CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-0063

WASTE DISCHARGE REQUIREMENTS
FOR

MELBOURNE ALLENBAUGH AND STEVE ALLENBAUGH,
AND

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

MAYFLOWER MINE

SIERRA COUNTY

The California Regional Water Control Board, Central Valley Region ("Central Valley Water Board" or "Board") finds that:

1. Melbourne Allenbaugh and Steve Allenbaugh, and the United States Department of Agriculture, Forest Service (Forest Service) are the Dischargers at the Mayflower Mine, Sierra County. Melbourne Allenbaugh and Steve Allenbaugh are the mine claimants and operators and therefore have primary responsibility for compliance with these waste discharge requirements (WDRs), including day-to-day operations, monitoring, and closure and post-closure maintenance. The Forest Service is the administrator of the public lands where the discharge occurs, and is ultimately responsible for ensuring compliance with these WDRs and therefore is also named as a Discharger. For the purposes of these WDRs, unless otherwise noted, the term "Discharger" refers to Melbourne Allenbaugh and Steve Allenbaugh.

2. On 5 November 2012, the Discharger submitted a report of waste discharge (ROWD) for the Mayflower I placer mining claim (the Facility). The Facility is a mining claim located on public lands owned by the United States Government and administered by the Forest Service.

SITE DESCRIPTION

3. The Facility is located along Kimberly Creek in Township 18 North, Range 10 East, Section 5, Mount Diablo Meridian (see Attachment A, which is incorporated herein and made part of this Order by reference). The Facility covers 20 acres of Section 5 and the elevation at the site is approximately 4,200 feet above mean sea level.

4. The Facility is a gold mine regulated by the Board under the authority of the Water Code and Title 27 of the California Code of Regulations ("Title 27"). No prior WDRs have been issued for the Facility.

5. The Facility is on public lands open to mineral acquisition under the General Mining Law of 1872. Locatable metallic minerals include gold, silver, lead, copper, zinc, nickel, etc. The Facility contains an existing underground placer gold mining operation. Forest Service documents indicate that the Facility was operated since at least the early 1980s. The primary commodity being mined is gold. No use of chemicals such as cyanide or mercury is proposed.

6. Authorization to enter National Forests for mineral development is provided by 16 U.S.C. 478. Mining at the site has been authorized under the Mining Laws governing locatable minerals on the North Yuba Ranger District, Tahoe National Forest, under 36 CFR 228A.

FOREST SERVICE REQUIREMENTS

7. The Forest Service requires a Plan of Operations from mining operators when mining activity is likely to cause a significant disturbance of surface resources, including surface waters. A Plan of Operations must be approved prior to the start of any work and must incorporate applicable best management practices (BMPs) for the protection of water-related beneficial uses and the control of discharges associated with mining activities.

8. The Forest Service also requires that all new Plans of Operations for mining operations on National Forest System lands comply with the Federal Water Pollution Control Act of 1972 (Clean Water Act or CWA), 33 U.S.C §§ 1251-1387 and the Porter-Cologne Water Quality Control Act, Chapter 4, Article 4 Section 13260 (a)(1). Where prospecting, or mining related actions discharge, or have the potential to discharge wastes(s) into waters of the State, the operator is required by state law to file a report of waste discharge with the appropriate Regional Board. Such filing can result in the issuance of waste discharge requirements (WDRs) to the operator by the Regional Board. The WDRs become a mandatory provision of the Plan of Operations for mining activity, which is approved and administered by the Forest Service.

PROPOSED MINING OPERATION

9. Information in the ROWD has been used to develop these WDRs. The ROWD and supporting documents contain information related to construction, operations, and closure of the Facility.

10. All mining is performed underground where the placer gravels are extracted by means of an existing adit that extends several hundred feet under the buried tertiary channel below the andesite cap. The pay zone is typically found at the contact of the buried tertiary channel with the underlying serpentine bedrock.

11. Ore bearing gravels are drilled and blasted, loaded into mine cars, pushed to the surface, dumped into the ore bin, and processed through the trommel. At this time, material for the trommel circuit is not crushed. Waste rock is dumped adjacent to the bin and subsequently transported by Bobcat loader to the tailings placement area.

12. The trommel below the ore bin separates the ore by gravity using water. The trommel is operated by a five-horsepower motor. Processing of the gold bearing material is performed by conventional washing, scrubbing, and gravity separation using water and screening. Gold is removed from the concentrates by physical separation. No use of chemicals such as cyanide or mercury is proposed.

13. Tailings and process water from the trommel are contained in a small process pond located at the trommel outfall. Once the tailings have drained, they are routinely removed from the process pond using a Bobcat loader, and are placed at the tailings disposal area (“Mining Unit”). The Mining Unit is approximately 200 feet long and extends south of the bin and trommel area. Waste rock is dumped adjacent to the bin and subsequently transported by Bobcat loader to the Mining

Unit. Storm water is diverted from the Mining Unit by a series of berms, ditches and sediment traps.

14. Water from the process pond is decanted by gravity and flows into a small earthen catchment and then to Settling Pond 1 via a 6-inch diameter pipe. Settling Pond 1 is connected by a six-inch diameter pipe to Settling Pond 2, and the discharge point from Settling Pond 2 is a capped 6-inch diameter PVC pipe on the southern end of the pond.

15. During summer months, when the mine is active, water reportedly leaves the ponds via infiltration and evaporation, and no process water is discharged from the ponds. Based on the water balance analysis presented in the ROWD, Settling Pond 2 is expected to discharge storm water to Kimberly Creek during the winter months (typically January to May). The Dischargers do not plan to perform surface operations (such as processing) during the rainy season. If processing is performed during the rainy season (in periods of dry weather), the process pond and settling ponds must be evacuated of waste and contact water prior to forecast storm events.

16. The Dischargers anticipate that 1 to 30 carts will be mined per month during the dry season, with each cart load holding ¾ ton. Up to approximately 200 tons of material will be mined per year, for a period of up to 20 years. The claimants do not plan to perform surface operations (such as processing) during the rainy season.

GEOLOGY

17. Based on the Geologic Map of the Chico Quadrangle, California (Department of Conservation, Division of Mines and Geology (DMG) 1992), the Facility is a short distance east of the Goodyears Creek Fault, on the western edge of the north-trending Melones Fault Zone. The site geology is mapped as being partially to completely serpentinized peridotite. Tertiary gravel deposits and volcanic pyroclastic rocks (andesite) are mapped in the site vicinity.

18. The Fault Activity Map of California and Adjacent Areas, California (CDMG, 1994) indicates that segments of the Goodyears Creek Fault and another unnamed fault associated with the Melones Fault Zone is within approximately one mile of the Site. These faults are described as pre-Quaternary, having no recognized displacement within the last 1.6 million years.

PRECIPITATION

19. A weather station at Camptonville (latitude 39.50°N, longitude 121.10°W, elevation 3500 feet above sea level) is approximately 12 miles west-northwest of the Facility, and approximately 600 feet lower in elevation. Average rainfall data for the Camptonville weather station was presented in the ROWD. The period of record was from 1907 to 1972. The reported annual average rainfall is 61.1 inches.

20. The 100-year, 24-hour precipitation for the Facility is 12.5 inches, and the precipitation intensity is 0.519 inches per hour.

LAND USE

21. Land within one mile of the perimeter of the Facility is both publicly (Forest Service) and privately held. A privately held piece of property is within several hundred feet southwest of the Site. Based on satellite imagery (Acme Mapper 2.0), no residences, crops, or livestock are present within one mile of the perimeter of the Facility. Several other small-scale mining operations are located in the Facility vicinity.

WASTE CHARACTERIZATION

22. Based on the results of acid base accounting of the solid mining waste in the Discharger's Report of Waste Characterization (Characterization Report) (H&K, May 2011), the Discharger concluded that the proposed small-scale mining and processing of placer deposits has a low potential for acid mine drainage. Furthermore, laboratory analysis of total and dissolved metals from the adit discharge was below beneficial use criteria and the pH of water discharging from the adit was 7.67. The present discharge from the adit is considered a good indicator of the potential threat to water quality posed by the proposed mining activities.

23. The Discharger's ROWD concluded that the physical and chemical characterization of the mine waste demonstrates that the potential to impact water quality is low. This determination is based on the appropriate erosion and sediment control practices being implemented at the proposed mining operation and tailings management unit.

24. Based on the results of the water quality evaluation presented in the Characterization Report, the mine waste may be classified as Group B mine waste as defined in California Code of Regulations (CCR) Title 27, without taking any other factors into consideration. Per Section 22480(c) of CCR Title 27, which pertains to the management of mining waste, the mine waste may be classified as Group C waste because it contains hazardous constituents only at low concentrations, has low acid generation potential, and is readily containable by measures that are less stringent than those required for Group B waste.

