

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0058

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF FRESNO
AND
CHEVRON USA, INC.
COALINGA SOLID WASTE DISPOSAL SITE
CLASS III LANDFILL
CLOSURE AND POST-CLOSURE MAINTENANCE,
FRESNO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. The County of Fresno operates and Chevron USA, Inc., (a Delaware Corporation) (landowner), hereinafter referred to jointly as “Discharger”, own and operate the Coalinga Solid Waste Disposal Site (Facility) about two miles south of Coalinga, in Section 9, T21S, R15E, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order by reference. The Facility is a municipal solid waste (MSW) landfill regulated under authority given in Water Code section 13000 et seq.; California Code of Regulations, title 27, section 20005 et seq. (hereafter Title 27); and 40 Code of Federal Regulations section 258 (a.k.a, “Subtitle D”) in accordance with State Water Resources Control Board (State Water Board) Resolution 93-62.
2. The Facility is on a 120-acre property at 30825 Lost Hills Road, Coalinga. The existing landfill area is approximately 52 acres and consists of two unlined units. The northern unit covers approximately 14 acres and the southern unit covers approximately 38 acres. The existing permitted landfill area is shown in Attachment B, which is incorporated herein and made part of this Order by reference. The Facility is comprised of Assessor’s Parcel Numbers (APN) 83-02-24 and 83-04-09. The City of Coalinga leased the site from Chevron USA and began landfill operations from 1961 until 1969. In 1969, the County of Fresno took over operations until the landfill ceased accepting waste on 10 November 2009.
3. In January 2013, the Discharger submitted a Final Closure and Post-Closure Maintenance Plan (FCPCMP) for the landfill, which serves as an amendment to the report of waste discharge. The information in the FCPCMP has been used in revising these waste discharge requirements (WDRs) to include closure construction and post-closure maintenance requirements. The FCPCMP contains the applicable information required in

Title 27. The FCPCMP and supporting documents contain information related to this revision of the WDRs including:

- a. The approved engineered alternative, Evapotranspirative (ET), final cover design, and
 - b. The approved pan lysimeter for monitoring the monolithic ET final cover.
4. On 27 October 2000, the Central Valley Water Board adopted Order 5-00-233 in which the landfill waste management units at the Facility were classified as Class III units for the discharge of municipal solid waste. This Order continues to classify the landfill units as Class III units in accordance with Title 27.

5. The existing and future landfill units authorized by this Order are described as follows:

<u>Unit</u>	<u>Area</u>	<u>Liner/LCRS¹ Components²</u>	<u>Unit Classification & Status</u>
Unit I (Northern)	14 acres	unlined	Class III, ready for closure
Unit II (Southern)	38 acres	unlined	Class III, ready for closure

6. There are no facilities or structures on-site at the Coalinga Solid Waste Disposal Site.
7. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated federal MSW regulations under the Resource Conservation and Recovery Act (RCRA), Subtitle D. These regulations are under 40 Code of Federal Regulations section 258, and are hereafter referred to as either "Subtitle D" in reference to the RCRA federal law that required the regulations or "40 C.F.R. section 258.XX". These regulations apply to all California Class II and Class III landfills that accept MSW. State Water Board Resolution 93-62 requires the Central Valley Water Board to implement in WDRs for MSW landfills the applicable provisions of the federal MSW regulations that are necessary to protect water quality, and in particular the containment provisions and the provisions that are either more stringent or that do not exist in Title 27.
8. This Order implements the applicable regulations for discharges of solid waste to land through Prohibitions, Specifications, Provisions, and monitoring and reporting requirements. Prohibitions, Specifications, and Provisions are listed in Sections A through H of these WDRs below, and in the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012 which are attached hereto and made a part of this Order by reference. Monitoring and reporting requirements are included in the Monitoring and Reporting Program (MRP) R5-2014-0058 and in the SPRRs. In general, requirements that are either in regulation or otherwise apply to all MSW landfills are considered to be "standard" and are therefore in the SPRRs. Any site-specific changes to

a requirement in the SPRRs are included in the applicable section (A through H) of these WDRs, and the requirement in the WDRs supersedes the requirement in the SPRRs.

9. Title 27 contains regulatory standards for discharges of solid waste promulgated by the State Water Board and the California Department of Resources Recovery and Recycling (CalRecycle). In certain instances, this Order cites CalRecycle regulatory sections. Title 27, section 20012 allows the Central Valley Water Board to cite CalRecycle regulations from Title 27 where necessary to protect water quality provided it does not duplicate or conflict with actions taken by the Local Enforcement Agency in charge of implementing CalRecycle's regulations.

SITE DESCRIPTION

10. The Coalinga Solid Waste Disposal Site is approximately one mile south of the City of Coalinga and one-half mile east of Warthan Creek. The Facility is within the active Jacalitos Oil Field and south and southeast of the active Coalinga Oil Field as defined by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).
11. Land uses within one mile of the Facility include oil field wells and associated oil field operations to the south, west, northwest and north, irrigated farmland to the north and northeast, industrial commercial development to the northwest along State Highway 198 west of the City of Coalinga.
12. Four municipal or agricultural groundwater supply wells have been identified within one mile of the Facility in addition to four oil wells to the west and northwest.
13. The Facility is located along the eastern edge of the Coast Ranges adjacent to the southern San Joaquin Valley and on the northeast flank of a northwest plunging anticline. The Tulare and San Joaquin Formations are exposed at the site. The Plio-Pleistocene Tulare Formation is exposed in the northern half of the site and consists generally of stream deposited, crossbedded silty sandstone and conglomerate. Some thin-bedded sandstone, clays, and limestones representing lake deposits are also present in this formation. The base of the Tulare Formation consists of diatomaceous white silty clay located just above a pelecypod deposit containing *Mya* species. The underlying Pliocene age San Joaquin Formation is exposed in the southern half of the site and consists of marine deposited, fine-grained silty sandstone, silt, and clay. The base of the San Joaquin Formation is comprised of the Cascajo Conglomerate layer, which is blue colored conglomerate and sandstone averaging about 50 feet in thickness. The formations dip approximately 17 degrees to the north.
14. The measured hydraulic conductivity of the native soils underlying the landfill units ranges between 1×10^{-10} and 1×10^{-6} centimeters per second (cm/s).

