

PARTIAL TABLE OF CONTENTS
FOR
STANDARD PROVISIONS AND REPORTING REQUIREMENTS
for Title 27 (27 CCR §20005, et seq.) and Subtitle D (40 CFR 258)
April 2000

Section	Page
I. APPLICABILITY	1
II. TERMS AND CONDITIONS	2
III. GENERAL PROVISIONS	3
IV. FINANCIAL ASSURANCE PROVISIONS	4
V. GENERAL PROHIBITIONS	4
VI. DISCHARGE SPECIFICATIONS	5
VII. FACILITY SPECIFICATIONS	6
VIII. CONSTRUCTION SPECIFICATIONS	6
IX. CLOSURE AND POST-CLOSURE SPECIFICATIONS	8
X. MONITORING SPECIFICATIONS	10
XI. RESPONSE TO A RELEASE	14
XII. STORM WATER PROVISIONS	17

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
FOR
NONHAZARDOUS SOLID WASTE DISCHARGES
REGULATED BY TITLE 27 AND/OR SUBTITLE D
(27 CCR §20005 et seq. and 40 CFR 258)

APRIL 2000

I. APPLICABILITY

- A. These Standard Provisions and Reporting Requirements are applicable to nonhazardous solid waste disposal sites that are regulated pursuant to the provisions of Title 27 of the California Code of Regulations, §20005 et seq. (27 CCR or Title 27), and municipal solid waste landfills that are subject to the Federal Subtitle D regulations contained in 40 CFR 258 in accordance with State Water Resources Control Board, Resolution No. 93-62.
- B. “Order,” as used throughout this document, means the Waste Discharge Requirements to which these Standard Provisions and Reporting Requirements are incorporated.
- C. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
- D. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
- E. If there is any conflicting or contradictory language between the Waste Discharge Requirements (WDRs), the Monitoring and Reporting Program (MRP), or the Standard Provisions and Reporting Requirements (SPRR), then language in the WDRs shall govern over either the MRP or the SPRR, and language in the MRP shall govern over the SPRR.
- F. Unless otherwise stated, all terms are as defined in §13050 of the California Water Code (CWC) and in §20164 of Title 27.

II. TERMS AND CONDITIONS

- A. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or other order or prohibition issued, reissued, or amended by the Regional Board or the State Water Resources Control Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of these waste discharge requirements and the California Water Code, which can result in the imposition of civil monetary liability [CWC §13350(a)]
- B. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [CWC §13381]:
1. Violation of any term or condition contained in this Order;
 2. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 3. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
 4. A material change in the character, location, or volume of discharge.
- C. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge, or other appropriate joint technical document, with the Regional Water Quality Control Board (hereafter Board) [CWC §13260(c) and §13264(a)]. A material change includes, but is not limited to, the following:
1. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
 2. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment); or
 3. A change in the type of waste being accepted for disposal.
- D. Representatives of the Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [CWC §13267(c)].

- E. The Board will review this Order periodically and will revise these waste discharge requirements when necessary [CWC §13263(e) and 27 CCR §21720(b)].
- F. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board [CWC §13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
- G. A discharge of waste into the waters of the state is a privilege, not a right. No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge [CWC §13263(g)].

III. GENERAL PROVISIONS

- A. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [27 CCR §21710(c)(1)].
- B. The Discharger shall notify the Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Board approval following authorization for closure pursuant to the site Notification of Closure [27 CCR §21710(a)(4)].
- C. The Discharger shall maintain legible records of the volume and type of each waste discharged at each waste management unit (Unit) or portion of a Unit, and the manner and location of discharge. Such records shall be maintained by the Discharger until the beginning of the post-closure maintenance period. These records shall be on forms approved by the State Water Resources Control Board or Regional Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Resources Control Board or Regional Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board [27 CCR §21720(f)].

IV. FINANCIAL ASSURANCE PROVISIONS

- A. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known and reasonably foreseeable releases from the Unit [27 CCR §20380(b) and §22222].
- B. The Discharger shall establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified Unit in accordance with an approved closure and post-closure maintenance plan [27 CCR §20950(f) and §22207(a)].