25. Based on the ROWD and information provided in Findings 24, 25 and 26, the mining waste at this facility is a Group C per Title 27 Section 22480.

26. To ensure that Group C waste classification remains appropriate, the Monitoring and Reporting Program will require ongoing sampling and characterization of the mining waste in accordance with Water Code section 13260(k). Ongoing characterization is intended to detect changes in geology and mineralogy and then modify waste containment and waste discharge procedures to address any changes. Ongoing characterization of the mining waste shall be at the frequency of one sample for every 500 cubic yards of mining waste discharged or at least one sample every third calendar year.

POTENTIAL IMPAIRMENT OF GROUND WATER AND SURFACE WATER

27. Based on the Group C classification in Finding 25 above, groundwater monitoring is not required by these WDRs. Should the waste group classification change, the need for groundwater monitoring should be reassessed.

28. Routine surface water monitoring in the settling ponds, and at upstream and downstream locations in Kimberly Creek is proposed pursuant to the Dischargers Sampling and Analysis Plan (SAP) contained in the ROWD. The SAP addresses surface water quality monitoring for the purposes of detecting, characterizing, and responding to releases of mining waste to surface water and Water Quality Order 97-03-DWQ (Industrial General Stormwater Permit). At the Mayflower Mine, runoff from the mine site flows to settling ponds that periodically discharge to Kimberly Creek.

29. The Central Valley Water Board has adopted the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (the "Basin Plan") that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives. The Basin Plan, at page II-2.00, states that the "…beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for Kimberly Creek or Kanaka Creek, but does identify present and potential uses for the Yuba River, to which Kimberly Creek or Kanaka Creek are tributary. These beneficial uses are as follows: municipal and domestic supply; agricultural supply, including stock watering; hydropower generation; water contact recreation; non-contact water recreation, including aesthetic enjoyment; cold freshwater habitat; cold spawning, and wildlife habitat.

30. Pursuant to the conditions of the use permit, **no discharge to surface water other than the settling ponds is proposed**. If processing is performed during the rainy season, the process pond and settling ponds must be evacuated of waste and contact water prior to forecast storm events. Waste must be contained in the waste disposal area, with slimes either mixed into the granular waste or placed in a trench beneath granular waste backfill. Erosion controls (such as straw mulch and wattles) must be installed at the disposal area prior to storm events, and must be maintained throughout the rainy season. Operation during the rainy season will require the management of storm water runoff to avoid discharge of contact water, other than the settling pond discharge.

WASTE MANAGEMENT UNIT DESIGN

31. Regulations set forth in Title 27, section 22490, which establish prescriptive standards for construction of Mining Units and containment are not applicable for Group C mining wastes. Group C mining wastes are wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity. However, the term Mining Unit is preserved to define the location of the tailings disposal area.

32. The Characterization Report demonstrated that the waste may be characterized as Group C mining waste under Title 27, provided that the proposed mining operation and tailings management be performed in accordance with appropriate erosion and sediment control practices to reduce the chance of water quality impact associated with the operation and that the mining waste (tailings) is discharged in the designated Mining Unit.

33. The Group C mining tailings disposal area ("Mining Unit") is shown on Attachment B, which is incorporated herein and made part of this Order by reference. All tailings placed as part of the proposed mining operation are to be permanently placed in the Mining Unit and configured with slopes no steeper than 3:1, horizontal to vertical. At closure, permanent erosion control

measures, including vegetation and drainage routing, are to be in established at all areas disturbed by the mining operation. Ponds are to be backfilled, and all conveyance pipes are to be removed from the site.

CLOSURE AND POST-CLOSURE MAINTENANCE PLAN FINANCIAL ASSURANCE

34. Financial assurances for mining units Per Title 27 section 22510(g) the Discharger may propose Alternative Financial Assurances and Board may accepted the proposal if the following applies:

    "If a lead agency acting under the authority of §2774(a) of the Public Resources Code requires assurances of financial responsibility, these assurances can be used to fulfill all comparable requirements under Title 27 section 22510(f), provided that:

    (1) the RWQCB approves the assurance; and

    (2) the RWQCB is named as alternate payee."

35. In place of a California Surface Mining and Reclamation Act (SMARA) reclamation plan, the Dischargers ROWD includes a closure and post-closure maintenance plan. The Dischargers proposed mining activities are relatively small in scale and are not anticipated to result in the need for a (SMARA) reclamation plan. The Discharger has provided the Forest Service with a financial assurance bond of $5,000 for closure and post-closure maintenance activities. These WDRs consider the Mayflower Mine financial assurance as functionally equivalent to the post-closure funding required by Title 27, section 22510(f), provided that the Central Valley Water Board is named as an alternate payee for the financial assurance mechanism. The Central Valley Water Board shall periodically review the financial assurance and the Discharger shall update the financial assurance upon request by the Central Valley Water Board.

CEQA AND OTHER CONSIDERATIONS

36. Sierra County has determined that no County discretionary approvals subject to the California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.) are required for the operation of the mine site. All wastewater systems have already been installed and are currently in use. This Order places additional regulatory requirements on the continued use of these structures and facilities. These requirements are being prescribed to ensure the continued protection of the environment. This action is therefore exempt from the provisions of the CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting … of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of natural resources (Cal. Code Regs., tit. 14, § 15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, § 15308.).

37. This order implements:

    a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth 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;

38. Based on the threat and complexity of the discharge, the facility is determined to be classified, 3-C as defined below:

    a. 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."

    b. Category C complexity, defined as, "Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 or the Water Code not included in Category A or Category B as described above. Included are dischargers having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal."

39. 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 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 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.

40. The technical reports required by this Order and the attached Monitoring and Reporting Program are necessary to assure compliance with these WDRs, and to assure that the discharges will comply with the Basin Plan. The Dischargers owns and operates the Facility, and is responsible for the discharges of waste at the facility subject to this Order and is, subject to requirements imposed pursuant to Water Code 13267.

PROCEDURAL REQUIREMENTS

41. All 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.

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

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

44. 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 that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final 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.

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that Melbourne Allenbaugh and Steve Allenbaugh (Facility owner and operator) and the Forest Service (landowners), their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of “hazardous waste” or “Group A” or “Group B” mining waste at the Facility is prohibited. For the purposes of this Order, the terms “hazardous waste”, “Group A”, “Group B”, and “Group C” mining wastes are as defined in Title 27.

2. The discharge of any waste other than mining wastes into the Mining Unit is prohibited. Prohibited wastes may include, but are not limited to, oil, grease, solvents, other petroleum products, and toxic and hazardous materials.

3. The discharge of mining waste at the Facility from sources other than the Mayflower Mine is prohibited.

4. The discharge of mining wastes outside the Mining Unit is prohibited except as otherwise permitted under additional Central Valley Water Board orders.

5. The discharge of process water to surface water or surface water drainage courses is prohibited.

6. The Discharger shall comply with all General Provisions listed in Section III of the Standard Provisions and Reporting Requirements (SPRRs) dated February 2009 which are attached hereto and made part of this Order by reference

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Wastes shall only be discharged into the Mining Unit as described in Findings 32 through 33.

2. The Discharger shall promptly report slope changes such as movement caused by slumping or slipping, or unusual erosion.

3. The Discharger shall not cause a condition of pollution, contamination, or nuisance as defined by Water Code section 13050.

4. Precipitation and drainage controls shall be designed and constructed to accommodate the anticipated volume and precipitation and peak flows from surface runoff for one 10-year, 24-hour storm event as required by Title 27, subsection 22490(h)(1)(C).

5. Wastes shall only be placed in the Mining Unit as described in the Discharger's ROWD and closure and post-closure maintenance plan and in a manner that reduces erosion and controls drainage to prevent the discharge of sediment to surface waters.

6. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Central Valley Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.

Protection from Storm Events

7. For the Mining Unit, and related excavation and grading operations, all precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface run-off for one 10-year, 24-hour precipitation.

8. The Discharger must obtain coverage under the State Water Resources Control Board Order 97-03-DWQ, *General Permit for Discharges of Storm Water Associated with Industrial Activities*. The Discharger shall continue to maintain and comply with Order 97-03-DWQ, and any amendments thereto or any General Orders that may supersede 97-03-DWQ.

9. Annually, prior to the anticipated wet season but no later than **15 October** of each year, any necessary erosion control measured shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage controls shall be completed to prevent flooding, erosion, or slope failure.

Closure and Post-Closure Maintenance Plan

10. The Discharger shall submit any proposed amendments to the closure and post-closure maintenance plan for the Mayflower Mine to the Central Valley Water Board to determine if the amendments are consistent with Title 27, subsections 22510.