15. Based on a site-specific seismic analysis, the controlling maximum probable earthquake (MPE) for the site is a moment of magnitude 6.75 event along the Segment 13 of the Great Valley Fault Zone at a closest rupture distance of 13.5 kilometers from the site. It is estimated that a MPE event would produce a peak ground acceleration of 0.52 g at the site with a return period of 100 years.
16. The Facility receives an average of 7.58 inches of precipitation per year as measured at the Coalinga Station. The mean pan evaporation is 112 inches per year as measured at the Avenal Station.
17. The 100-year, 24-hour precipitation event for the Facility is estimated to be 4.84 inches, based on Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service of Hydrologic Development (NOAA) 2012.
18. The waste management facility is not within a 100-year flood plain based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, Community-Panel Number 065029-1685 B.
19. Storm water retention Basin A is located between Unit I and Unit II of the landfill, and proposed Basin B will be located north of Unit I as shown on Attachment B. The basins will retain storm water on-site during the rainy season and are normally dry during the summer months.

SURFACE WATER AND GROUNDWATER CONDITIONS

20. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for waters of the Basin.
21. Surface drainage is toward the north in the Kettleman Hydrologic Area. The closest surface water body is Warthan Creek, an intermittent stream, about one half mile from the waste management facility boundary.
22. The designated beneficial uses of surface water in the Kettleman Hydrologic Area (558.50), as specified in the Basin Plan, are agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-contact water recreation; warm fresh water habitat; wildlife habitat; rare, threatened and endangered species; and groundwater recharge.
23. Based upon the most recent monitoring report (1st Semiannual 2013), the first encountered groundwater ranges from about 146 feet to 206 feet below the native ground surface. Groundwater elevations range from about 514 feet MSL to 689 feet MSL.
24. Monitoring data from the past 10 years based on monitoring well CMW-1 indicate groundwater quality within the Tulare Formation has electrical conductivity (EC) typically

ranging between 3,800 and 4,800 micromhos/cm, with total dissolved solids (TDS) ranging between 3,100 and 3,800 milligrams per liter (mg/L). Monitoring data based on monitoring well CMW-4 indicate groundwater quality within the San Joaquin Formation has EC typically ranging between 690 and 800 micromhos/cm, with TDS ranging between 450 and 520 mg/L.

25. The direction of groundwater flow is generally toward the northeast. The estimated average groundwater gradient is approximately 0.044 feet per foot. The estimated average groundwater flow rate is 30.3 feet per year.
26. The northern portion of the Facility (Tulare Formation) is in Detailed Analysis Unit (DAU) 245 (Pleasant Valley Basin) of the Tulare Lake Basin Plan (Basin Plan). Beneficial uses of groundwater, as specified in the Basin Plan, are: domestic and municipal water supply, agricultural supply, and industrial service supply.

The southern portion of the Facility (San Joaquin Formation) is not in a DAU and is considered "All Other Ground Waters" with the beneficial use, as specified in the Basin Plan, of domestic and municipal supply. However, based upon the water quality data in Finding 24, it too would support the beneficial uses of agricultural supply, industrial supply and industrial process supply.

GROUNDWATER AND UNSATURATED ZONE MONITORING

27. The existing groundwater monitoring network for the landfill units consists of CMW-1, CMW-2A, CMW-3, CMW-4, CMW-5, CMW-6, and CMW-7, as shown in Attachment B.
28. There is no unsaturated zone monitoring system beneath Unit I and II to detect the release of liquids from the units. Unit I and II were permitted and in operation before 1 July 1991. Therefore, Unit I and II qualify for exemption of unsaturated zone monitoring pursuant to Section 20415(d) of Title 27. The Discharger demonstrated that there is no monitoring device or method designed to operate under the existing subsurface conditions to collect liquids migrating from the base of Units I and II to the unsaturated zone, and that the installation of an unsaturated zone detection monitoring system would be unreasonable.
29. The Discharger's detection monitoring program for groundwater at the landfill satisfies the requirements contained in Title 27.
30. Volatile organic compounds (VOCs) are often detected in a release from a MSW landfill and are often associated with releases of landfill gas rather than leachate. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a landfill unit. Title 27, sections 20415(e)(8) and (9) allows the use of a non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a landfill unit in

accordance with Title 27, sections 20415(b)(1)(B)2.-4. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.

31. The Central Valley Water Board may specify a non-statistical data analysis method pursuant to Title 27, section 20080(a)(1). Water Code section 13360(a)(1) allows the Central Valley Water Board to specify requirements to protect groundwater or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
32. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a landfill unit, the SPRRs specify a non-statistical method for the evaluation of monitoring data for non-naturally occurring compounds. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a landfill unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL) [a.k.a, laboratory reporting limit (RL)], indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing must be conducted to determine whether there has been a release from the landfill unit or the detection was a false detection. The detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.
33. For a naturally occurring constituent of concern, Title 27 requires concentration limits for each constituent of concern be determined as follows:
 - a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
 - b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).
34. The Discharger submitted a 21 January 2009 Water Quality Protection Standard (WQPS) report proposing statistical data analysis methods to calculate concentration limits for each monitored constituent in accordance with Title 27. Due to the differences in water quality between the Tulare and San Joaquin Formations (Finding No. 24), the use of interwell data analysis is not appropriate. The WQPS report proposed to use intrawell data analysis to calculate tolerance limits for the monitored constituents. The WQPS and approved data evaluation methods are included in MRP R5-2014-0058.
35. The detection monitoring system has been operating at the Facility since 1990; to date no releases from the Units have been confirmed.

LANDFILL CLOSURE

36. Title 27, section 21090 provides the minimum prescriptive final cover components for landfills consisting of, in ascending order, the following layers:
 - a. Two-foot soil foundation layer.
 - b. One-foot soil layer with low flow hydraulic conductivity, less than 1×10^{-6} cm/s or equal to the hydraulic conductivity of any bottom liner system.
 - c. Geomembrane layer (this layer is required for composite-lined landfills for equivalency to bottom liner).
 - d. One-foot soil erosion resistant/vegetative layer.
37. Title 27 allows engineered alternative final covers provided the alternative design will provide a correspondingly low flow-through rate throughout the post-closure maintenance period.
38. The Discharger submitted a January 2013 *Final Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance of the unlined landfill units at the Facility.
39. The Discharger proposes an engineered alternative final cover consisting of a 3.5-foot thick ET cover and vegetative layer that includes the existing 1.8-foot thick interim soil cover.
40. The Discharger submitted a December 2011 *Design of Evapotranspirative Final Cover* for the proposed final cover. A Microsoft Windows version of the UNSAT-H computer program, called WinUNSAT-H was used to model the water balance associated with the proposed ET cover and demonstrated that the proposed engineered alternative final cover is equivalent to or better than the prescriptive standard and that it meets the Title 27 performance goals.
41. Side slopes for the closed landfill will be sloped at 3H:1V and will include 15-foot wide benches every 50 vertical feet as required by Title 27.
42. The Discharger performed a slope stability analysis for the proposed final cover. The static slope stability analysis was performed using the computer software SLIDE[®], which performs an equilibrium analysis using the method of slices. This slope stability analysis is in accordance with SPRR Section G.
43. The Discharger's static and dynamic stability analysis demonstrates that the side slopes of the final cover will be stable in accordance with the requirements of Title 27.
44. Pursuant to Title 27, section 21090(e)(1), this Order requires a survey of the final cover following closure activities for later comparison with iso-settlement surveys required to be conducted every five years.

