

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

**ORDER WQO 2004-0007**

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In the Matter of the Petition of

**MERIDIAN BEARTRACK COMPANY, MERIDIAN  
GOLD COMPANY, AND FELIX MINING COMPANY**

For Review of Cease And Desist Order No. R5-2003-0055

For Royal Mountain King Mine

Issued by the

California Regional Water Quality Control Board,  
Central Valley Region

***SWRCB/OCC FILE A-1569***

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BY THE BOARD:

**I. INTRODUCTION**

On April 25, 2003, the Central Valley Regional Water Quality Control Board (“Regional Board”) adopted Revised Cease and Desist Order No. 5-2003-0055 (“Revised CDO”). The Revised CDO directs Meridian Gold Company, Meridian Beartrack Company, and Felix Mining Company (referred to herein as “Petitioners” or “Dischargers”) to perform several specified actions in order to comply with the revised waste discharge requirements (“WDRs”) that were established for closure of the Royal Mountain King Mine (“RMKM”) in Calaveras County on March 15, 2001. (Closure WDR Order No. 5-01-040.)

On May 22, 2003, Petitioners filed a petition (“Petition”) for review of the Revised CDO with the State Water Resources Control Board (“State Board”). The petition alleges that:

1. The Regional Board erred in declining to approve revisions to the mine closure WDRs as requested by the Petitioners;
2. The Regional Board erred in adopting the Revised CDO because the evidence fails to show that the difference in water quality at measuring points downgradient of RMKM

facilities are the result of discharges from mine facilities and not the result of upwelling poor quality groundwater;

3. The overburden disposal sites and the liquid in the Flotation Tailings Reservoir at the RMKM site should be reclassified as Group C mining waste. (See Cal. Code Regs., tit. 27, § 22480 et seq.);

4. There is no evidence in the record to support the Regional Board's finding that there is a substantial risk of overtopping the dam at the wastewater holding pond known as the Skyrocket Pit;

5. The Regional Board failed to properly consider policies and remedial measures for closure of the RMKM site that are outside the requirements of the California Code of Regulations, title 27; and

6. Meridian Gold Company is improperly identified as a discharger in the Revised CDO because the record does not contain substantial evidence that Meridian Gold Company owned or operated the RMKM.

Petitioners' contentions are addressed in Section III below.

The Petition raises many of the issues that were originally raised in an earlier petition to the State Board (Petition A-1369). The State Board distributed a proposed order dated April 18, 2002, in response to Petition A-1369, but deferred action in order to provide Petitioners and the Regional Board an opportunity to resolve the issues in dispute following consideration of additional information that was being developed in studies by Petitioners' consultant.<sup>1</sup> Efforts to resolve the disputed issues through negotiation and consideration of the additional information were not successful, and the Regional Board eventually adopted the Revised CDO that is at issue in this Petition.<sup>2</sup> Although this Petition asked for a stay of the Revised CDO, Petitioners and the

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<sup>1</sup> On May 16, 2002, the State Board adopted Order No. WQO 2002-0009 which stated that the State Board would review Cease and Desist Order No. 5-01-041 on its own motion because it did not anticipate acting upon Petition A-1369 within the time allowed for acting on that petition. The Revised CDO adopted by the Regional Board on April 25, 2003, replaced Cease and Desist Order No. 5-01-041. Therefore, no State Board action is required with respect to that earlier order. The administrative record before the State Board in considering this Petition includes the record compiled for review of Petition A-1369, as well as the subsequent record that led to adoption of the Revised CDO and the record filed with the State Board concerning this Petition.

<sup>2</sup> In addition to Petitions A-1369 and A-1569, Petitioners filed a third petition, which requested review of a water quality monitoring and reporting order adopted by the Regional Board. (Petition A-1469.) That petition was held in *[footnote continued next page]*

Regional Board entered into a stipulation to stay disputed requirements pending State Board action on the Petition.