V. GENERAL PROHIBITIONS

- A. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) is prohibited, except dewatered sewage or water treatment sludge as described in 27 CCR §20220(c) above a composite liner with a leachate collection and removal system [27 CCR §20200(d)(3)].
- B. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the waste management unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products, which, in turn:
 - 1. require a higher level of containment than provided by the unit; or
 - 2. are ‘restricted wastes’; or
 - 3. impair the integrity of containment structures;is prohibited [27 CCR §20200(b)].
- C. Internal site drainage from surface or subsurface sources shall not contact or percolate through wastes. Surface and subsurface drainage from outside of a waste management unit shall be diverted from the Unit [27 CCR §20365(e)].
- D. New Units or lateral expansions of existing Units shall not be sited in a “wetland” [as defined in 40 CFR 232.29(r)] unless there is no practical alternative; steps have been taken to assure no net loss of wetland; the Unit will not degrade the wetland; the Unit will not jeopardize threatened or endangered species or produce adverse modification of a critical habitat or violate any requirement of the Marine Protection, Research, and Sanctuaries Act of 1972 [40 CFR 258.12].

VI. DISCHARGE SPECIFICATIONS

- A. The Discharger is responsible for accurate characterization of wastes, including a

determination of whether or not wastes will be compatible with containment features and other wastes at the Unit and whether or not the wastes are required to be managed as a hazardous waste [27 CCR §20200(c)] or designated waste [27 CCR §20210].

- B. All Units shall be designed, constructed, and operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [27 CCR §20240(c)], including the capillary fringe.
- C. The Discharger shall submit operation plans describing those Unit operations which could affect water quality, including, but not limited to [27 CCR §21760(b)]:
 - 1. A description of proposed treatment, storage, and disposal methods;
 - 2. Contingency plans for the failure or breakdown of waste handling facilities or containment systems, including notice or any such failure, or any detection of waste or leachate in monitoring facilities, to the Board, local governments, and water users downgradient of the Unit(s); and
 - 3. A description of inspection and maintenance programs which will be undertaken regularly during disposal operations and the post-closure maintenance period.
- D. Leachate and landfill gas condensate collected from a Unit shall be discharged to the Unit from which it came, or discharged to an appropriate waste management unit in accordance with Title 27 and in a manner consistent with the waste classification of the liquid [27 CCR §20200(d) and §20340(g)].
- E. The discharge of leachate or gas condensate is restricted to those portions of a Unit that has a composite liner system and leachate collection and removal system meeting the Federal Subtitle D requirements. A Unit shall not receive leachate or gas condensate from another Unit [40 CFR 258.28].
- F. Any discharge of waste outside the portion of the landfill that was already covered with waste as of the Unit's respective Federal Deadline constitutes a "lateral expansion" and requires the installation of an approved composite liner system and leachate collection and removal system [40 CFR 258.40(b)].
- G. The Discharger shall notify the Board that a closure and post-closure maintenance plan has been prepared in accordance with Closure and Post-Closure Specification IX. G., and placed in the operating record by the date of initial receipt of waste at any new Unit or lateral expansion of any existing Unit [40 CFR 258.60(d)].

VII. FACILITY SPECIFICATIONS

- A. Surface and subsurface drainage from outside of a Unit shall be diverted from the

Unit [27 CCR §20365(e)].

- B. Intermediate cover consisting of compacted earthen material of at least twelve (12) inches shall be placed on all surfaces of the fill where no additional solid waste will be deposited within 180 days [27 CCR §20700(a)].
- C. Interim cover over wastes discharged to a landfill shall be designed and constructed to minimize percolation of liquids through the wastes [27 CCR §20705(b)].
- D. The Discharger shall promptly notify the Board of any slope failure occurring at a Unit. Any failure which threatens the integrity of containment features or the Unit shall be promptly corrected in accordance with an approved method [27 CCR §21710(c)(2)].