11. Subsequent amendments to the closure and post-closure maintenance plan and related financial assurance shall be incorporated herein and made part of this Order by reference provided that any proposed amendments are functionally equivalent to the Closure and Post-Closure Maintenance of Mining Units required by Title 27, sections 22510 and are approved by Central Valley Water Board's Executive Officer.

12. The Facility shall be closed in a manner that will minimize erosion and the threat of water quality degradation.

13. Following closure, the Discharger shall continue to collect surface water samples as described in the Closure and Post-Closure Maintenance section of the ROWD.

14. A Sampling and Analysis Plan (SAP), which describes monitoring procedures for water was included as Appendix E of the Dischargers ROWD. The purpose of the SAP is to document whether the mining and reclamation procedures, as employed by the Discharger, prevent water quality degradation and ensure that there will be no significant increase in the concentration of indicator parameters or waste constituents in waters of the State.

15. The post-closure monitoring and maintenance period shall end[1] when the Central Valley Water Board determines that water quality aspects of closure and post-closure maintenance are complete and the wastes no longer pose a threat to water quality (Title 27, section 22510(h)).

16. The Discharger shall comply with all applicable Standard Closure and Post-Closure Specifications listed in Section XI D and E and all Standard Construction Specifications that are applicable to closure in Section VI of the SPRRs dated February 2013 which are attached hereto and made part of this Order by reference.

[1] The post-closure monitoring and maintenance period typically ends when the Unit has been in compliance with the water quality protection standard for a period of three consecutive years.

C. MONITORING SPECIFICATIONS

1. Neither mining or processing activities at the Facility, the discharge of waste at the Facility, the closure of the Facility, nor post-closure maintenance of the Facility shall cause or allow groundwater or surface water to be degraded.

2. The Discharger shall conduct surface water monitoring in accordance with the Dischargers Sampling and Analysis Plan (ROWD Appendix E, (H&K, 30 October 2012)).

3. The Discharger shall provide Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices.

4. The Discharger shall establish a Water Quality Protection Standard Report within **one year** of the adoption of this Order. The Water Quality Protection Standard Report shall include the information described in Section C.1. **Water Quality Protection Standard and Compliance Period** of the attached Monitoring and Reporting Program R5-2013-0063.

5. The concentrations of the constituents of concern in waters passing the Monitoring Point shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program R5-2013-0063.

6. For each monitoring event, the Discharger shall determine whether the Facility is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program R5-2013-0063.

7. The Discharger shall maintain an approved Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:

    - Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
    - Sample preservation information and shipment procedures;
    - Sample analytical methods and procedures;
    - Sample quality assurance/quality control (QA/QC) procedures; and
    - Chain of Custody control.

D. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with Central Valley Water Board for closure and post-closure maintenance of the Mayflower Mine as described in Findings 34 through 35, 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** (excepting 2013). If the Executive Officer 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 the Central Valley Water Board for at least the amount of the approved cost estimate.

2. The Discharger shall update the closure and post-closure maintenance plan any time there is a change that will increase the amount of the closure and/or post-closure maintenance cost estimate. The updated closure and post-closure maintenance plan shall be submitted to the Central Valley Water Board. The closure and post-closure maintenance plan shall meet the requirements of Title 27, section 22510(f), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan. Reports regarding financial assurance required in D.1 above shall reflect the updated cost estimate.

E. PROVISIONS

1. The Discharger shall comply with Standard Provisions and Reporting Requirements (SPRRs) Mining Wastes dated February 2009. The SPRRs contain important provisions and requirements with which the Discharger must comply.

2. The Discharger must comply with Monitoring and Reporting Requirements Order R5-2013-0063. Compliance includes, but is not limited to, monitoring of waste and surface water throughout the active life of the Mining Unit and post-closure maintenance period.

3. The Discharger shall notify Central Valley Water Board staff **within 24 hours** of any unpermitted discharge, flooding, equipment failure, slope failure, or other change in facility conditions or related precipitation and drainage controls or degradation of waters of the state.

4. The Discharger shall maintain legible records at the Facility of volume and type of waste discharged. The Discharger shall make such records available for review by representatives of the Central Valley Water Board and State Water Resources Control Board.

5. **By 30 November 2013**, the Discharger shall submit for approval of the Executive Officer a Sampling and Analyses plan for on-going characterization of the mine waste rock to determine if the waste rock remains appropriately classified as Group C mining waste. Ongoing characterization of the mining waste shall be at the frequency of one sample for every 500 tons of mining waste discharged or at least one sample every third calendar year.

6. The Discharger shall complete the following tasks by the required dates:

TASK	DATE DUE
Submit on going waste characterization reports to determine if the mining waste is still appropriately classified as a Group C mining waste (see Finding 24). This report shall evaluate whether the potential leachate from the waste rock is below beneficial use criteria.	**By 1 August of each year (Beginning 1 August 2014)**

Submit Water Quality Protection Standard Report per Monitoring Specification C-4.	**By 2 June 2014**
Submit updated cost estimates and financial assurances for closure and post-closure maintenance (Financial Assurance Specification D.1)	**By 1 June of each year**

7. In the event of any change in control or ownership of the Mayflower Mine facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board's Rancho Cordova Office. To assume operation as a Discharger under this Order, the succeeding owner or operator must submit a written request requesting transfer of the Order to the Executive Officer. The request must contain the requesting entity's full legal name, the state of incorporation (if a corporation), the name, address, and telephone number of persons responsible for contact with the Central Valley Water Board, and a statement complying with the signatory paragraph of the Standard Provisions that states the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved by the Executive Officer.

8. For the purposes of resolving any disputes arising from or related to the California Water Code, any regulations promulgated thereunder, these WDRs or any other orders governing the Facility, the Discharger, its parents and subsidiaries, and their respective past, present, and future officers, directors, employees, agents, shareholders, predecessors, successors, assigns, and affiliated entities, consent to jurisdiction of the Courts of the State of California.

9. The Central Valley Water Board will review this Order periodically and revise requirements when necessary.

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 may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, 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.

I, Pamela C. Creedon, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the Central Valley Regional Water Quality Control Board, on 31 May 2013.

Original signed by

PAMELA C. CREEDON, Executive Officer

JSH/VJI

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2013-0063
FOR

MELBOURNE ALLENBAUGH AND STEVE ALLENBAUGH,
AND

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

MAYFLOWER MINE

SIERRA COUNTY

This monitoring and reporting program (MRP) is issued pursuant to Water Code section 13267. This MRP contains requirements for surface water monitoring, facility monitoring, maintenance, and reporting; requires the submittal of periodic updates regarding the financial assurance mechanisms required by Waste Discharge Requirements (WDRs) Order R5-2013-0063; and includes requirements related to the implementation of the Standard Provisions and Reporting Requirements (SPRRs) dated February 2009. 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

Based on Group C classification in Finding 25 of the WDRs, groundwater monitoring is not required by this MRP. Should the waste group classification change, the need for groundwater monitoring should be reassessed.

The Discharger shall comply with provisions for monitoring in accordance with Standard Monitoring Specifications in Section IX of the SPRRs and the Monitoring Specifications in Section C of the WDRs. Surface water quality monitoring shall be conducted in accordance with the Dischargers *Sample Collection and Analysis Plan*, (Holdrege & Kull, 5 October 2012).

Kimberly Creek upstream (KC-U) shall constitute the monitoring point for the Water Quality Protection Standard. All surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as listed in Tables II and III of this MRP.

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 an approved Sampling and Analysis Plan.

The monitoring program of this MRP includes:

Section	Monitoring Program
A.1	Surface Water Monitoring
A.2	Facility Monitoring

1. Surface Water Monitoring

The Discharger shall operate a surface water quality monitoring and response program for any mining unit where runoff from the mining unit flows or could flow to waters of the United States. At the Mayflower Mine, runoff from the mining units flows to detention basins that periodically discharge to Kimberly Creek. Surface water quality monitoring shall be consistent with the Dischargers *Sample Collection and Analysis Plan*, (Holdrege & Kull, 5 October 2012) and as listed in Tables II and III of this MRP.

The surface water quality monitoring points for the Mayflower Mine are:

Mon Pt.	Status
KC-U	Kimberly Creek upstream
KC-D	Kimberly Creek downstream
DP-2	Detention Pond-2 discharge location

For surface water quality monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the frequency specified in Table II and the methods specified in Table III. All surface water monitoring samples shall be collected and analyzed for the 5-year COCs specified in Table III every five years, beginning in 2018.

