,000 over a five-year period.

CONSIDERATION OF ALTERNATIVES

The CIWMB must determine that no reasonable alternative considered by the CIWMB or that has otherwise been identified and brought to the attention of the CIWMB would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action. The CIWMB invites interested persons to present statements or arguments with respect to alternatives to the proposed regulations during the written comment period.

CONTACT PERSONS

Inquires concerning the proposed administrative action or the substance of the proposed regulations may be directed to:

John Bell
California Integrated Waste Management Board
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Sacramento, CA 95812-4025
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Fax: (916) 319-7178
Phone: (916) 341-6368

Back-up contact person to whom inquires concerning the proposed administrative action or the substance of the proposed regulations may be directed:

Michael Wochnick
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AVAILABILITY OF STATEMENT OF REASONS AND TEXT OF PROPOSED REGULATIONS

The CIWMB will have the entire rulemaking file and all information upon which the proposed regulations are based available for inspection and copying throughout the rulemaking process at the above address. As of the date this notice is published in the Notice Register, the rulemaking file consists of this notice, the proposed text of the regulations, and the initial statement of reasons. Copies may be obtained by contacting John Bell at the address, e-mail, or telephone number listed above. For more timely access to the proposed text of the regulations and in the interest of waste prevention, interested parties are encouraged to access the CIWMB's website at <http://www.ciwmb.ca.gov/Rulemaking/ActiveGas/> Additionally, the final statement of reasons will be available at the above listed Internet address or you may call the contact persons named above.

AVAILABILITY OF CHANGED OR MODIFIED TEXT

The CIWMB may adopt the proposed regulation changes as described in this notice. If the CIWMB makes modifications which are sufficiently related to the proposed text, it will make the modified text – with changes clearly indicated – available to the public for at least 15 days before the CIWMB adopts the regulations as revised. Requests for the modified text should be made to the contact person. The CIWMB will transmit any modified text to all persons who testify at a public hearing if one is held; all persons who submit written comments at a public hearing; all persons whose comments are received during the comment period; and all persons who request notification of the availability of such changes. The CIWMB will accept written comments on the modified regulations for 15 days after the date on which they are made available.

Title 27, Environmental Protection Division 2, Solid Waste

Chapter 3 Criteria for All Waste Management Units, Facilities, and Disposal Sites Subchapter 4. Criteria for Landfills and Disposal Sites

Article 6. Gas Monitoring and Control at Active and Closed Disposal Sites

§20917. CIWMB - Scope and Applicability. [Reserved]

§20918. CIWMB - Exemptions. ~~(T14:§17783.17)~~

A disposal site other than a MSWLF unit, may be granted an exemption to all or any portion of the requirements of Article 6 of this Subchapter if the operator can demonstrate to the satisfaction of the EA, that there is no potential for adverse impacts on public health and safety and the environment, based upon but not limited to: the amount, nature and age of refuse; projected landfill gas generation; and remoteness of the facility disposal site. Exemptions ~~and alternatives~~ shall be reviewed by the EA in conjunction with the five (5) year permit review, and, based on the results, the EA may extend or terminate the exemption. Any exemption granted by the EA shall be in writing and shall contain substantial evidence that justifies the exemption.

Note:

Authority cited: Section 40502, Public Resources Code.

Reference: Sections 43020, 43021 and 43103, Public Resources Code; and Title 40, Code of Federal Regulations, Section 258.23.

§20919. CIWMB - Gas Control. ~~(T14:§17705)~~

Where the EA enforcement agency, the local fire control authority, or the CIWMB has cause-reason to believe a hazard or nuisance is being or may be created by landfill ~~decomposition~~ gases, ~~they it~~ shall so notify the owner operator. Thereafter, as directed by the EA, the local fire control authority, or the CIWMB, the site ~~owner operator~~ shall cause the site to be monitored for presence and movement of landfill gases, and shall take necessary action to control such gases. ~~The site owner shall inform the operator of any actions ordered by the EA, the local fire control authority or the CIWMB concerning gas control methods.~~ The monitoring program shall be developed pursuant to the specifications of the above agencies. The monitoring program shall not be discontinued until authorized to do so in writing by the requiring agency. Results of the monitoring shall be submitted to the appropriate agencies. If monitoring indicates ~~methane~~ landfill gas movement away from the site, the owner operator shall, within a period of time specified by the requiring agency, construct a gas control system approved by that agency. The agency may waive this requirement if satisfactory evidence is presented indicating-demonstrating that adjacent properties are safe from hazard or nuisance caused by ~~methane~~ landfill gas movement. The operator shall duly inform the ~~disposal site owner~~ EA of possible landfill gas problems.