VIII. CONSTRUCTION SPECIFICATIONS

- A. All containment structures shall be designed by, and construction shall be supervised by, a California registered civil engineer or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge. Units shall receive a final inspection and approval of the construction by Board staff before use of the Unit commences [27 CCR §20310(e)].
- B. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a Unit's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist [27 CCR §21710(d)].
- C. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [27 CCR §20320(a)].
- D. Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping [27 CCR §20365(a)].
- E. All Units shall be designed to withstand the maximum probable earthquake without damage to the foundation or to the structures that control leachate, or surface drainage, or erosion, or gas [27 CCR §20370(a)].
- F. All landfills shall be sited where soil characteristics, distance from waste to groundwater, and other factors will ensure no impairment of beneficial uses of surface water or of groundwater beneath or adjacent to the landfill [27 CCR §20260(b)].

- G. New Units and expansions of existing Units shall not be located on a known Holocene fault [27 CCR §20260(d)].
- H. Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate [27 CCR §20330(a)].
- I. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities as long as a reasonable number of field hydraulic conductivity tests are also conducted [27 CCR §20320(c)].
- J. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [27 CCR §20320(b)].
- K. A test pad for each barrier layer and final cover shall be constructed in a manner duplicating the field construction. Test pad construction methods, with the designated equipment, shall be used to determine if the specified density/moisture-content/hydraulic conductivity relationships determined in the laboratory can be achieved in the field with the compaction equipment to be used and at the specified lift thickness [27 CCR §20324(g)(1)(A)].
- L. Performance requirements for geosynthetic membranes shall include, but are not limited to, a need to limit infiltration of water, to the greatest extent possible; a need to control landfill gas emissions; mechanical compatibility with stresses caused by equipment traffic, and for final covers the result of differential settlement over time and durability throughout the post-closure maintenance period [27 CCR §20324(i)(1)].
- M. Leachate collection and removal systems are required for Class II landfills and surface impoundments, municipal solid waste landfills, and for Class III landfills which have a liner or which accept sewage or water treatment sludge [27 CCR §20340(a)].
- N. All new Units or lateral expansions of existing Units that require a leachate collection and removal system shall have a blanket-type leachate collection and removal system that covers the bottom of the Unit and extends as far up the sides as possible. The leachate collection and removal system shall be of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the Unit [27 CCR §20340(e)].
- O. The leachate collection and removal system shall be designed, constructed,

maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the Unit [27 CCR §20340(b)].

- P. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled closure of the Unit and during the post-closure maintenance period. The systems shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [27 CCR §20340(d)].
- Q. The depth of fluid over any portion of the leachate collection and removal system shall not exceed 30 cm [40 CFR 258.40(a)(2)]. The leachate collection sump may be designed to include a small limited area for the leachate removal pump where the fluid depth may exceed 30 cm. The leachate removal pump sump can be no larger or contain a fluid depth greater than the minimum needed for efficient pump operation [27 CCR §20340(c)].
- R. All construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [27 CCR §20323] and approved by the Executive Officer.
- S. The Construction Quality Assurance (CQA) program shall be supervised by a registered civil engineer or a certified engineering geologist who shall be designated the CQA officer [27 CCR §20324(b)(2)].

IX. CLOSURE AND POST-CLOSURE SPECIFICATIONS

- A. The Discharger shall carry out both mandatory closure and normal closure of a Unit or a portion of a Unit in accordance with a closure and post-closure maintenance plan approved by the Board [27 CCR §20950(a)(1)] through the issuance of closure waste discharge requirements.
- B. The Discharger shall notify the Board in writing that a Unit or portion of a Unit is to be closed either at the same time that the California Integrated Waste Management Board is notified or **180 days** prior to beginning any final closure activities, whichever is sooner [27 CCR §21710(c)(5)]. The notice shall include a statement that all closure activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable federal and state regulations.
- C. The final closure and post-closure maintenance plan for the Unit shall include at least the following: an itemized cost analysis, closure schedule, final treatment procedures, map; changes to the Unit description presented in the most recent ROWD; federal requirements for a municipal solid waste facility; and land use of the closed Unit [27 CCR §21769(c)].