LANDFILL POST-CLOSURE MAINTENANCE

45. The Discharger submitted a January 2013 *Final Closure and Postclosure Maintenance Plan* for closure and post-closure maintenance. The plan includes inspection, maintenance, and monitoring of the landfill during the post-closure maintenance period, and includes a post-closure maintenance cost estimate for the entire Facility. Inspection and maintenance will include the condition of the final cover, drainage features, groundwater monitoring wells, access roads, and site security. The plan will be implemented for a minimum period of 30 years or until the waste no longer poses a threat to water quality, whichever is greater.
46. Once every five years during the post-closure maintenance period, aerial photographic maps of the closed landfill area will be made to identify and evaluate landfill settlement. Iso-settlement maps will be prepared to determine the amount of differential settlement occurring over the previous five years. Pursuant to Title 27, section 21090(e)(2), this Order requires iso-settlement maps to be prepared and submitted every five years.
47. The completed final cover will be periodically inspected for damage or defects by monitoring surface emissions pursuant to California Code of Regulations, title 17, section 95471(c) and Title 27, section 21090(a)(4)(A). Damages will be repaired and tested for adequacy based on the closure Construction Quality Assurance (CQA) Plan.

FINANCIAL ASSURANCES

48. Title 27, sections 21820 and 22206, require a cost estimate for landfill closure. The cost estimate must be equal to the cost of closing the landfill at the point in its active life when the extent and manner of operation would make closure the most expensive. When closing units in phases, the estimate may account for closing only the maximum area or unit of a landfill open at any time. The Discharger's January 2013 *Final Closure and Post Closure Maintenance Plan* includes a cost estimate for landfill closure. The lump sum estimate is for the cost to close the largest future area needing closure at any one time. The total amount of the closure cost estimate in 2013 dollars is \$3.8 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the closure cost estimate. As of 2013 the balance of the closure fund was \$3.8 million.
49. Title 27, sections 21840 and 22211 requires a cost estimate for landfill post-closure maintenance. The Discharger's January 2013 *Final Closure and Post Closure Maintenance Plan* includes a cost estimate for landfill post-closure maintenance. The amount of the cost estimate for post-closure maintenance in 2013 dollars is \$2.2 million. This Order requires that the Discharger maintain financial assurance with CalRecycle in at least the amount of the post-closure maintenance cost estimate adjusted annually for inflation. As of 2013, the balance of the post-closure maintenance fund was \$2.2 million

50. Title 27, section 22221 requires a cost estimate for corrective action of all known or reasonably foreseeable releases. The amount of the cost estimate for corrective action of all known or reasonably foreseeable releases in 2013 dollars is \$0.4 million. This Order requires that the Discharger maintain financial assurance with the CalRecycle in at least the amount of the cost estimate adjusted annually for inflation. As of 2013, the balance of the corrective action fund was \$0.4 million.

CEQA AND OTHER CONSIDERATIONS

51. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code section 21000 et seq., and the CEQA guidelines in accordance with California Code of Regulations, title 14, section 15301.

52. This Order implements:

- a. *The Water Quality Control Plan for the Tulare Lake Basin, Second Edition*;
- b. The prescriptive standards and performance goals of California Code of Regulations, title 27, section 20005 et seq., effective 18 July 1997, and subsequent revisions;
- c. State Water Board Resolution 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and revised on 21 July 2005.
- d. The applicable provisions of Title 40 C.F.R. section 258 "Subtitle D" federal regulations as required by State Water Board Resolution 93-62.

53. Based on the threat and complexity of the discharge, the Facility is determined to be classified 3-B, as defined below:

Category 3 threat to water quality, defined as, "Those discharges of waste that could degrade water quality without violating water quality objectives, or could cause a minor impairment of designated beneficial uses as compared with Category 1 and Category 2."

Category B complexity, defined as, "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."

54. Water Code section 13267(b) provides that:

In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of having discharged or discharging, or who proposed to discharge waste outside of its region

that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

55. The technical reports required by this Order and the attached "Monitoring and Reporting Program R5-2014-0058" are necessary to assure compliance with these waste discharge requirements.

PROCEDURAL REQUIREMENTS

56. Local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.

57. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

58. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that Order 5-00-233 is rescinded except for purposes of enforcement, and that the County of Fresno (operator) and Chevron USA, Inc. (owner), their agents, successors, and assigns, in order to meet the provisions of Division 7 of the Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any additional waste at this Facility is prohibited.
2. The Discharger shall comply with all Standard Prohibitions listed in Section C of the SPRRs.

B. DISCHARGE SPECIFICATIONS

1. The Discharger shall comply with all Standard Discharge Specifications listed in Section D of the SPRRs.

C. FACILITY SPECIFICATIONS

1. The Discharger shall comply with all Standard Facility Specifications listed in Section E of the SPRRs.

D. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall not proceed with construction until the final construction plans, specifications, and all applicable construction quality assurance (CQA) plans have been approved.
2. **By 31 December 2014**, the final cover system shall be constructed with an engineered alternative design known as an ET design. The cover shall consist of a vegetated soil layer placed over the existing interim cover soil. The soil layer shall be placed in such a manner that vegetative growth is assured while structural integrity is maintained.
3. A pan lysimeter shall be constructed on the upper deck of the unit beneath the vegetated soil layer to monitor the effectiveness of the final cover in accordance with a plan approved by Central Valley Water Board. The pan lysimeter consists of a 60-foot by 90-foot graded area lined with a 33-foot by 66-foot, 60-mil linear low-density polyethylene geomembrane pan.
4. The Discharger shall comply with all Standard Construction Specifications listed in Section F of the SPRRs.
5. The Discharger shall comply with all Storm Water Provisions listed in Section L of the SPRRs.

E. CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall close both landfill units with a final cover as proposed in the January 2013 Final Closure and Postclosure Maintenance Plan (FCPCMP) and as approved by this Order. The components of the approved final cover as proposed in the FCPCMP are listed in Finding 39.
2. The Discharger shall close the landfill with side slopes at steepness of 3H:1V or less, and top deck areas shall be sloped at three percent or greater.
3. The Discharger shall ensure that the vegetative/erosion resistant layer receives necessary seed, binder, and nutrients to establish the vegetation proposed in the final closure plan. The Discharger shall install necessary erosion and sedimentation controls to prevent erosion and sediment in runoff from the closed landfill, including the period the vegetation is being established.
4. The Discharger shall comply with all Standard Closure and Post-Closure Specifications listed in Section G and all Standard Construction Specifications that are applicable to closure in Section F of the SPRRs.

F. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for closure and post-closure maintenance for the landfill in at least the amounts described in Findings 48 and 49, adjusted for inflation annually. A report regarding financial assurances for closure and post-closure maintenance shall be submitted to the Central Valley Water Board by **1 June of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate. Financial assurance for closure must be maintained until the closure construction certification report is approved by the Executive Officer.
2. The Discharger shall update the closure and post-closure maintenance plan (FCPCMP) any time there is a change that will increase the amount of the closure and/or post-closure maintenance cost estimate. The updated FCPCMP shall be submitted to the Central Valley Water Board, the Local Enforcement Agency, and CalRecycle. The FCPCMP shall meet the requirements of Title 27, section 21769(b), and include a lump sum estimate of the cost of carrying out all actions necessary to carry out the first thirty years of post-closure maintenance. Reports regarding financial assurance required in F.1 above shall reflect the updated cost estimate.
3. The Discharger shall obtain and maintain assurances of financial responsibility with CalRecycle for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in at least the amount of the annual inflation-adjusted cost estimate described in Finding 50. A report regarding financial assurances for corrective action shall be submitted to the Central Valley Water Board by **1 June of each year**. This may be the same report that is submitted to CalRecycle for this purpose. If CalRecycle determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to CalRecycle and the Central Valley Water Board for at least the amount of the approved cost estimate.
4. The Discharger shall comply with all Standard Financial Assurance Specifications listed in Section H of the SPRRs.

G. MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater in accordance with Monitoring and Reporting Program (MRP) R5-2014-0058, and the Standard Monitoring Specifications listed in Section I of the SPRRs.
2. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, MRP R5-2014-0058, and the SPRRs.
3. The concentrations of the constituents of concern in waters passing the Point of Compliance (defined pursuant to Title 27, section 20164 as a vertical surface located at the hydraulically downgradient limit of the landfill unit that extends through the uppermost aquifer underlying the unit) shall not exceed the concentration limits established pursuant to MRP R5-2014-0058.
4. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in MRP R5-2014-0058 and the Standard Monitoring Specifications in Section I of the SPRRs.
5. The Discharger shall comply with all Standard Monitoring Specifications and Response to a Release specifications listed in Sections I and J of the SPRRs.

H. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the offices of the Fresno County Department of Public Works & Planning – Resources Division, including the MRP R5-2014-0058 and the SPRRs, and make it available during working hours to facility maintenance personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 and Subtitle D that are not specifically referred to in this Order.
3. The Discharger shall comply with MRP R5-2014-0058, which is incorporated into and made part of this Order by reference.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Subtitle D and/or Title 27, dated January 2012, which are attached hereto and made part of this Order by reference.

5. If there is any conflicting or contradictory language between the WDRs, the MRP, or the SPRRs, then language in the WDRs shall supersede either the MRP or the SPRRs, and language in the MRP shall supersede the SPRRs.
6. All reports required by this Order shall be submitted pursuant to Water Code section 13267.
7. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
A. Construction Plans	
Submit final construction and design plans for review and approval.	60 days prior to construction
B. Final Cover Construction	
Complete final cover construction in accordance with approved construction plans.	31 December 2014
C. Construction Report	
Submit a construction report for review and approval upon completion demonstrating construction was in accordance with approved construction plans (see Standard Construction Specification F.27 in the SPRRs).	90 days after construction completion
D. Financial Assurance Review	
Annual Review of Financial Assurance for postclosure maintenance (see Financial Assurance Specifications F.1 and F.2).	1 June of each year
Annual Review of Financial Assurance for initiating and completing corrective action (see Financial Assurance Specification F.3).	1 June of each year

8. The Discharger shall comply with all General Provisions listed in Section K of the SPRRs.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 28 March 2014.

Original signed by:

PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2014-0058
FOR
COUNTY OF FRESNO
AND
CHEVRON USA, INC.
COALINGA SOLID WASTE DISPOSAL SITE
CLASS III LANDFILL
CLOSURE AND POST-CLOSURE MAINTENANCE
FRESNO COUNTY

This monitoring and reporting program (MRP) is issued pursuant to California Water Code section 13267 and incorporates requirements for groundwater monitoring and reporting; facility monitoring, maintenance, and reporting; and financial assurances reporting contained in California Code of Regulations, title 27, section 20005, et seq. (hereafter Title 27), Waste Discharge Requirements (WDRs) Order No. R5-2014-0058, and the Standard Provisions and Reporting Requirements (SPRRs) dated January 2012. Compliance with this MRP is ordered by the WDRs and the Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

A. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater in accordance with Standard Monitoring Specifications in Section I of the SPRRs and the Monitoring Specifications in Section G of the WDRs. All monitoring shall be conducted in accordance with the approved 27 November 1996 *Sample Collection and Analysis Plan*, and the 25 May 2011 *Amendment to Sampling and Analysis Plan*, which includes quality assurance/quality control standards.

All compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells, and leachate seeps shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as indicated and listed in Tables I through IV.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program, and are identified in the approved Sample Collection and Analysis Plan.

The monitoring program of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
A.1	Groundwater Monitoring
A.2	Leachate Seep Monitoring
A.3	Facility Monitoring

1. **Groundwater Monitoring**

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of Title 27, sections 20415 and 20420. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The current groundwater detection monitoring system meets the applicable requirements of Title 27.