Note:

Authority cited: Section 40502 Public Resources Code.

Reference: Sections 43020, 43021 and 43103, Public Resources Code.

~~§20919.5. CIWMB—Explosive Gases Control. (T14:§17258.23.)~~

~~(a) Owners or operators of all MSWLF units must ensure that:~~

~~(1) The concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures (excluding gas control or recovery system components); and~~

~~(2) The concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.~~

~~(b) Owners or operators of all MSWLF units must implement a routine methane monitoring program to ensure that the standards of ¶(a) are met.~~

~~(1) The type and frequency of monitoring must be determined based on the following factors:~~

~~(i) soil conditions;~~

~~(ii) the hydrogeologic conditions surrounding the facility;~~

~~(iii) the hydraulic conditions surrounding the facility; and~~

~~(iv) the location of facility structures and property boundaries.~~

~~(2) Except as provided in ¶(f), the minimum frequency of monitoring shall be quarterly.~~

~~(c) If methane gas levels exceeding the limits specified in ¶(a) are detected, the owner or operator must:~~

~~(1) immediately take all necessary steps to ensure protection of human health and notify the EA;~~

~~(2) within seven days of detection, place in the operating record the methane gas levels detected and a description of the steps taken to protect human health; and~~

~~(3) within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, and notify the EA that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.~~

~~(4) The EA with concurrence by the CIWMB pursuant to 40 CFR 258.23(e)(4) may establish alternative schedules for demonstrating compliance with ¶(c)(2) and ¶(c)(3).~~

~~(d) For purposes of this section, "lower explosive limit" means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 degrees Celsius and atmospheric pressure.~~

~~(e) The EA shall forward notifications and approvals pursuant to §20919.5(c)(1) and (c)(3) to the CIWMB pursuant to 40 CFR 258.23(e)(1) and (c)(3).~~

~~(f) For those MSWLF's that accept for disposal 20 tons or less of municipal solid waste per day based on an annual average, the EA, with concurrence by the Board, may establish alternative frequencies for explosive gas monitoring after consideration of the unique characteristics of small communities, climatic and hydrogeologic conditions, and protect of human health and the environment. Any proposal to allow an alternative frequency shall be available for public review for a minimum of 30 days to allow affected parties the opportunity to comment. Documentation of the considerations, public comment, and Board concurrence for any alternative frequency shall be placed in the operating record. The Executive Director or the EA may condition, limit, suspend, or terminate an operator's use of an alternative monitoring frequency if it is determined that the alternative frequency would cause harm to public health and safety, or the environment.~~

Note:

~~Authority cited: Section 40502, 40508, 43020, 43021, and 43030 Public Resources Code.~~

~~Reference: Sections 43020, 43021 and 43103, Public Resources Code; and Title 40, Code of Federal Regulations, Section 258.23.~~

§20920. CIWMB - Scope and Applicability for Gas Monitoring and Control Requirements ~~During Closure and Postclosure. (T14:§17760)~~

(a) Sections 20921 through 20937 set forth the performance standards and the minimum substantive requirements for landfill gas monitoring and control as it relates to [active solid waste disposal sites and to](#) proper closure, postclosure maintenance and ultimate reuse of solid waste disposal sites to assure that public health and safety and the environment are protected from pollution due to the disposal of solid waste.