2. 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.3 of this MRP.

b. Major Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all mining unit 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.4 of this MRP.

c. **Standard Observations**

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

Mining Unit Type	Frequency	Season
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 for the mining units shall include:

1) Signs of erosion along the slopes or perimeter (show affected area on map):

2) 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 annual monitoring report required in Section B.1 of this MRP.

3. Waste Discharge Monitoring

The Discharger shall monitor the quantity of waste discharged to the mining units in accordance with the frequencies specified in Table 1 and report the results as required in Section B.1 of this MRP.

Table 1 - Waste Discharged

Parameters	Units	Frequency
Quantity Discharged	tons or cubic yards	Monthly
Quantity Discharged	tons or cubic yards	Annual

B. REPORTING

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

Reporting Schedule

Section	Report	End of Reporting Period	Due Date
B.1	Annual Monitoring Report	31 December	**1 July**
B.2	Annual Facility Inspection Report	31 October	**15 November**
B.3	Major Storm Event Reporting	Continuous	**7 days from damage discovery**
B.4	Financial Assurances Report	31 December	**1 June**
B.5	Waste Characterization Report		**1 August**

Reporting Requirements

The Discharger shall submit monitoring reports **annually** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order R5-2013-0063 and the Standard Provisions and Reporting Requirements (particularly Section IX: "Provisions for Monitoring" and Section X: "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. 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.

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. **Annual Monitoring Report:** Monitoring reports shall be submitted annually and are due on **1 July**. Each annual monitoring report shall contain at least the following:

   a) 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) Cumulative tabulated monitoring data for all monitoring points and constituents for surface water. 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 Table II unless specific justification is given to report in other units. Refer to the SPRRs Section IX "Provisions for Monitoring" for requirements regarding MDLs and PQLs.

   d) Laboratory statements of results of all analyses evaluating compliance with requirements.

   e) 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 X: Response to a Release for verified exceedances of a concentration limit.

   f) An evaluation of the effectiveness of monitoring and control facilities, and of the run-off/run-on control facilities.

   g) A summary of all Standard Observations for the reporting period required in Section A.2.c of this MRP.

   h) A summary of inspection and revegetation activities of any closed mining units in accordance with the approved final Closure and Post-Closure Maintenance Plan as required by SPRRs Section XI.D. "Closure" and XI.E."Post-Closure."

2. **Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **1 July** covering the reporting period of the previous monitoring year. 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, than 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 necessary for conducting the periodic review and analysis required by Title 27. (Cal. Code Regs., tit. 27, § 20420(h).)

    d) 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.

    e) A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours, and include a projection of the year in which each discrete mining unit will be filled.

    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. **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.2.a of this MRP, above.

4. **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.2.b of this MRP, above.

5. **Financial Assurances Report:** By **1 June** of each year, the Discharger shall submit updated cost estimates and a copy of the financial assurances for closure and post-closure maintenance. Refer to Financial Assurances Specifications D.1 through D.2 of the WDRs.

6. **Waste Characterization Report:** To ensure that Group C Classification remains appropriate, ongoing sampling and characterization of the mining waste in accordance with Water Code section 13260(k) is required. Ongoing characterization of the mining waste shall be at the frequency of one sample for every 500 cubic yards of mining waste discharged or at least one sample every third calendar year (see Finding 26 of the WDRs). Waste characterization reports shall be submitted annually and are due on **1 August**.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

The Discharger shall submit a Water Quality Protection Standard Report **by 2 June 2014**. The Water Quality Protection Standard Report shall include the information described in Sections 1.a through 1.e below.

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 water** that could be affected in the event of a release from a waste management unit or portion of a unit.

b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.

c. 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).

d. 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 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 Table II 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 (Cal. Code Regs, tit. 27, § 20395 and 20420(g).).
The COCs for all mining units at the facility are those listed in Tables II and III for the specified monitored medium. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program.

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 shall be included in the *Water Quality Protection Standard Report* discussed in Section C.1 above.

5. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Section IX “Provisions for Monitoring, B.12.b” of the SPRRs, then:

a. **Immediately** notify the Central Valley Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and.

b. Comply with section **X.A.b** of this document**, Response to a Release**, if any constituent or constituents were verified to be present.

c. Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

6. Point of Compliance

The point of compliance for the Water Quality Protection Standard is Kimberly Creek downstream (KC-D)

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. (Cal. Code Regs., tit. 27, § 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.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

31 May 2013

VJI/JSH

TABLE II

SURFACE WATER DETECTION MONITORING PROGRAM

Parameter	Units	Sampling Frequency[1]	Reporting Frequency
Field Parameters			
pH		twice per year	Annual
Electrical Conductivity	1 µmho/cm	twice per year	Annual
Flow to Waters of U.S.	Yes or No	twice per year	Annual
Monitoring Parameters			
General Minerals			
Total Suspended Solids (TSS)	mg/L	twice per year	Annual
Total Settleable Solids	mg/L	twice per year	Annual
Sulfate (as SO_4), total	mg/L	twice per year	Annual
Metals			
Aluminum, total	ug/L	twice per year	Annual
Antimony, total	ug/L	twice per year	Annual
Arsenic, total	ug/L	twice per year	Annual
Barium, total	ug/L	twice per year	Annual
Iron, total	ug/L	twice per year	Annual
Lead, total	ug/L	twice per year	Annual
Manganese, dissolved	ug/L	twice per year	Annual
Nickel, total	ug/L	twice per year	Annual
Oil and Grease	ug/L	twice per year	Annual
Blasting Agents			
Ammonium (NH_4^+), total	ug/L	twice per year	Annual
Nitrate (NO_3^-), total	ug/L	twice per year	Annual
5-Year Constituents of Concern (see Table III)			

[1] Surface water monitoring is required twice per year when there is water present at the designated surface water monitoring points during the wet season (October 1 to May 30). Reporting shall include whether there was flow from the facility to waters of the U.S. when the samples were collected.

TABLE III

5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

Surface Water (total):	**USEPA Method**
Aluminum	6020
Antimony	6020
Arsenic	6020
Barium	6020
Cadmium	6020
Chromium	6020
Cobalt	6020
Copper	6020
Iron	6020
Lead	6020
Manganese	6020
Mercury	245.7
Nickel	6020
Selenium	7742
Silver	6020
Thallium	6020
Vanadium	6020
Zinc	6020
Oil and Grease	8015
Ammonium (NH_4^+)	350.2
Nitrate (NO_3^-)	300.0/353.3

INFORMATION SHEET

MELBOURNE ALLENBAUGH AND STEVE ALLENBAUGH
U.S. FOREST SERVICE
MAYFLOWER I PLACER MINING CLAIM
SIERRA COUNTY

Melbourne Allenbaugh and Steve Allenbaugh are the Dischargers at the Mayflower Mine in Sierra County. Melbourne Allenbaugh and Steve Allenbaugh are the mine claimants and operators and therefore have primary responsibility for compliance with these waste discharge requirements (WDRs), including day-to-day operations, monitoring, and closure and post-closure maintenance. The United States Department of Agriculture, Forest Service (Forest Service) is the administrator of the public lands where the discharge occurs, and is ultimately responsible for ensuring compliance with these WDRs and therefore is also named as a Discharger. For the purposes of the WDRs, unless otherwise noted, the term “Discharger” refers to Melbourne Allenbaugh and Steve Allenbaugh.

On 5 November 2012, the Discharger submitted a report of waste discharge (ROWD) for the Mayflower I placer mining claim (the Facility). Information in the ROWD has been used to develop these WDRs. The Facility is a mining claim located on public lands owned by the United States Government and administered by the Forest Service. The facility contains an existing underground placer gold mining operation. No prior WDRs have been issued for this facility.