- D. Closure of each Unit shall be under the direct supervision of a registered civil engineer or certified engineering geologist [27 CCR §20950(b)].
- E. The final cover of closed landfills shall be designed, graded, and maintained to prevent ponding and soil erosion due to high run-off velocities [27 CCR §21090(b)(1)(A)].
- F. The final grading design shall be designed and approved by a registered civil engineer or certified engineering geologist [27 CCR §21090(b)(1)(C)].
- G. In addition to the applicable provisions of Title 27, the closure and/or the post-closure maintenance plan shall include the following:
 - 1. A final cover design with a minimum 1-foot thick erosion resistant layer [27 CCR §21090(a)(3)(A)];
 - 2. An estimate of the largest area of the Unit(s) ever requiring a final cover at any time during the active life of the Unit(s) [40 CFR 258.60(c)(2)];
 - 3. An estimate of the maximum inventory of wastes ever on-site over the active life of the waste management facility [40 CFR 258.60(c)(3)];
 - 4. Initiation of closure activities within 30 days of final waste receipt, or within one year of receipt of most recent waste if additional capacity remains [40 CFR 258.60(f)];
 - 5. Completion of closure activities within 180 days of the beginning of closure activities [40 CFR 258.60(g)];
 - 6. Areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion [27 CCR §21090(b)(2)];
 - 7. Closed Units shall be provided with at least two permanent surveying monuments, installed by a licensed land surveyor or by a registered civil engineer, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period [27 CCR §20950(d)]; and
 - 8. Notifying the Executive Officer that the deed to the landfill facility property, or some other instrument that is normally examined during a title search, has been recorded and a copy placed in the operating record. The notation on the deed shall in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and that use of the land is restricted to

the planned used described in the post-closure maintenance plan [27 CCR §20515(a)(4) and §21170, and 40 CFR 258.60(c)(2)].

- H. Construction or repair of the final cover system's low-hydraulic conductivity layer is to be carried out in accordance with an approved construction quality assurance (CQA) plan [27 CCR §21090(b)(1)(E)].
- I. For landfills closed after 18 July 1997, The Discharger shall incorporate into the closure and post-closure maintenance plan a cover-integrity monitoring and maintenance program which includes at least the following: a periodic leak search, periodic identification of other problem areas, prompt cover repair, and vegetation maintenance [27 CCR §21090(4)]. For these landfills, the Discharger shall complete final cover surveys. The final cover surveys shall include an initial survey and map and a five-year iso-settlement map [27 CCR §21090(e)].
- J. The post-closure maintenance period shall continue until the Board determines that wastes remaining in the Unit(s) no longer pose a threat to water quality [27 CCR §20950(a)(1)].
- K. Within 30 days of completion of all closure activities, the Discharger shall certify that all closure activities were performed in accordance with the most recently approved final closure plan and in accordance with all applicable regulations. The Discharger shall also certify that closed Units shall be maintained in accordance with an approved post-closure maintenance plan [27 CCR §21710(c)(6)].
- L. Throughout the post-closure maintenance period, the Discharger shall maintain the structural integrity and effectiveness of all containment structures, maintain the final cover as necessary to correct the effects of settlement and other adverse factors, continue to operate the leachate collection and removal system as long as leachate is generated and detected, maintain the monitoring systems, prevent erosion and related damage of the final cover due to drainage, and protect and maintain surveyed monuments [27 CCR §21090(c)].

X. MONITORING SPECIFICATIONS

- A. Technical and monitoring reports specified in this Order are requested pursuant to the California Water Code [§13267(b)]. Failure to furnish the reports by the specified deadlines or falsifying information in the reports, are misdemeanors that may be liable civilly in accordance with §13268(b) of the California Water Code [CWC §13268(a)].
- B. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points [27 CCR §20415(e)(4) and 40 CFR §258.53(b)].