(b) Sections 20921 through 20937 apply to all of the following:

(1) Active solid waste disposal sites;

~~(2)~~ Solid waste disposal sites that did not commence complete closure prior to August 18, 1989, which was fully implemented by November 18, 1990, in accordance with all applicable requirements; and

~~(3)~~ New postclosure activities at any solid waste disposal site that may jeopardize the integrity of a previously closed sites or pose a threat to public health and safety or the environment.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

§20921. CIWMB - Gas Monitoring and Control ~~During Closure and Postclosure. (T14:§17783)~~

(a) To provide for the protection of public health and safety and the environment, the operator shall ensure that landfill gases generated at a disposal site ~~are~~ is controlled in ~~accordance with~~ such a manner as to satisfy the following requirements:

(1) The concentration of methane gas must not exceed 1.25% by volume in air within any portion of any on-site structures.

(2) The concentration of methane gas migrating from the ~~landfill~~ disposal site must not exceed 5% by volume in air at the disposal site permitted facility ~~property~~ boundary or an alternative boundary approved in accordance with §20925.

(3) Trace gases shall be controlled to prevent adverse acute and chronic exposure to toxic and/or carcinogenic compounds.

(b) The EA, with concurrence by the CIWMB, shall evaluate and, if it complies with the requirements of §§20921 – 20937 to the satisfaction of the EA and CIWMB, approve a gas monitoring and control program submitted by the disposal site operator.

(1) New disposal sites and lateral expansions of existing disposal sites shall comply with these regulations prior to receipt of waste in the new or expanded area.

(2) Disposal sites which have received their final shipment of waste shall comply with these regulations immediately. Disposal sites which are actively implementing final closure activities at the time these regulations become effective shall comply with these regulations in accordance with the time schedule contained in the approved final closure plan.

(3) Existing disposal sites which have not yet received their final shipment of waste shall comply with these regulations in accordance with the following schedule.

(A) For disposal sites which are permitted to receive greater than 20 tons of waste per operating day shall comply with these regulations by (1 year from effective date).

(B) For disposal sites which are permitted to accept less than or equal to 20 tons of waste per operating day shall comply with these regulations by (2 years from effective date).

[Note: CIWMB staff is seeking input from stakeholders as to the appropriateness of the timelines specified in ¶¶(b)(3)(A) and (B) above.]

(~~bc~~) The gas monitoring and control program implemented pursuant to §§20921 - 20937 shall continue ~~for a period of thirty (30) years or~~ until the operator receives written authorization to discontinue by the EA with concurrence by the CIWMB pursuant to 40 CFR 258.61(b). Authorization to cease gas monitoring and control shall be based on a demonstration by the operator that there is no potential for gas migration beyond the ~~property disposal site permitted facility~~ boundary or into on-site structures. The operator's demonstration of this proposal shall be supported by data collected and any additional necessary studies.

(~~ed~~) The gas monitoring and control program required pursuant to §§20921 - 20937, shall be ~~described as part of included in~~ the JTD and preliminary and final closure and postclosure maintenance plans. The implementation of the gas monitoring and control program shall be described in detail in the JTD and the preliminary and final closure and postclosure maintenance plans to the satisfaction of the EA and CIWMB.

(~~de~~) ~~The Gas~~ gas monitoring and control ~~systems program~~ shall be modified, during the operation and closure and postclosure maintenance periods, to reflect changing on-site and adjacent land uses. Postclosure land use at the site shall not interfere with the function of gas monitoring and control systems. The operator may request a reduction of monitoring or control activities based upon the results of monitoring data collected. The request for reduction of monitoring or control activities shall be submitted in writing to the EA and CIWMB.

(f) For the purposes of this article, for disposal sites that do not have a solid waste facilities permit, the disposal site permitted facility boundary shall be as defined in the most recently approved closure and/or postclosure maintenance plan or other appropriate document (e.g., assessor's parcel map).

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

§20923. CIWMB - Monitoring (~~T14:§17783.3~~)

(a) To ensure that the conditions of §20921 are met, the operator shall implement a gas monitoring and control program at the disposal site ~~in accordance with that satisfies~~ the following requirements:

(1) the gas monitoring network shall be designed by a registered civil engineer or a certified engineering geologist; and shall ensure detection of the presence of landfill gas migrating beyond the disposal site ~~landfill property permitted facility~~ boundary and also into on-site structures; and

(2) The monitoring network shall be designed to account for the following specific site characteristics and potential migration pathways or barriers, including, but not limited to:

(A) local soil and rock conditions;

(B) hydrogeological conditions at the disposal site;

(C) the hydraulic conditions surrounding the disposal site;

(~~CD~~) locations of buildings and structures relative to the waste disposal area;

(~~DE~~) adjacent land use; and inhabitable structures within 1000 feet of the disposal site permitted facility ~~property~~ boundary;

(~~EF~~) man-made pathways, such as underground construction; and

(~~FG~~) the nature and age of the waste and its potential to generate landfill gas.