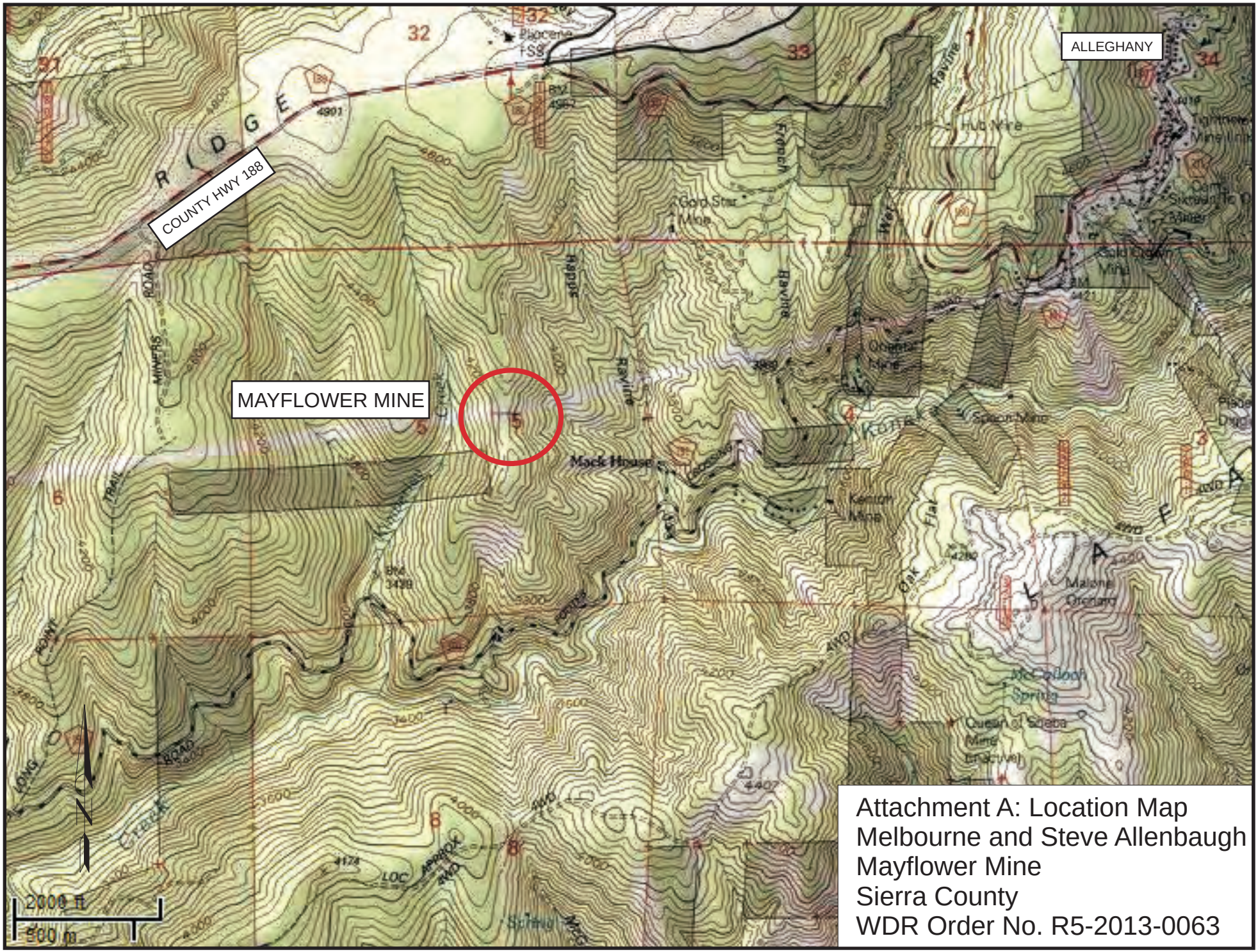
The Facility is located along Kimberly Creek about 1-mile west of the town of Alleghany in Sierra County. The Facility covers 20 acres and the site elevation is approximately 4,200 feet above mean sea level. Forest Service documents indicate that the Facility was operated since at least the early 1980s. The primary commodity being mined is gold. No use of chemicals such as cyanide or mercury is proposed.

All mining is performed underground where the placer gravels are extracted by means of an existing adit that extends several hundred feet under the buried tertiary channel. Ore bearing gravels are drilled and blasted, loaded into mine cars, pushed to the surface, dumped into the ore bin, and processed through a trommel. Waste rock is dumped adjacent to the bin and subsequently transported to the tailings placement area. Processing of the gold bearing material is performed by conventional washing, scrubbing, and gravity separation using water and screening. Gold is removed from the concentrates by physical separation.

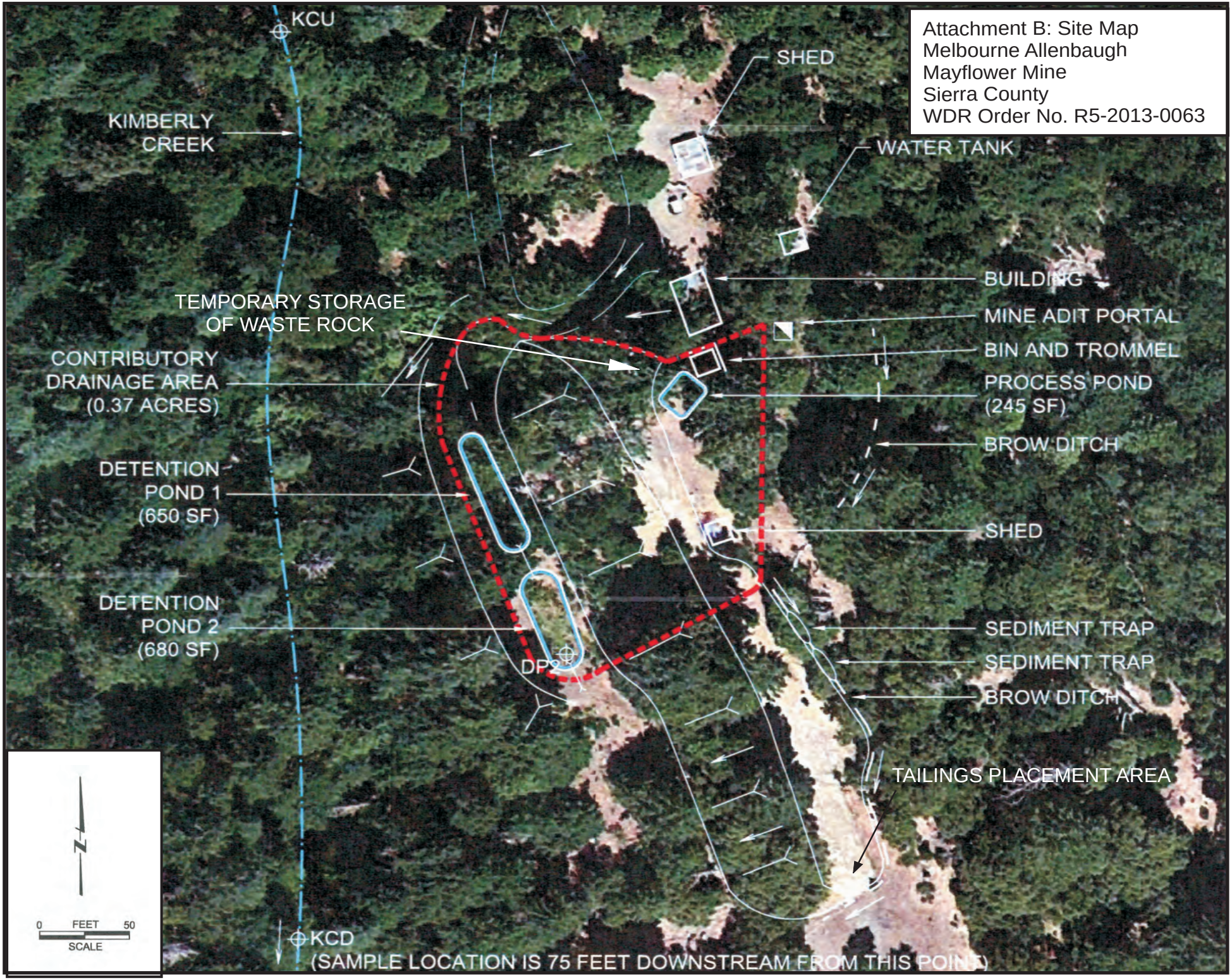
The proposed mining rate is less than 200 tons per year. Process water will be retained in unlined settling ponds. No discharge of process water off-site is proposed. Reclamation will generally be performed concurrently with mining. The mining waste has been classified as Group C as defined by California Code of Regulations, title 27 (“Title 27”), § 22480. Regulations set forth in Title 27 which establishes prescriptive standards for construction of Mining Units and containment are not applicable for Group C mining wastes. Group C mining wastes are wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.

Storm water runoff from the facility is routed to detention basins. Local surface water drainage is to Kimberly Creek which is a tributary to the Middle Fork of the Yuba River.