- C. All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer [27 CCR §20415(e)(1)].
- D. All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport [27 CCR §20415(b)(4)(A)].
- E. All sample chemical analyses of any material shall be performed by a laboratory certified by the California Department of Health Services [CWC §13176(a)].
- F. The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples [27 CCR §20415(b)(4)(B)]. Groundwater samples shall not be field-filtered prior to laboratory analysis [40 CFR §258.53(b)].
- G. Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same waste management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction [40 CFR §258.53(d)].
- H. Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program [40 CFR §258.51(c)(2)].
- I. All borings are to be logged during drilling under the direct supervision of a registered geologist or registered civil engineer with expertise in stratigraphic well logging [27 CCR §20415(e)(2)].
- J. Soils are to be described according to the Unified Soil Classification System [27 CCR §20415(e)(2)(A)]. Rock is to be described in a manner appropriate for the purpose of the investigation [27 CCR §20415(e)(2)(B)].
- K. The water quality protection standard shall consist of the constituents of concern (COC), concentration limits, and the point of compliance. The water quality protection standard shall apply during the active life of the Unit, closure period, post-closure maintenance period, and any compliance period under §20410 of Title 27 [27 CCR §20390].

- L. The point of compliance at which the water quality protection standard applies is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit [27 CCR §20405].
- M. The compliance period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program and is the number of years equal to the active life of the Unit plus the closure period [27 CCR §20410(a)].
- N. The groundwater monitoring system shall include a sufficient number of monitoring points, installed at appropriate locations, to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the Unit [27 CCR §20415(b)(1)(A)].
- O. The detection monitoring program shall include a sufficient number of monitoring points, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance to allow the detection of a release from the Unit [27 CCR §20415(b)(1)(B)1.].
- P. Additional monitoring points shall be added as necessary to provide the best assurance of the **earliest possible detection** of a release from the Unit [27 CCR §20415(b)(1)(B)2.].
- Q. The detection monitoring program shall also include a sufficient number of monitoring points installed at appropriate depths and locations to yield groundwater samples from other aquifers or perched zones not already monitored to provide the **earliest possible detection** of a release from the Unit [27 CCR §20415(b)(1)(B)3. and 4., and §20420(b)].
- R. A surface water monitoring system shall be established to monitor each surface water body that could be affected by a release from the Unit [27 CCR §20415(c)].
- S. An unsaturated zone monitoring system shall be established for each Unit [27 CCR §20415(d)].
- T. The Discharger shall notify the Board **within seven days** if fluid is detected in a previously dry leachate collection and removal system, unsaturated zone monitoring system, or if a progressive increase is detected in the volume of fluid in a leachate collection and removal system [27 CCR §21710(c)(3)].
- U. Driller's logs for all monitoring wells shall to be submitted to the Board and the Department of Water Resources [CWC §13751 and 27 CCR §20415(b)(3)].

- V. Groundwater elevation, temperature, electrical conductivity, turbidity, and pH are to be accurately measured at each well each time groundwater is sampled [27 CCR §21415(e)(13)].
- W. The groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation being monitored shall be determined at least quarterly [27 CCR §20415(e)(15)].
- X. For each Unit, the Discharger shall collect all data necessary for selecting appropriate data analysis methods for establishing background values for each constituent of concern and for each monitoring parameter [27 CCR §20420(c)]. The Discharger shall propose a data analysis method that includes a detailed description of the criteria to be used for determining “measurably significant” evidence of a release from the Unit and determining compliance with the water quality protection standard [27 CCR §20415(e)(6) and (7)].
- Y. For statistical analysis of data, the Discharger shall use one of the methods described in §20415(e)(8)(A)-(E) of Title 27. A non-statistical data analysis method can be used if the method can achieve the goal of the particular monitoring program at least as well as the most appropriate statistical method [27 CCR §20415(e)(8)]. The Discharger shall use a statistical or nonstatistical data analysis method that complies with §20415(e)(7, 8, 9, and 10) of Title 27, to compare the downgradient concentration of each constituent of concern or monitoring parameter with its respective background concentration to determine whether there has been a “measurably significant” evidence of a release from the Unit. For any given monitoring point at which a given constituent has already exhibited a measurably significant indication of a release at that monitoring point, the Discharger may propose to monitor the constituent, at that well, using a concentration-versus-time plot.
- Z. The Discharger shall graph all analytical data from each monitoring point and background monitoring point and shall submit the graphs to the Board annually [27 CCR §20415(e)(14)].
- AA. **Verification Procedure.** If the data analysis procedures above indicate that a release has tentatively been identified from the Unit, the Discharger shall implement a verification procedure/retest option, in accordance with §20415(e)(8)(E) and §20420(j)(2) of Title 27. The new sample(s) shall be obtained **within 30 days** of the original indication [27 CCR §20415(e)(3)]. For any indicated monitoring parameter or constituent of concern, if the retest results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Section XI, Response To A Release, below. All retests shall be carried out only for those monitoring point(s)

at which a release is tentatively indicated, and only for the constituents of concern or monitoring parameter which triggered the indication there, as follows:

1. **Statistical Retest Method.** The statistical test method used by the Discharger to analyze the monitoring data shall include a procedure to verify that there is “measurably significant” evidence of a release from the Unit. The verification procedure shall include either a single “composite” retest (i.e., a statistical analysis that augments and reanalyzes the data from the monitoring point that indicated a release) or shall consist of at least two “discrete” retests (i.e., statistical analyses each of which analyzes only newly-acquired data from the monitoring point that indicated a release) [27 CCR §20415(e)(8)(E)]. The verification procedure shall comply with the requirements of §20415(e)(8)(E) of Title 27 in addition to the performance standards of §20415(e)(9) of Title 27.

XI. RESPONSE TO A RELEASE

A. Monitoring Point Evidence of a Release

1. If the Discharger determines that there is “measurably significant” evidence of a release from the Unit (i.e. the initial statistical comparison or nonstatistical comparison indicates, for any constituent of concern or monitoring parameter, that a release is tentatively identified), the Discharger shall [27 CCR §20420(j)]:
 - a) **Notification** — **immediately notify Board staff verbally** of the finding and provide written notification by certified mail **within seven days** of such determination. The notification shall, for each affected monitoring point, identify the monitoring parameters and constituents of concern that have indicated “measurably significant” evidence of a release from the Unit [27 CCR §20420(j)(1)];
 - b) **Retest Optional** — can immediately initiate the verification (retest) procedure pre-approved by the Board [pursuant to §20415(e)(8)(E) of Title 27] to verify that there is “measurably significant” evidence of a release from the Unit for a parameter or constituent which has indicated a release at a monitoring point [27 CCR §20420(j)(2)]; and
 - c) **Next Step** — immediately following detection of a release [or after completing the retest pursuant to b) above and confirming the

existence of a release], shall comply with the requirements of C.

(Release Has Been Verified) below [27 CCR §20420(j)(3)].

B. Physical Evidence of a Release

1. If the Discharger determines that there is a significant **physical** evidence of a release, the Discharger shall notify the Board **by certified mail within 7 days** of such determination, and within 90 days shall submit an amended report of waste discharge to make any appropriate changes to the detection monitoring program [27 CCR §20420(1)(1) & (2)].

C. Release Has Been Verified

1. If the detection was made based upon sampling and analysis for monitoring parameters, **immediately** sample all monitoring points in the affected medium at that Unit and determine the concentration of all constituents of concern. Because this constituent of concern scan does not involve statistical testing, the Discharger need collect and analyze only a single water sample from each monitoring point in the affected medium [27 CCR §20420(k)(1)].
2. The Discharger, **within 90 days** of determining “measurably significant” evidence of a release, shall submit an amended report of waste discharge to establish an evaluation monitoring program meeting the requirements of §20425 of Title 27 [27 CCR §20420(k)(5)].
3. The Discharger, **within 180 days** of determining “measurably significant” evidence of a release, shall submit to the Board an initial engineering feasibility study for a corrective action program necessary to meet the requirements of §20430 of Title 27. At a minimum, the engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [27 CCR §20420(k)(6)].
4. If the Discharger determines that there is “measurably significant” evidence of a release from the Unit at any monitoring point, the Discharger may demonstrate that a source other than the Unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to §20420(k)(7) of Title 27 in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements of §20420(k)(6) & (7) of Title 27 unless the demonstration successfully shows that a source other than the Unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In

making this demonstration, the Discharger shall notify the Board by certified mail of the intent to make the demonstration **within seven days** of determining “measurably significant” evidence of a release. The report shall be submitted to the Board **within 90 days** of determining “measurably significant” evidence of a release demonstrating that a source other than the Unit caused the evidence [27 CCR §20420(k)(7)].