Note:

Authority Cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43201 and 43103, Public Resources Code and Title 40, Code of Federal Regulations, Section 258.23; ~~and Section 66796.22(d) Government Code.~~

History See Title 14 for 4. Points of history.

§20925. CIWMB - Perimeter Monitoring Network. ~~(T14:§17783.5)~~

(a) Location

(1) Perimeter subsurface monitoring wells shall be installed around the waste ~~deposit-perimeter-disposal footprint~~ but not within refuse. In some cases the installation of monitoring wells may not be necessary around the entire perimeter of the disposal site may not warrant the installation of monitoring wells permitted facility boundary. In ~~this-such a~~ case, the operator shall demonstrate to the satisfaction of the EA that landfill gas migration could not occur due to geologic barriers and that no inhabitable structure or other property or land use, such as agricultural lands, within 1,000 feet of the ~~property-disposal site permitted facility~~ boundary ~~are-is~~ threatened by landfill gas migration.

(2) Perimeter monitoring wells shall be located at or near the disposal site ~~property-permitted facility~~ boundary. The operator may establish an alternate boundary closer to the waste ~~deposit-area-disposal footprint~~ based on a knowledge of the site factors in §20923(a)(2). When compliance levels are exceeded at the alternate boundary, the operator shall install additional monitoring wells closer to the ~~property-permitted facility~~ boundary, pursuant to §20937.

(b) Spacing

(1) The minimum lateral spacing between adjacent monitoring wells shall not exceed 1,000 feet, unless ~~it can be established to the satisfaction of the EA, the operator demonstrates, based on the factors specified in §20923(a)(2), that there is no potential for adverse impacts on the public health and safety and the environment from such wider spacing.~~

(2) The spacing of monitoring wells shall be determined based upon, but not limited to: the nature of the structure to be protected and its proximity to the refuse. Wells shall be spaced to align with gas permeable structural or stratigraphic features, such as dry sand or gravel, off-site or on-site structures, and areas of dead or stressed vegetation that might be ~~due to-caused by landfill~~ gas migration.

(3) ~~Probe-Monitoring well~~ spacing shall be reduced as necessary to protect persons and structures threatened by landfill gas migration.

(c) Depth

(1) The depth of the wellbore of all monitoring wells shall equal the maximum depth of waste ~~as measured within 1,000 feet of the monitoring point.~~ The number and depths of monitoring probes within the wellbore shall be installed in accordance with the following criteria, except as specified in ¶(c)(2) of this section.

(A) a shallow probe shall be installed 5 to 10 feet below the surface;

(B) an intermediate probe shall be installed at or near half the depth of the waste;

(C) a deep probe shall be set at or near the depth of the waste;

(D) the specified depths of monitoring probes within the wellbore shall be adjusted, based on geologic data obtained during drilling, and probes shall be placed adjacent to soils which are most conductive to gas flow;

(E) All probes shall be installed above the permanent low seasonal water table, above and below perched ground water, and above bedrock; and

(F) When the depth of the waste does not exceed 30 feet, the operator may reduce the number of probes to two, with one probe located in the shallow zone as indicated above; and the other located adjacent to permeable soils at or near the depth of the waste.

(2) Exclusions or modifications to the requirements specified in ¶(c)(1) of this section may be requested ~~for certain disposal sites (i.e., filled pits, cut and trench, and canyon fills).~~ When conditions limit the practicality or do not warrant the installation depth criteria, (e.g., filled pits, cut and trench, and canyon fills). In those cases, the operator shall propose an alternate system of equivalent probe depths. The proposal must demonstrate ~~to the satisfaction of the EA,~~ that probes located at these depths are sufficient to detect migrating landfill gas and provide protection to public health and safety and the environment.