The current groundwater monitoring network shall consist of the following:

<u>Well</u>	<u>Status</u>
CMW-1	Active – DMP well
CMW-2A	Active – DMP well
CMW-3	Active – Non DMP well
CMW-4	Active – DMP well
CMW-5	Active – Non DMP well
CMW-6	Active – Non DMP well
CMW-7	Active – DMP well

Groundwater samples shall be collected from the detection monitoring wells, and any additional wells added as part of the approved groundwater monitoring system. The collected samples shall be analyzed for the parameters and constituents listed in Table I in accordance with the specified methods and frequencies. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

Once per quarter, the Discharger shall measure the groundwater elevation in each well, determine groundwater flow direction, and estimate groundwater flow rates in the uppermost aquifer and in any zones of perched water and in any additional portions of the zone of saturation monitored. The results shall be reported semiannually, including the times of expected highest and lowest elevations of the water levels in the wells, pursuant to Title 27, section 20415(e)(15).

Samples collected for the COC monitoring specified in Table I shall be collected and analyzed in accordance with the methods listed in Table IV every five years. Five-year COCs were last monitored in 2012 and shall be monitored again in **2017**. The results shall be reported in the Annual Monitoring Report for the year in which the samples were collected.

2. Leachate Seep Monitoring

Seep Monitoring: Leachate that seeps to the surface from a landfill unit shall be sampled and analyzed for the Field and Monitoring Parameters listed in Table II upon detection. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day). Reporting for leachate seeps shall be conducted as required in Section B.3 of this MRP, below.

3. Facility Monitoring

a. Annual Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for drainage control systems, cover systems, and groundwater monitoring wells; and shall assess preparedness for winter conditions (including but not limited to erosion and sedimentation control). The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. Annual facility inspection reporting shall be submitted as required in Section B.4 of this MRP.

b. Major Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all landfill side slopes for damage **within 7 days** following major storm events capable of causing damage or significant erosion. The Discharger shall take photos of any problems areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. Notification and reporting requirements for major storm events shall be conducted as required in Section B.5 of this MRP.

c. Five-Year Iso-Settlement Survey for Closed Units

For closed landfill units, the Discharger shall conduct a five-year iso-settlement survey and produce an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover's low-hydraulic-conductivity layer. For each portion of the

landfill, this map shall show the total lowering of the surface elevation of the final cover, relative to the baseline topographic map [Title 27, section 21090(e)(1 & 2)]. Reporting shall be in accordance with Section B.6 of this MRP.

d. **Standard Observations**

The Discharger shall conduct Standard Observations at the landfill in accordance with this section of the MRP. Standard observations shall be conducted in accordance with the following schedule:

<u>Landfill Unit Type</u>	<u>Frequency</u>	<u>Season</u>
Active	Weekly	Wet: 1 October to 30 April
Active	Monthly	Dry: 1 May to 30 September
Inactive/Closed	Monthly	Wet: 1 October to 30 April
Inactive/Closed	Quarterly	Dry: 1 May to 30 September

The Standard Observations shall include:

- 1) For the landfill units:
 - a) Evidence of ponded water at any point on the landfill outside of any contact storm water/leachate diversions structures on the active face (show affected area on map); and
 - b) Evidence of erosion and/or of day-lighted refuse.
- 2) Along the perimeter of the landfill units:
 - a) Evidence of leachate seeps, estimated size of affected area, and flow rate (show affected area on map); and
 - b) Evidence of erosion and/or of day-lighted refuse.
- 3) For receiving waters:
 - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area; and
 - b) Discoloration and turbidity - description of color, source, and size of affected area.

Results of Standard Observations shall be submitted in the semiannual monitoring reports required in Section B.1 of this MRP.

B. REPORTING

The Discharger shall submit the following reports in accordance with the required schedule:

Reporting Schedule

<u>Section</u>	<u>Report</u>	<u>End of Reporting Period</u>	<u>Due Date</u>
B.1	Semiannual Monitoring Report	30 June, 31 December	1 August, 1 February
B.2	Annual Monitoring Report	31 December	1 February
B.3	Seep Reporting	Continuous	Immediately & 7 Days
B.4	Annual Facility Inspection Report	31 October	15 November
B.5	Major Storm Event Reporting	Continuous	Immediately upon damage discovery & 14 days after repair completion
B.6	Survey and Iso-Settlement Map for Closed Landfills	Every Five Years	At Closure Completion and Every Five Years
B.7	Financial Assurances Report	31 December	1 June

Reporting Requirements

The Discharger shall submit monitoring reports **semiannually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order No. R5-2014-0058 and the Standard Provisions and Reporting Requirements (particularly Section I: "Standard Monitoring Specifications" and Section J: "Response to a Release"). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Semiannual and annual monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made. In addition, the Discharger shall enter all monitoring data and monitoring reports into the online Geotracker database as required by Division 3 of Title 27.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period. Such records shall be legible and shall show the following for each sample:

- a) Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b) Date, time, and manner of sampling;
- c) Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- d) Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e) Calculation of results; and
- f) Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

Required Reports

1. **Semiannual Monitoring Report:** Monitoring reports shall be submitted semiannually and are due on **1 August** and **1 February**. Each semiannual monitoring report shall contain at least the following:
 - a) For each groundwater monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

- 3) The method of purging used to stabilize water in the well bore before the sample is taken including the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; results of pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water;
 - 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
 - 5) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
- b) A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c) The estimated quarterly groundwater flow rate and direction in the uppermost aquifer, in any zones of perched water, and in any additional zone of saturation monitored based upon water level elevations taken prior to the collection of the water quality data submitted in the report [Title 27, section 20415(e)(15)].
 - d) Cumulative tabulated monitoring data for all monitoring points and constituents for groundwater, and leachate. Concentrations below the laboratory reporting limit shall not be reported as "ND" unless the reporting limit is also given in the table. Otherwise they shall be reported "<" the reporting limit (e.g., <0.10). Units shall be as required in Tables I and II unless specific justification is given to report in other units. Refer to the SPRRs Section I "Standard Monitoring Specifications" for requirements regarding MDLs and PQLs.
 - e) Laboratory statements of results of all analyses evaluating compliance with requirements.
 - f) An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits, and the results of any required verification testing for constituents exceeding a concentration limit. Report any actions taken under Section J: Response to a Release for verified exceedances of a concentration limit.
 - g) An evaluation of the effectiveness of run-off/run-on control facilities.
 - h) A summary of all Standard Observations for the reporting period required in Section A.3.d of this MRP.
 - i) A summary of inspection, leak search, and repair of final covers on any closed landfill units in accordance with an approved final post-closure maintenance plan as required by Standard Closure and Post-Closure Maintenance Specifications G.26 through G.29 of the SPRRs.