JSH



Attachment A: Location Map
Melbourne and Steve Allenbaugh
Mayflower Mine
Sierra County
WDR Order No. R5-2013-0063


Attachment B: Site Map
Melbourne Allenbaugh
Mayflower Mine
Sierra County
WDR Order No. R5-2013-0063
KCU
SHED
KIMBERLY CREEK
WATER TANK
BUILDING
TEMPORARY STORAGE OF WASTE ROCK
MINE ADIT PORTAL
BIN AND TROMMEL
CONTRIBUTORY DRAINAGE AREA (0.37 ACRES)
PROCESS POND (245 SF)
BROW DITCH
DETENTION POND 1 (650 SF)
SHED
DETENTION POND 2 (680 SF)
SEDIMENT TRAP
DP2
SEDIMENT TRAP
BROW DITCH
TAILINGS PLACEMENT AREA
N
0 FEET 50
SCALE
KCD
(SAMPLE LOCATION IS 75 FEET DOWNSTREAM FROM THIS POINT)

Partial Table of Contents for
STANDARD PROVISIONS AND REPORTING REQUIREMENTS
MINING WASTES
For Title 27 (27CCR §20005 et seq.)
FEBRUARY 2009

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS FOR WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF MINING WASTES REGULATED BY TITLE 27 (27 CCR §20005 et seq.) MINING FACILITIES

FEBRUARY 2009

I. APPLICABILITY

A. These Standard Provisions and Reporting Requirements are applicable to "mining waste" disposal sites that are regulated pursuant to the provisions of the California Code of Regulations, title 27 section 20005 et seq. (27 CCR or Title 27). The term "Mining waste" is defined in title 27 section 22480.

B. For this document, WMU is defined as a waste management unit containing mining waste.

C. "Order," as used throughout this document, means the Waste Discharge Requirements to which these Standard Provisions and Reporting Requirements are incorporated.

D. 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.

E. 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.

F. 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.

G. Unless otherwise stated, all terms are as defined in California Water Code (CWC) section 13050 and in title 27 section 20164.

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 Central Valley Water 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 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 Central Valley Regional Water Quality Control Board (hereafter Central Valley Water 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 Central Valley Water 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 Central Valley Water 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 Central Valley Water Board [CWC §13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

G. The Discharger shall submit to the Central Valley Water Board for review and approval a closure and post-closure maintenance plan prepared in accordance with Closure and Post-Closure for Mining WMUs [27 CCR §22510].

III. GENERAL PROVISIONS

A. The discharge shall neither cause nor contribute to the contamination, degradation, or **pollution of groundwater** via the release of waste constituents in either liquid or gaseous phase.

B. Wastes shall not be discharged to any surface water body without a Stormwater Permit or a NPDES permit.

C. The discharge shall neither cause nor contribute to any **surface water pollution**, contamination, or nuisance, including, but not limited to:

1. floating, suspended, or deposited macroscopic particulate matter or foam;

2. increases in bottom deposits or aquatic growth;

3. an adverse change in temperature, turbidity, or apparent color beyond natural background levels;

4. the creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin;

5. the introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.

D. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the waste management unit (WMU) if such waste constituents could migrate to waters of the State—in either the liquid or the gaseous phase—and cause **a condition of contamination, pollution, degradation, or nuisance**.

E. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, pollution, degradation, or nuisance to occur, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in the Monitoring and Reporting Program.

F. The Discharger shall take **all reasonable steps to minimize any adverse impact** to the waters of the state resulting from noncompliance with this Order. ("Order," as used throughout this document, means the Waste Discharge Requirements). Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

G. 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 Central Valley Water 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)].

H. The Discharger shall notify the Central Valley Water 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 Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [27 CCR §21710(a)(4)].

I. The Discharger shall maintain legible records of the volume and type of each waste discharged at each WMU or portion of a WMU, and the manner and location of discharge. These records shall be on forms approved by the State Water Resources Control Board or Central Valley Water 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 Central Valley Water 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 Central Valley Water Board. [27 CCR §21720(f)].

J. All WMUs shall be protected from flooding as required in title 27 section 22490(b).

K. Diversion and drainage facilities shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff as follows [27 CCR §22490(h)(1)]:

1. Group A – one 25 year, 24 hour storm;

2. Group B – one 10 year, 24 hour storm; and

3. Group C – one 10 year, 24 hour storm.

L. Precipitation on Group A and B waste piles that is not diverted by containment structures shall be collected and managed through the leachate collection and removal system (LCRS). The Central Valley Water Board can make exemptions to this requirement if the collected fluid does not contain indicator parameters or waste constituents in excess of applicable water quality objectives [27 CCR §22490(h)(2)].

M. Dischargers shall comply with special requirements for surface impoundments given in title 27 section 20375. Nevertheless, for Mining Units, Dischargers shall use the precipitation conditions in title 27 section 22490(h)(1).

IV. FINANCIAL ASSURANCE PROVISIONS

A. The Discharger shall establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified WMU in accordance with an approved closure and post-closure maintenance plan [27 CCR §22510(f)].

B. If a lead agency acting under the authority of §2774(a) of the Public Resources code requires assurances of financial responsibility, these assurances can be used to fulfill all comparable requirements provided that:

1. the Central Valley Water Board approves the assurance; and

2. the Central Valley Water Board is named as alternate payee. [27 CCR §22510(g)]

V. 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 WMU and whether or not the wastes are required to be managed as a Group A, Group B or Group C mining waste [27 CCR §22480]

B. Group B and Group C WMUs contained with liners 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), §20330(a), and §22490(f)(6)], including the capillary fringe.

C. The Discharger shall submit operations plans and any amended operation plans describing those WMU 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 Central Valley Water Board, local governments, and water users downgradient of the WMU(s); and

3. A description of inspection and maintenance programs which will be undertaken regularly during disposal operations and the post-closure maintenance period.

VI. FACILITY SPECIFICATIONS

A. Surface and subsurface drainage from outside of a WMU shall be diverted from the WMU [27 CCR §20365(e)].

B. 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)].

C. The Discharger shall promptly notify the Central Valley Water Board of any slope failure occurring at a WMU. Any failure which threatens the integrity of containment features or the WMU shall be promptly corrected in accordance with an approved method [27 CCR §21710(c)(2)].

VII. CONSTRUCTION SPECIFICATIONS

A. All containment structures shall be designed by a California registered civil engineer, and construction shall be supervised and certified by a California registered civil engineer or a certified engineering geologist as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge. WMUs shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the WMU commences [27 CCR §22490(d)].

B. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a WMU's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist, as appropriate [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 §22490(e) and §20320(a)].

D. WMU liners shall be designed and constructed to contain the fluid, including gas, waste, and leachate [27 CCR §20330(a)].

E. 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)].

F. 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)].

G. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled closure of the WMU 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)].

H. Leachate collection and removal systems shall be designed and constructed to ensure that there is no buildup of hydraulic head on the liner. The depth of fluid in the collection sump shall be kept at the minimum needed to ensure efficient pump operation [27 CCR §20340(c)].

I. For Units constructed (or reconstructed) after July 18, 1997, 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.

VIII. REPORTING REQUIREMENTS

A. General Requirements

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall **notify the Central Valley Water Board by telephone** as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time and cause of **noncompliance**, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

2. The Discharger shall **immediately notify the Central Valley Water Board** of any **evidence of a release**, or of any flooding, equipment failure, slope failure, or other **change in site**

conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

3. The Discharger shall **mail a copy of each** monitoring **report** and any other reports required by this Order to the appropriate office or the current address if an office relocates. Addresses for each office as of November 2008 are:

California Regional Water Quality Control Board
Central Valley Region
11029 Sun Center Drive #200
Rancho Cordova, CA 95670

California Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, CA 93706-2007

California Regional Water Quality Control Board
Central Valley Region
415 Knollcrest Drive, Suite 100
Redding, CA 96002

4. 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 for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Central Valley Water Board Executive Officer.

Such records shall show the following for each sample:

a. Identity of sample and of 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 method detection limit (MDL) and practical quantitation limit (PQL) for each analysis.

Such records shall also include legible records of the volume and type of each waste discharged at each WMU and the manner and location of discharge. These waste discharge records shall be maintained at the facility until the beginning of the post-closure maintenance period, at which time copies of these records shall be sent to the Central Valley Water Board.

5. **All reports and transmittal letters shall be signed** by persons identified below:

a. *For a corporation:* by a principal executive officer of at least the level of senior vice-president.
b. *For a partnership or sole proprietorship:* by a general partner or the proprietor.
c. *For a municipality, state, federal or other public agency:* by either a principal executive officer or ranking elected or appointed official.
d. A duly authorized representative of a person designated in a, b or c above if;
    i. the authorization is made in writing by a person described in a, b, or c of this provision;
    ii. the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a WMU, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
    iii. the written authorization is submitted to the Central Valley Water Board.

Any person signing a document under this Section shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for

obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

6. In reporting the monitoring data, 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 lack thereof.

7. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Central Valley Water Board.

B. **Reports to be Filed with the Central Valley Water Board**

1. A transmittal **letter** explaining the essential points in each report shall accompany each report. Such a letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting the violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal.