(3) The EA may require an increase in the number of monitoring wells or probes; or the depth of the wellbore; or modify the depths of monitoring probes within a wellbore to ensure compliance with §20921(a). The operator is not precluded from utilizing existing gas monitoring ~~probes-wells~~ of an alternate design; when the operator demonstrates ~~to the satisfaction of the EA,~~ that such ~~probes-wells~~ have been installed in a manner that ensures the detection of landfill gas migrating from the disposal site.

(d) Monitoring Well Construction

(1) Monitoring wells shall be drilled by a licensed drilling contractor; ~~or where in-house drilling capability exists,~~ by a drilling crew under the supervision of the design engineer or engineering geologist. Wells shall be logged during drilling by ~~or~~ a geologist or geotechnical engineer. Soils shall be described using the ASTM Designation: D2488 84 method for visual classification, Standard Practice for Description and Identification of Soils (Visual Manual Procedure), which is incorporated by reference. Rock units shall be described in a manner appropriate for geologic investigation.

(2) A record of each monitoring well shall be maintained by the operator and submitted to the EA upon request. The record shall include:

(A) a ~~facility~~ map of the disposal site drawn to a scale proposed by the design engineer or engineering geologist; sufficient to show the location of all monitoring wells. ~~The~~ Each well must be identified with a number that corresponds to the well log. Surface elevations at the wellheads shall be denoted on the map;

(B) well logs, including the names of the person(s) logging the hole; and

(C) an as-built description, including a well detail which indicates probe material and depth, extent and type of filter pack, thickness and material used for seals, extent and material used for backfill, size and interval of perforations, and a description of any shutoff valves or covers.

(3) To isolate monitored zones within the wellbore; and prevent contamination of perched ground water and permanent ground water, the operator shall provide a minimum seal of five (5) feet of bentonite at the surface and between the monitored zones.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~
Reference: Section 43021 and 43103, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

§20931. CIWMB - Structure Monitoring. ~~(T14:§17783.7)~~

(a) To ensure that the requirements of §20923(a)(1) are met, the monitoring network design shall include provisions for monitoring ~~on-site-all~~ structures within the disposal site permitted facility boundary, including but not limited to, buildings, subsurface vaults, utilities, or any other areas where potential landfill gas buildup ~~would be of concern may cause adverse impacts to the public health or safety or the environment.~~ ~~The proposal shall address on-site structures, both adjacent to and on top of the waste deposit area.~~

(b) Methods for monitoring on-site structures may include, but are not limited to: periodic monitoring, utilizing either permanently installed monitoring probes or gas surveys; and continuous monitoring systems.

(c) Structures located on top of the waste disposal ~~area~~ footprint shall be monitored on a continuous basis.

(d) When practical, structures shall be monitored after they have been closed overnight or for the weekend to allow for an accurate assessment of gas accumulation. Areas of the structure where gas may accumulate shall be monitored and may include, but are not limited to, areas in, under, beneath and around basements, crawl spaces, floor seams or cracks, and subsurface utility connections.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code, ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code, ~~and Section 66796.22(d), Government Code.~~

§20932. CIWMB - Monitored Parameters. ~~(T14:§17783.9)~~

(a) All monitoring ~~probes wells~~ and on-site structures shall be ~~sampled~~ monitored for methane during the monitoring period. The EA may require that a sample may be collected for laboratory analysis ~~Sampling~~ for specified trace gases ~~may be required by the EA~~ when there is a possibility of acute or chronic exposure due to ~~carcinogenic or toxic compounds hazardous materials~~.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code, ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code, ~~and Section 66796.22(d), Government Code.~~

§20933. CIWMB - Monitoring Frequency. ~~(T14:§17783.11)~~

(a) At a minimum, quarterly monitoring is required.

(1) The EA may require more frequent monitoring based upon site specific factors, including those noted in §20923(a)(2), or as needed to protect public health or safety or the environment. ~~When more frequent monitoring is necessary, the requiring agency shall notify the operator.~~

(b) More frequent monitoring may also be required at those locations where results of monitoring indicate that landfill gas migration is occurring or is accumulating in structures.

(c) The operator shall increase the monitoring frequency, as is necessary, to detect migrating gas and ensure compliance with §20921.