2. **Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **1 February** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the second semiannual report, but if so, shall clearly state that it is both a semi-annual and annual monitoring report in its title. Each Annual Monitoring Report shall contain the following information:
 - a) All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. If a 5-year COC event was performed, then these parameters shall also be graphically presented. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b) An evaluation of the monitoring parameters with regards to the cation/anion balance, and a graphical presentation using a Stiff diagram, a Piper graph, or a Schoeller plot.
 - c) All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27, section 20420(h)], that facilitates periodic review by the Central Valley Water Board.
 - d) Hydrographs of each well showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.
 - e) A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - f) A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
 - g) Updated concentration limits for each monitoring parameter at each monitoring well based on the new data set.
3. **Seep Reporting:** The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Central Valley Water Board **within seven days**, containing at least the following information:

- a) A map showing the location(s) of seepage;
 - b) An estimate of the flow rate;
 - c) A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d) Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table II of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
 - e) Corrective measures underway or proposed, and corresponding time schedule.
4. **Annual Facility Inspection Reporting:** By **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.3.a of this MRP, above.
 5. **Major Storm Event Reporting:** Following major storm events capable of causing damage or significant erosion, the Discharger **immediately** shall notify Central Valley Water Board staff of any damage or significant erosion upon discovery and report subsequent repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.3.b of this MRP, above.
 6. **Survey and Iso-Settlement Map for Closed Landfills:** The Discharger shall conduct a survey and submit an iso-settlement map for each closed area of the landfill every five years pursuant to Title 27, section 21090(e). Refer to Section A.3.c of this MRP, above.
 7. **Financial Assurances Report:** By **1 June** of each year, the Discharger shall submit a copy of the annual financial assurances report due to CalRecycle that updates the financial assurances for closure, post-closure maintenance, and corrective action. Refer to Financial Assurances Specifications F.1 through F.3 of the WDRs.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit, the Water Quality Protection Standard shall consist of all COCs, the concentration limit for each constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard other than annual update of the concentration limits shall be submitted in a report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a waste management unit or portion of a unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.
- b. Include a map showing the monitoring points and background monitoring points for the groundwater monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).
- d. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D)] or section 20415(e)(8)(E).
- e. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Discharger proposed the methods for calculating concentration limits in the 21 January 2009 *Water Quality Protection Standard Report*. The WQPS report proposed to use Intrawell data analysis to calculate tolerance limits for the monitored constituents.

The Water Quality Protection Standard shall be updated annually for each monitoring well using new and historical monitoring data.

2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Tables I through III for the specified monitored medium.

3. Constituents of Concern (COCs)

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years [Title 27, sections 20395 and 20420(g)]. The COCs for all waste management units at the facility are those listed in Tables I and II for the specified monitored medium, and Table IV. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program. The last 5-year COC report was submitted to the Central Valley Water Board in the 2012 *Annual Monitoring Report*, and 5-year COCs are due to be monitored again in **2017**

4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

The methods for calculating concentration limits were included in the 21 January 2009 *Water Quality Protection Standard Report*. The WQPS report proposed to use Intrawell data analysis to calculate tolerance limits for the monitored constituents.

5. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Standard Monitoring Specification I.45 of the SPRRs, then:

- a. For analytes that are detected in less than 10% of the background samples (such as non-naturally occurring constituents), the Discharger shall use the

non-statistical retesting procedure required in Standard Monitoring Specification I.46 of the SPRRs.

- b. For analytes that are detected in 10% or greater of the background samples (naturally occurring constituents), the Discharger shall use one of the statistical retesting procedure as required in Standard Monitoring Specification I.47 of the SPRRs.

6. Point of Compliance

The point of compliance for the water standard at each waste management unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the unit. The following are monitoring locations at the point of compliance:

Point of Compliance Monitoring Wells

CMW-1
CMW-2A
CMW-4
CMW-7

7. Compliance Period

The compliance period for each waste management unit shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program [Title 27, section 20410].

8. Monitoring Points

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

D. TRANSMITTAL LETTER FOR ALL REPORTS

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those

violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Original signed by:
Ordered by: _____
PAMELA C. CREEDON, Executive Officer

28 March 2014

(Date)

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Field Parameters			
Groundwater Elevation	Ft. & 100ths, M.S.L.	Quarterly	Semiannual
Temperature	°F	Semiannual	Semiannual
Electrical Conductivity	umhos/cm	Semiannual	Semiannual
pH	pH units	Semiannual	Semiannual
Turbidity	Turbidity units	Semiannual	Semiannual
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L ¹	Semiannual	Semiannual
Chloride	mg/L	Semiannual	Semiannual
Carbonate	mg/L	Semiannual	Semiannual
Bicarbonate	mg/L	Semiannual	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual	Semiannual
Sulfate	mg/L	Semiannual	Semiannual
Calcium	mg/L	Semiannual	Semiannual
Magnesium	mg/L	Semiannual	Semiannual
Potassium	mg/L	Semiannual	Semiannual
Sodium	mg/L	Semiannual	Semiannual
Volatile Organic Compounds (USEPA Method 8260B, short list, see Table IV)	ug/L ²	Semiannual	Semiannual
5-Year Constituents of Concern (see Table V)			
Total Organic Carbon	mg/L	5 years	5 years
Inorganics (dissolved)	ug/L	5 years	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	ug/L	5 years	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270D)	ug/L	5 years	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	ug/L	5 years	5 years
Organophosphorus Compounds (USEPA Method 8141B)	ug/L	5 years	5 years

¹ Milligrams per liter

² Micrograms per liter

TABLE II
LEACHATE SEEP MONITORING ¹

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Field Parameters			
Total Flow	Gallons	Monthly	Semiannual
Flow Rate	Gallons/Day	Monthly	Semiannual
Electrical Conductivity	umhos/cm	Quarterly	Semiannual
pH	pH units	Quarterly	Semiannual
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L	Annually	Annually
Chloride	mg/L	Annually	Annually
Carbonate	mg/L	Annually	Annually
Bicarbonate	mg/L	Annually	Annually
Nitrate - Nitrogen	mg/L	Annually	Annually
Sulfate	mg/L	Annually	Annually
Calcium	mg/L	Annually	Annually
Magnesium	mg/L	Annually	Annually
Potassium	mg/L	Annually	Annually
Sodium	mg/L	Annually	Annually
Volatile Organic Compounds (USEPA Method 8260B, short list, see Table IV)	ug/L	Annually	Annually
5-Year Constituents of Concern (see Table V)			
Total Organic Carbon	mg/L	5 years	5 years
Inorganics (dissolved)	ug/L	5 years	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	ug/L	5 years	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270D)	ug/L	5 years	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	ug/L	5 years	5 years
Organophosphorus Compounds (USEPA Method 8141B)	ug/L	5 years	5 years