5. The Discharger, **within 90 days** of establishing an Evaluation Monitoring Program, shall conduct an evaluation monitoring program used to assess the nature and extent of the release from the Unit and to design a corrective action program meeting the requirements of §20430 of Title 27. At a minimum, an evaluation monitoring program for a Unit shall include:
 - a) An assessment of the nature and extent of the release from the Unit. This assessment shall include a determination of the special distribution and concentration of each constituent of concern throughout the zone affected by the release. The Discharger shall submit this assessment to the Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(b)].
 - b) For MSW landfills, the Discharger shall comply with the additional notification and monitoring system requirements incorporated by reference into State Water Resources Control Board Resolution No. 93-62, regarding notification and monitoring relative to offsite or potential off-site migration of waste constituents [see 40 CFR 258.54, 40 CFR 258.55, and 27 CCR §20425(b)].
 - c) Update the initial engineering feasibility study for corrective action based on the data collected to delineate the release and from the ongoing monitoring program. The Discharger shall submit this updated engineering feasibility study to the Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(c)].
 - d) For MSW landfills, the Discharger shall discuss the results of the updated engineering feasibility study, prior to the selection of a remedy, in a public meeting with interested and affected parties [40 CFR 258.56(d)].
 - e) Submit an amended report of waste discharge to establish a corrective action program meeting the requirements of §20430 of Title 27 based on the data collected to delineate the release and on the updated engineering feasibility study. The Discharger shall submit this report to the Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(d)].

6. The Discharger, **within 14 days** of determining “measurably significant” evidence of a release, shall notify all persons who own the land or reside on the land that directly overlies any portion of the plume of contamination if contaminants have migrated off-site if indicated by sampling of detection monitoring wells [40 CFR 258.55(g)(1)(iii)].

XII. STORM WATER PROVISIONS

- A. New and existing Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [27 CCR §20260(c)].
- B. New and existing Class II landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period [27 CCR §20250(c)].
- C. MSW landfills located in a 100-year floodplain shall demonstrate that the Unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health or the environment [40 CFR 258.11(a)].
- D. The Discharger of an MSW landfill shall design, construct, and maintain the Unit to include a run-off control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm [40 CFR 258.26(a)].
- E. Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the precipitation conditions for the unit [27 CCR §20365(a)].
- F. Precipitation on landfills or waste piles which is not diverted by covers or drainage control systems shall be collected and managed through the leachate collection and removal system, which shall be designed and constructed to accommodate the precipitation conditions for each class Unit [27 CCR §20365(b)].
- G. Diversion and drainage facilities shall be designed, constructed, and maintained to [27 CCR §20365(c)]:
 1. accommodate the anticipated volume of precipitation and peak flows from surface runoff and under the precipitation conditions for the Unit;
 2. effectively divert sheet flow runoff laterally, via the shortest distance, into the drainage and collection facilities;

3. prevent surface erosion;
 4. control and intercept run-on, in order to isolate uncontaminated surface waters from water that might have come into contact with waste; and
 5. take into account:
 - a) for closed Units and for closed portions of Units, the expected final contours of the closed Unit, including its planned drainage pattern;
 - b) for operating portions of Units other than surface impoundments, the Unit's drainage pattern at any given time;
 - c) the possible effects of the Unit's drainage pattern on and by the regional watershed;
 - d) the design capacity of drainage systems of downstream and adjacent properties by providing for the gradual release of retained water downstream in a manner which does not exceed the expected peak flow rate at the point of discharge if there were no waste management facility; and
 6. preserve the system's function. The Discharger shall periodically remove accumulated sediment from the sedimentation or detention basins as needed to preserve the design capacity of the system.
- H. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [27 CCR §20365(d)].
- I. Surface and subsurface drainage from outside of a Unit shall be diverted from the Unit [27 CCR §20365(e)].
- J. Cover materials shall be graded to divert precipitation from the Unit, to prevent ponding of surface water over wastes, and to resist erosion as a result of precipitation [27 CCR §20365(f)].
- K. Any drainage layer in the final cover shall be designed and constructed to intersect with the final drainage system for the Unit in a manner promoting free drainage from all portions of the drainage layer [27 CCR §20365(f)].