(b) For those MSWLF's that are permitted to accept for disposal 20 tons or less of municipal solid waste per day based on an annual average, the EA, with concurrence by the CIWMB, may reduce the frequencies for monitoring landfill gas after consideration of the unique characteristics of the MSWLF and its surroundings, climatic and hydrogeologic conditions, and protection of public health and safety and the environment. Any proposal by an operator for a reduced monitoring frequency shall be made available by the EA for public review for a minimum of 30 days to allow interested persons the opportunity to comment. The operator shall place in the operating record of the MSWLF documentation of the considerations, public comment, and EA approval and CIWMB concurrence for any alternative frequency. No reduced monitoring frequency shall be approved unless the EA and the CIWMB determine that the alternative monitoring schedule adequately protects the public health and safety and the environment. The Executive Director or the EA may condition, limit, suspend, or terminate an operator's use of an alternative monitoring frequency if s/he or it determines that the alternative frequency may cause harm to public health and safety, or the environment.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code, ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code and Title 40, Code of Federal Regulations, Section 258.23, ~~and Section 66796.22(d), Government Code.~~

§20934. CIWMB - Reporting. ~~(T14:§17783.13)~~

(a) Provided that ~~t~~The results of landfill gas monitoring demonstrate that none of the monitoring wells show gas concentrations or distribution in excess of the levels specified in §20921(a), the operator shall ~~be~~ submitted the results to the EA within ninety (90) days of sampling, ~~provided that compliance levels are maintained.~~ When

compliance levels are exceeded in any probe at any ~~probe well~~, the requirements of §20937 shall apply. The monitoring reports shall include:

- (1) the concentrations of ~~the~~ methane, as measured at each probe within each well and within each on-site structure;
- (2) the concentrations of specified trace gases, if required by the EA;
- (3) the documentation of date, time, barometric pressure, atmospheric temperatures, general weather conditions, and probe pressures at the time the sample was taken;
- (4) the names of sampling personnel, apparatus utilized, and a brief description of the methods used; and
- (5) a numbering system to correlate monitoring results to a corresponding well and probe location.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

§20937. CIWMB – Reporting and Control of Excessive Gas Concentrations. ~~(T14:§17783.15)~~

(a) When the results of landfill gas monitoring indicate concentrations of methane or trace gases in excess of the compliance levels ~~required by specified in~~ §20921(a), the operator shall:

- (1) Immediately ~~T~~take all ~~immediate~~ steps necessary to protect public health and safety, and the environment and notify the EA by telephone or electronic means.
- (2) ~~Notify the EA in writing within five (5) working days of learning that compliance levels have been exceeded, and indicate what has been done or is planning to be done to resolve the problem. Within seven (7) days of detection of excessive landfill gas concentrations.~~

~~(3A)~~ Verify ~~accuracy~~ validity of results by reviewing the following:

- ~~(A)i~~ probe readings;
- ~~(B)ii~~ possible liquid interference;
- ~~(C)iii~~ control well influence; and
- ~~(D)iv~~ barometric pressure effects.

(B) place in the operating record a description of and submit a letter to the EA that describes:

(i) the levels of methane and trace gas detected;

(ii) the nature and extent of the problem;

(iii) the steps the operator has taken to protect public health and safety and the environment; and

(iv) any further corrective actions that the operator or others need to take to adequately protect public health and safety and the environment.

~~(4) Within ten (10) working days, submit to the EA a letter which describes the nature and extent of the problem, and any immediate corrective actions that need to be taken to protect public health and safety, and the environment.~~

(3) Within 60 days of detection, implement a remediation plan for the methane gas releases, place a copy of the plan in the operating record, forward a copy of the plan to the EA and CIWMB, and notify the EA that the plan has been implemented. The plan shall describe the nature and extent of the problem and the proposed remedy.

~~(54)~~ Construct a gas control system that meets the criteria of §20939, designed by a registered civil or mechanical engineer, within a period of time specified by the EA. Installation of the system shall be in accordance with a design and in a manner approved for construction by the EA in coordination, if applicable, with the RWQCB.