¹ Leachate seeps shall be sampled and analyzed for the Field and Monitoring Parameters in this table upon detection. The quantity of leachate shall be estimated and reported in gallons/day. Also, refer to Section B.3

TABLE III

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Volatile Organic Compounds, short list:

USEPA Method 8260B

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)

TABLE III
MONITORING PARAMETERS FOR DETECTION MONITORING
Continued

Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE IV
5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum	6010
Antimony	7041
Barium	6010
Beryllium	6010
Cadmium	7131A
Chromium	6010
Cobalt	6010
Copper	6010
Silver	6010
Tin	6010
Vanadium	6010
Zinc	6010
Iron	6010
Manganese	6010
Arsenic	7062
Lead	7421
Mercury	7470A
Nickel	7521
Selenium	7742
Thallium	7841
Cyanide	9010C
Sulfide	9030B

Volatile Organic Compounds, extended list:

USEPA Method 8260B

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)

TABLE IV

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, 1-Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- 1,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene

TABLE IV

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270D - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)

TABLE IV

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor

TABLE IV

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

TABLE IV

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Continued

Chlorophenoxy Herbicides:

USEPA Method 8151A

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds:

USEPA Method 8141B

Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

INFORMATION SHEET

ORDER R5-2014-0058
COUNTY OF FRESNO AND CHEVRON USA, INC.
CLOSURE AND POST-CLOSURE MAINTENANCE
COALINGA SOLID WASTE DISPOSAL SITE
FRESNO COUNTY

The County of Fresno operates and Chevron USA, Inc., (a Delaware Corporation) (landowner), hereinafter referred to jointly as "Discharger", own and operate the Coalinga Solid Waste Disposal Site (facility) about two miles south of Coalinga. The City of Coalinga leased the site from Chevron USA and began landfill operations from 1961 until 1969. In 1969, the County of Fresno took over operations until the landfill ceased accepting waste on 10 November 2009.

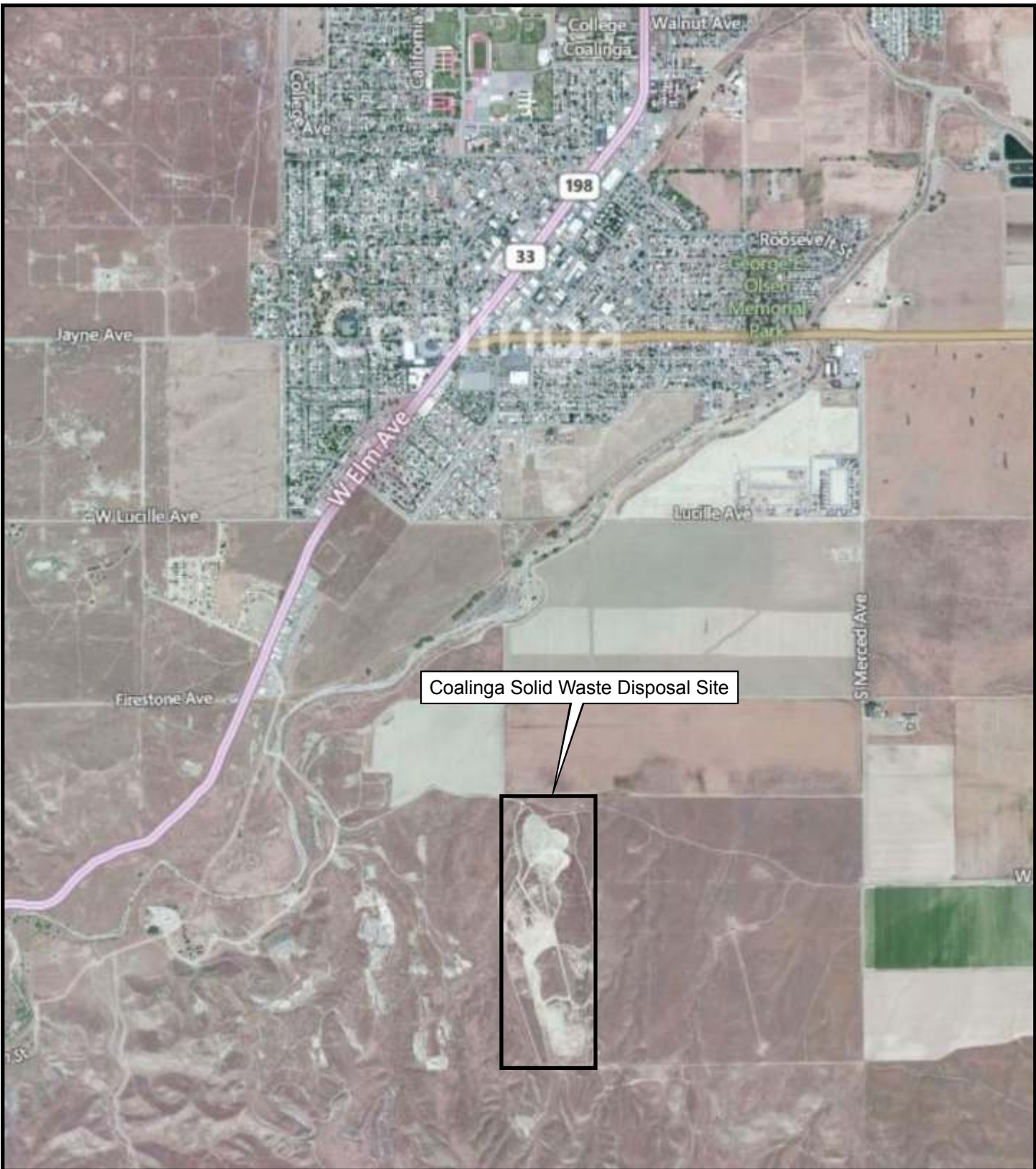
The proposed Order revises the existing WDRs to provide for closure and post-closure maintenance. The facility contains two unlined units, the northern unit covers approximately 14 acres, and the southern unit covers approximately 38 acres.

The facility is located along the eastern edge of the Coast Ranges adjacent to the southern San Joaquin Valley and on the northeast flank of a northwest plunging anticline. The Tulare and San Joaquin Formations are exposed at the site. The Plio-Pleistocene Tulare Formation is exposed in the northern half of the site and consists generally of stream deposited, crossbedded silty sandstone and conglomerate. Some thin-bedded sandstone, clays, and limestones representing lake deposits are also present in this formation. The base of the Tulare Formation consists of diatomaceous white silty clay located just above a pelecypod deposit containing *Mya* species. The underlying Pliocene age San Joaquin Formation is exposed in the southern half of the site and consists of marine deposited, fine-grained silty sandstone, silt, and clay. The base of the San Joaquin Formation is comprised of the Cascajo Conglomerate layer, which is blue colored conglomerate and sandstone averaging about 50 feet in thickness. The formations dip approximately 17 degrees to the north.