2. Each monitoring report (e.g., Detection Monitoring Report, Constituents of Concern 5-Year Report) shall include a **compliance evaluation summary**. The summary shall contain at least:

   a. For each monitored ground water body, a description and graphical presentation of the gradient and direction of **ground water flow** under/around the WMU, based upon water level elevations taken during the collection of the water quality data submitted in the report.

   b. For each monitoring well addressed by the report, a description of the method and time of water level measurement, the type of pump used for **purging** and the placement of the pump in the well, and the method of purging (pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of pH,

temperature, conductivity, and turbidity testing, well recovery time, and method of purge water disposal).

c. For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump (or other device) used and its placement for **sampling**, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations).

d. A **map or aerial photograph** showing the locations of observation stations, Monitoring Points, and Background Monitoring Points.

e. **Laboratory** statements of results of all analyses evaluating compliance with requirements.

f. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.

g. A summary and certification of completion of all Standard Observations for the WMU, for the perimeter of the WMU, and for the receiving waters. The terms 'Standard Observations' and 'receiving waters' as used in this document are defined below in section **XII. Definitions**.

h. The quantity and types of wastes discharged and the locations in the WMU where waste has been placed since submittal of the last such report.

3. The Discharger shall report by telephone concerning 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. description of the nature of the discharge (e.g., all pertinent observations and analyses); and

d. corrective measures underway or proposed, and corresponding time schedule.

See **RESPONSE TO A RELEASE** below.

4. The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board summarizing the monitoring results from the previous year. This report shall contain:

a. For each Monitoring Point and Background Monitoring Point, submit in **graphical format** the laboratory analytical data for all samples taken within at least the previous five calendar years. 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. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month Reporting Periods, presented in tabular form as well as on computer disk, either in EXCEL format or in another file format acceptable to Central Valley Water Board staff. Data may be submitted in commonly available compressed format. The Central Valley Water Board regards the submittal of data in hard copy and electronic format as "...the form necessary for..." statistical analysis (27 CCR §20420(h)), in that this facilitates periodic review by the Central Valley Water Board's statistical consultant.

c. 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.

d. A **map** showing the area and elevations in which filling has been completed during the previous calendar year.

e. A **written** summary of the monitoring results, indicating any changes made or observed since the previous annual report.

f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

IX. PROVISIONS FOR MONITORING

A. General

1. The Discharger shall maintain a **written sampling and analysis plan** sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the Discharger shall be familiar with the sampling and analysis plan.

2. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and regularly **calibrated** to ensure their continued accuracy.

3. The Discharger shall construct or abandon all **monitoring wells** to meet or exceed the standards stated in the State Department of Water Resources Bulletin 74-81 and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.

4. All sample analyses shall be conducted at a **laboratory accredited** for such analyses by the State Department of Health Services. The **Quality Assurance-Quality Control Program** must conform to EPA guidelines (e.g., "Laboratory Documentation Requirements for Data Validation," January 1990, USEPA Region 9) or to procedures approved by the Central Valley Water Board.

5. The director **of the laboratory** whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Central Valley Water Board.

6. Unless samples are from water supply wells or unless otherwise specified by Central Valley Water Board staff, all ground water samples to be analyzed for **metals** shall be field-filtered.

Filtration methods shall minimize the entrainment of air into the sample (by using, for example, in-line pressure filtration).

B. **Sampling and Analytical Methods**

1. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span not to exceed 30 days, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

2. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.

3. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

4. **“Trace” results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied by both the estimated MDL and PQL values for that analytical run.

5. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than

simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

6. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a** 99**% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

7. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.

8. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

9. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to §20415(e)(7) of Title 27 that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are

available to the facility. The Discharger's technical report, pursuant to §20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

10. Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.

11. The Discharger may propose an alternate statistical method [to the methods listed under title 27 section 20415(e)(8)(A-D)] in accordance with title 27 section 20415(e)(8)(E), for review and approval by the Executive Officer. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.

12. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

    a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary

indication of a release or a change in the nature or extent of the release, at that monitoring point, if ***either:***

i. The data contains two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or

ii. The data contains one or more analyte that equals or exceeds its PQL.

b. **Discrete Retest** [27 CCR §20415(e)(8)(E)]:

i. In the event that the Discharger concludes (pursuant to paragraph 12.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.

ii. For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:

a. **Immediately** notify the Central Valley Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and

b. Comply with section **IX.B.**14 of this document**, Sampling and Analytical Methods**, if any constituent or constituents were verified to be present.

iii. Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list

such that it is monitored during each regular monitoring event.

13. If the Executive Officer determines, after reviewing the submitted report in 12.b. above, that the detected constituent most likely originated from the WMU(s), the Discharger shall **immediately** implement the requirements of section **X.C., Release Has Been Verified,** of this document.

14. If the Discharger determines that there is measurably significant evidence of a release from the WMU at any monitoring point, the Discharger shall **immediately** implement the requirements of section **X.C., Release Has Been Verified**, of this document.

X. RESPONSE TO A RELEASE

A. Monitoring Point Evidence of a Release

If the Discharger determines that there is "measurably significant" evidence of a release from the WMU (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 Central Valley Water 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 WMU [27 CCR §20420(j)(1)];

b. **Retest Optional** — can immediately initiate the verification (retest) procedure pre-approved by the Central Valley Water Board [pursuant to §20415(e)(8)(E) of Title 27] to verify that there is "measurably significant" evidence of a release from the WMU 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**

If the Discharger determines there is significant **physical** evidence of a release, the Discharger shall notify the Central Valley Water 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(l)(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 WMU 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 Central Valley Water 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 WMU at any monitoring point, the Discharger may demonstrate that a source other than the WMU

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 WMU 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 Central Valley Water 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 Central Valley Water Board **within 90 days** of determining "measurably significant" evidence of a release demonstrating that a source other than the WMU 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 to assess the nature and extent of the release from the WMU and to design a corrective action program meeting the requirements of §20430 of Title 27. At a minimum, an evaluation monitoring program for a WMU shall include:

   a. An assessment of the nature and extent of the release from the WMU. This assessment shall include a determination of the distribution and concentration of each constituent of concern throughout the zone affected by the release. The Discharger shall submit this assessment to the Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(b)].

   b. 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 Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(c)].

c. 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 Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(d)].

D. Release Beyond Facility Boundary

1. Any time the Discharger concludes that a release from the WMU has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

2. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.

3. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

4. Each time the Discharger sends a notification to Affected Persons, the Discharger shall provide the Central Valley Water Board, within seven days of sending such notification, with both a copy of the notification and a current mailing list of Affected Persons.

XI. STANDARD CONDITIONS

A. Supervision and Certification

1. All WMUs shall be **designed and constructed** under the direct supervision of a California registered civil engineer or a certified engineering geologist, as appropriate, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, and performance goals of Title 27 prior to waste discharge.

2. Designs of WMUs shall include a **Construction Quality Assurance Plan**, which shall:

a. be submitted for review and approval by the Central Valley Water Board prior to construction;

b. demonstrate that the WMU has been constructed according to the specifications and plans as approved by the Central Valley Water Board; and

c. provide quality control on the materials and construction practices used to construct the WMU and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.

3. **Closure** of each WMU shall be performed under the direct supervision of a California registered civil engineer or California certified engineering geologist.

B. **Operations**

1. The Discharger shall maintain in **good working order** and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

2. For any **electrically** operated equipment at the site, the **failure** of which could cause loss of control or containment of waste materials, or violation of this Order, the Discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.

3. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.

4. The discharge shall remain within the designated disposal area at all times.

5. By the effective date of waste discharge requirements, the Discharger shall have a plan for preventing and controlling **accidental discharges**, and for minimizing the effect of such events. This plan shall:

a. Identify the possible sources of accidental loss or leakage of wastes from each waste storage, treatment, or disposal unit.

b. Evaluate the effectiveness of present WMUs and operational procedures, and identify needed changes or contingency plans.

c. Predict the effectiveness of the proposed changes in waste management facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

The Central Valley Water Board, after review of the plan, may establish conditions that it deems necessary to control leakage and minimize its effects.

6. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overfilling.

7. Surface impoundments shall be designed, constructed and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and by wave action at the waterline.

8. Leachate removed from a surface impoundment LCRS shall be discharged to the impoundment from which it originated.

9. Solids which accumulate in a surface impoundment shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for the surface impoundment leachate and for the discharge of wastes. Prior to removal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Article 2, Subchapter 2 of Title 27. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids shall be submitted to the Central Valley Water Board for review. The solids will be discharged to an appropriate WMU based on characterization.

10. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control.

C. **Siting**

1. New WMUs for Group A and B wastes shall not be located on Holocene faults. Units for Group C wastes may be located on Holocene faults if displacement will not allow escape of wastes or cause irreparable damage to containment structures [27 CCR §22490(a)(1)].

2. New WMUs shall be outside areas of rapid geologic change. Exemptions may be allowed by the RWQCB if containment structures are designed and constructed to preclude failure [27 CCR §22490(a)(2)].