(b) The EA, with concurrence by the CIWMB, may establish an alternative schedule for demonstrating compliance with subdivisions (a)(2) and (3) pursuant to 40 CFR 258.23(c)(4).

(c) The EA shall forward notifications and approvals made pursuant to ¶¶(a)(1), (2) and (3) to the CIWMB.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code and Title 40, Code of Federal Regulations, Section 258.23; ~~and Section 66796.22(d), Government Code.~~

§20939. CIWMB – Control of Excessive Gas Concentrations.

~~(b)~~ A landfill gas control system shall be designed to:

(1) Prevent methane accumulation in on-site structures from exceeding the level specified in §20921(a); ~~;~~

(2) Reduce methane concentrations at ~~monitored property~~ the disposal site permitted facility boundary ~~ies to below compliance levels;~~ the level specified in §20921(a);

(3) Reduce trace gas concentrations to the level specified in §20921(a); and

(4) Provide for the collection, ~~and treatment,~~ and ~~for~~ disposal of landfill gas condensate produced ~~at the surface within the disposal site.~~ Condensate generated from landfill gas control systems shall not be recirculated into the landfill unless the landfill has a liner and a properly operating leachate collection and removal system and analysis of the condensate demonstrates, to the satisfaction of the EA, that ~~it is acceptable to allow such~~ recirculation into the landfills which have a liner and an operating leachate collection systems will not harm the public health or safety or the environment and the applicable RWQCB has approved such discharge pursuant to §20200(d).

~~(e)~~ Subsurface landfill gas control systems may include, but are not limited to, one or more of the following:

(1) Active perimeter or interior control systems which are designed to accommodate the maximum expected flow rate from the disposal site; ~~and~~ provide access for system monitoring and flow rate adjustment. The control system shall be operated to ensure that gas is controlled at a sufficient rate without overpulling, to maximize control and not production, and to ensure adequate control for compliance with §20923.1(a).

(2) Perimeter air injection systems which shall be installed in native soil between the refuse and the area to be protected. Injection wells shall not be located in the refuse. The system shall be designed and operated to prevent air infiltration into the landfill but maintain ~~methane~~ landfill gas concentrations to compliance levels.

(3) Passive systems, including cutoff trenches, slurry walls, and vent trenches, when used shall be constructed with an impermeable geomembrane liner. The passive systems shall be installed to the depth of permanent low seasonal ground water or keyed into a low permeability layer below the limit of migration. ~~;~~

~~(e)~~ ~~When the results of monitoring in on site structures indicate levels in excess of those specified in §20923(a), the operator shall take appropriate action to mitigate the effects of landfill gas accumulation in on site structures.~~ Landfill Ggas control measures to protect structures; and public health and safety; shall include one or more of the following:

- (1) Flexible membrane liners,
- (2) Active collection systems,
- (3) Passive collection systems designed to be upgraded to an active system,
- (4) Alarms,
- (5) Ignition source control,
- (6) Utility collars installed within structures and outside in trenches, and
- (7) Ventilation.

(~~e~~d) To ensure that the [landfill](#) gas control system is operating at optimum efficiency to control landfill gas, the operator shall provide for system monitoring and adjustment.

(~~f~~e) To provide for the safe, efficient operation of the [landfill](#) gas control system, the operator shall implement a maintenance program in accordance with the following requirements:

- (1) A site specific operations and maintenance manual shall be maintained and kept current to reflect any expansion or modifications to the gas control system;~~:-~~
- (2) An operations and maintenance manual shall provide for periodic inspections and servicing of gas control equipment; ~~and:-~~
- (3) Operations and maintenance shall be recorded and the records shall be retained by the operator.

(~~g~~f) Construction Quality Assurance/Quality Control

- (1) The operator shall be responsible for providing inspections, as needed, to ensure the integrity of the system.
- (2) Prior to construction, the designer shall obtain and review all applicable test reports, shop drawings, and manufacturer's certificates to verify that all equipment used [or to be used](#) in the gas control system has been manufactured in accordance with industry standards.

Note:

Authority cited: Sections 40502 and 45020, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

Reference: Section 43021 and 43103, Public Resources Code; ~~and Section 66796.22(d), Government Code.~~

§20945. [Reserved by SWRCB]