Based upon the most recent monitoring report (1st Semiannual 2013), the first encountered groundwater ranges from about 146 feet to 206 feet below the native ground surface. Groundwater elevations range from about 514 feet MSL to 689 feet MSL. The direction of groundwater flow is generally toward the northeast. The estimated average groundwater gradient is approximately 0.044 feet per foot. The estimated average groundwater flow rate is 30.3 feet per year.

The detection monitoring system has been operating at the facility since 1990. To date, no releases from the Units have been confirmed.

The Discharger submitted a report titled Design of Evapotranspirative Final (ET) Cover in December 2011. Central Valley Water Board staff, in a letter dated 11 July 2012, concurred with the Dischargers ET final cover design proposal. The proposed final cover consists of an ET cover, which is an engineered alternative. In an ET cover design, the low-hydraulic conductivity layer is replaced by a vegetated soil layer that is engineered and constructed to absorb moisture during precipitation events and expel moisture by evaporation and transpiration before it flows through the base of the cover. The proposed ET final cover consists of a 3.5-foot thick evapotranspirative cover and vegetative layer that incorporates the existing 1.8-foot thick interim soil cover. The Discharge submitted a Final Closure/Post-Closure Maintenance Plan in January 2013. Staff found the Final Closure/Post-Closure Maintenance Plan complete and adequate in a letter dated 18 October 2013.



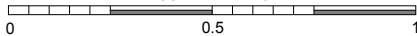
Coalinga Solid Waste Disposal Site



Map Source:
 ESRI's ArcGIS Online premium services
 Section 9, T21S, R15E, MDB&M

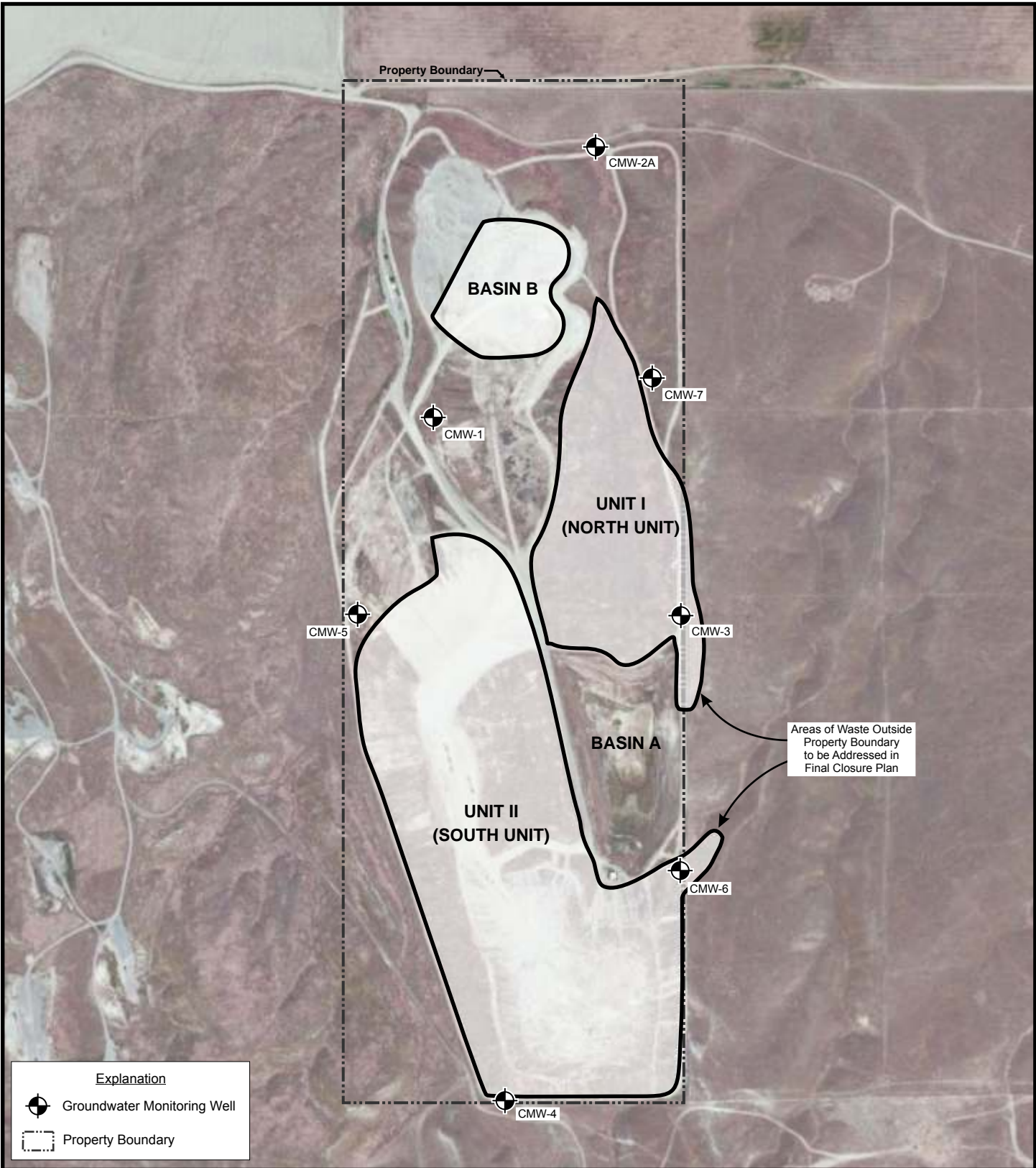


SCALE IN MILES

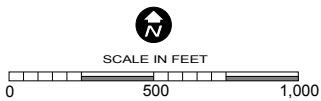


LOCATION MAP

ORDER NO. R5-2014-0058
 WASTE DISCHARGE REQUIREMENTS
 FOR
 COUNTY OF FRESNO
 AND CHEVRON USA, INC.
 COALINGA SOLID WASTE DISPOSAL SITE
 CLASS III LANDFILL
 CLOSURE AND POST-CLOSURE MAINTENANCE
 FRESNO COUNTY



Map Source:
 ESRI's ArcGIS Online premium services
 Section 9, T21S, R15E, MDB&M



SITE MAP

ORDER NO. R5-2014-0058
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