3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes, and shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

D. **Closure**

1. New and existing WMUs shall be closed so that they no longer pose a threat to water quality. No post closure land uses shall be permitted that might impair the integrity of containment structures [27 CCR §22510(a)].

2. WMUs shall be closed according to an approved closure and post closure maintenance plan which provides for continued compliance with applicable standards for waste containment, precipitation and drainage controls and monitoring throughout closure and the post closure maintenance period [27 CCR §22510(b)].

3. Closed WMUs shall be provided with at least two **permanent monuments**, installed by a licensed land surveyor or by a registered civil engineer authorized to perform land surveying, 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)].

4. Final cover slopes for Group A and Group B waste piles shall not be steeper than a horizontal to vertical ratio of one and three quarters to one, and shall have minimum of one fifteen-foot wide bench for every fifty feet of vertical height [27 CCR §21090(a)].

E. **Post-Closure**

1. WMUs shall be closed so that they no longer pose a threat to water quality. No post closure land uses shall be permitted that might impair the integrity of containment structures [27 CCR §22510(a)].

2. The post-closure maintenance period shall end when the Central Valley Water Board determines that water quality aspects of reclamation are complete and waste no longer poses a threat to water quality [27 CCR §22510(h)].

3. The owner of the mine shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the WMUs and during subsequent use of the property for other purposes.

XII. DEFINITIONS

Unless otherwise stated, all terms are as defined in Chapter 2, Division 7, of the California Water Code (Section 13050 et.seq.), in Article 2, Chapter 2, Division 2, Title 27 of the California Code of Regulations (27 CCR §20005 et seq.), and in Section 258.2, and elsewhere in Part 258, Title 40 of the Code of Federal Regulations.

The following additional definitions apply to the Order:

A. "**Affected Persons**" means all individuals who either own or occupy land outside the boundaries of the parcel upon which the WMU is located that has been or may be affected by the **release** of leachate or waste constituents (in gas or liquid phase) from a WMU.

B. "**Background Monitoring Point**" means a device (e.g., well) or location (e.g., a specific point along a lakeshore), upgradient or sidegradient from the WMU, or as otherwise approved by the Executive Officer, where water quality samples are taken that are not affected by any release from the WMU and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.

C. "**Composite liner**" means a liner that consists of two or more components, which include a Synthetic Liner in direct and uniform contact with an underlying layer of prepared, low-permeability soil such that the net permeability of the resulting combination is significantly less

than would be expected by reference to the permeability of the individual components layers.

D. Unless otherwise specified, "**composite sample**" means a combination of individual samples either collected over a specified sampling period or collected over an area at one time (synoptically):

1. at equal time intervals,

2. at varying time intervals so that each sample represents an equal portion of the media to be sampled.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results. **"Constituents of Concern (COC)**" means those constituents which are likely to be in the waste in the WMU or which are likely to be derived from waste constituents in the event of a release.

E. "**Daily maximum concentration**" means the highest measurement made on any single discrete sample or composite sample.

F. "**Grab sample**" means a discrete sample collected in less than 15 minutes.

G. "**Matrix effect**" means any change in the method detection limit or practical quantitation limit for a given analyte as a result of the presence of other constituents - either of natural origin or introduced **by** humans as a result of a release or spill - that are present in the sample of water or soil-pore gas being analyzed.

H. "**Method detection limit** (**MDL**)" means the lowest constituent concentration associated with a 99% reliability of a "non-zero" analytical result. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory. MDLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs are expected to closely agree with published USEPA MDLs. If the lab suspects that, due to matrix or other effects, the detection limit for a particular analytical run differs significantly from the laboratory-derived MDL, the results should be flagged accordingly, along with an estimate of the detection limit achieved.

I. "**Monitoring Parameters**" means the short list of constituents and parameters used for the majority of monitoring activity at a given WMU. Monitoring for the short list of Monitoring Parameters constitutes

"indirect monitoring," in that the results are used to indicate indirectly the success or failure of adequate containment for the longer list of Constituents of Concern.

J. "**Monitored Media**" means those water-, solid-, or gas-bearing media that are monitored pursuant to the Monitoring and Reporting Program. The Monitored Media may include:

1. Ground water in the uppermost aquifer, in any other portion of the zone of saturation in which it would be reasonable to anticipate that waste constituents migrating from the WMU could be detected, and in any perched zones underlying the WMU,

2. Any bodies of surface water that could be measurably affected by a release,

3. Soil pore liquid beneath and/or adjacent to the WMU, and

4. Soil pore gas beneath and/or adjacent to the WMU.

K. "**Monitoring Point**" means a device (e.g., well) or location (e.g., a specific point along a lakeshore), downgradient from the WMU and that is assigned in this Order, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.

L. "**Monthly** average **concentration**" means the arithmetic mean of measurements made during the month.

M. "**Monthly average discharge**" means the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging (e.g. gallons per day, cubic feet per day).

Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges divided by the number of days during the month when the measurements were made.

N. "**Order**," as used throughout this document, means the Waste Discharge Requirements. The Monitoring and Reporting Program and Standard Provisions and Reporting Requirements are incorporated by reference into the Waste Discharge Requirements.

O. "**Practical quantitation limit** (**PQL**)" means the lowest constituent concentration at which a numerical concentration can be assigned with

reasonable certainty that its value represents the constituent's actual concentration in the sample. Normally PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from U.S. EPA analytical method manuals. In relatively interference-free water, laboratory-derived PQLs are expected to closely agree with published U. S. EPA PQLs. If the lab suspects that, due to matrix or other effects, the quantitation limit for a particular analytical run differs significantly from the laboratory-derived PQL, the results should be flagged accordingly, along with an estimate of the quantitation limit achieved.

P. "**Reporting Period**" means the time interval during which samples are collected and analyzed, and the results then reported to the Central Valley Water Board, to comply with a specified monitoring and reporting frequency. The maximum reporting period for analysis of all Constituents of Concern is five years; for Monitoring Parameters it is six months (generally, Spring/Summer = April 1 to September 30, and Fall/Winter = October 1 to March 31). The Reporting Period for the Annual Summary Report extends from April 1 of the previous year to March 31 of the current year. The due date for the submittal of any given report will be 15 days after the end of its Reporting Period, unless otherwise stated.

Q. "**Receiving Waters**" refers to any surface or ground water which actually or potentially receives waste constituents, leachate, or surface or ground waters which come in contact with waste materials or contaminated soils.

R. "**Sample size**":

1. For Monitoring Points, means the number of data points obtained from a given Monitoring Point during a given Reporting Period used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period; or

2. For Background Monitoring Points, means the number of new and existing data points collected under §20415(e)(11 and 12) from all applicable Background Monitoring Points in a given monitored medium—used to collectively represent the background concentration and variability of a given analyte in carrying out statistical or non-statistical analysis of that analyte during a given Reporting Period.

S. "**Standard Observations**" means:

1. For Receiving Waters:

   a. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;

   b. Discoloration and turbidity: description of color, source, and size of affected area;

   c. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;

   d. Evidence of water uses: presence of water-associated wildlife;

   e. Flow rate; and

   f. Weather conditions: wind direction and estimated velocity, total precipitation during recent days and on the day of observation;

2. Along the perimeter of the WMU:

   a. Evidence of liquid leaving or entering the WMU, estimated size of affected area, and flow rate (show affected area on map);
   b. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
   c. Evidence of erosion and/or of daylighted refuse.

3. For the WMU:

   a. Evidence of ponded water at any point on the waste management facility (show affected area on map);
   b. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;

   c. Evidence of erosion and/or of daylighted refuse; and

T. "**Standard Analysis and Measurements**" means:

1. Turbidity, in NTU;

2. Water elevation to the nearest 1/100th foot above mean sea level; and

3. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.

U. "**Synthetic Liner**" means a layer of flexible, man-made material that is installed in accordance with the standard of the industry over an area of land prior to the discharge of waste there.

V. "**VOC_{water}**" (Volatile Organics Monitoring Parameter for Water) means the composite monitoring parameter encompassing all VOCs that are detectable in less than ten percent of applicable background samples from a monitored water-bearing medium (e.g., the unsaturated zone, the uppermost aquifer, a zone of perched groundwater, or a surface water body). This parameter is analyzed via the non-statistical analytical method described elsewhere in this Order to identify a release to waters of the state of VOCs whose presence in background water is detected too infrequently to allow statistical analysis.

W. "**VOC_{spg}**" (Volatile Organics Monitoring Parameter for Soil Pore Gas) means Monitoring Parameters addressing all volatile organic constituents detectable in a sample of soil pore gas.

X. "**Volatile** organic **constituents** (**VOCs**)" means the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.