Based on review of the evidence in the record, this order concludes that background water quality conditions in the area of the RMKM were variable, but generally poor. This order also concludes that the requirements in the Revised CDO are not reasonable in view of background water quality conditions in the area, the high cost of compliance with the Revised CDO and the existing mine closure WDRs, the probability that compliance with the Revised CDO and mine closure WDRs would not significantly improve water quality, and the existence of more cost-effective remedies which would provide a higher degree of water quality protection than what is required by the Regional Board. This order vacates the Revised CDO and directs Petitioners to work with the Regional Board to design and implement an alternate approach to addressing the remaining water quality problems associated with RMKM. Although this order directs the Regional Board and Petitioners to pursue a revised approach to mine closure, the order also concludes that the Regional Board correctly determined that each of the individual petitioners, including Meridian Gold Company, is responsible for compliance with applicable requirements for protection of water quality in the RMKM area. This order remands the matter to the Regional Board for further action consistent with the findings herein.<sup>3</sup>

## **II. BACKGROUND**

### **A. Description of Watershed and Water Quality**

The RMKM is located west of Highway 4 and south of Rock Creek Road near Copperopolis in Calaveras County. The main streams draining the site are Littlejohns, Underwood, Clover, and Gold Knoll creeks. The streams flow to Flowers Reservoir from which water is released to Littlejohns Creek, which is tributary to French Camp Slough, which is tributary to the San Joaquin River.<sup>4</sup>

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abeyance at Petitioners' request during their negotiations with the Regional Board. The monitoring order that was the subject of the Petition has since been vacated so no action by the State Board is required on Petition A-1469.

<sup>3</sup> The major issues regarding the petition are addressed in this order. The Petition and the Regional Board response also raise a number of non-substantial issues and other issues that need not be addressed in the context of the present order. (See *People v. Barry* (1987) 194 Cal.App.3d 158 [239 Cal. Rptr. 349]; Cal. Code Regs., tit. 23, § 2052.)

<sup>4</sup> The beneficial uses listed in the Basin Water Quality Control Plan for the San Joaquin River and its tributaries are municipal, domestic, agriculture, industrial processing, contact and non-contact recreation, warm freshwater habitat, [footnote continued next page]

Groundwater concentrations of total dissolved solids (“TDS”) and other inorganic constituents above water quality objectives at many locations in the RMKM area are the result of salt-bearing geologic formations and are likely to have existed in groundwater prior to mining in the area.<sup>5</sup> For example, on July 24, 1988, before initiation of RMKM activities, groundwater from the Caranza (domestic) well contained 3,310 milligrams per liter (mg/l) of chloride, 2,800 mg/l of sulfate, and 10,400 mg/l of TDS. The Caranza well is located off the RMKM site, approximately 4,000 feet south of the Skyrocket Pit, within the Salt Spring Slate phyllite formation, but well beyond any historic mining impacts. Geographical names such as Salt Creek and Salt Spring Valley for locations upgradient and northwest of RMKM are also indicators of the naturally-occurring, highly mineralized surface and groundwater in the area of the Salt Spring Slate formation.

Based on their review of the record in this matter, staff from the State Board Division of Water Quality prepared a technical report that addresses issues relevant to resolution of the Petition.<sup>6</sup> The subject of background water quality conditions in the RMKM area is addressed in more detail in the technical report.<sup>7</sup> Although discharges from RMKM facilities have negatively affected groundwater at some locations, groundwater quality was highly variable and often poor under natural conditions. The technical report cites evidence that TDS in some mineralized zones near the RMKM site exceeded 3,000 mg/l prior to RMKM activities. The report also discusses evidence that, even in areas of good quality groundwater upgradient of mine operations, water quality has quickly deteriorated when water with elevated TDS levels is drawn into a well under pumping conditions. (e.g. GWM-01, as shown on Figure 3 of the technical

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warm and cold water fish migration, warm water spawning, and wildlife habitat. The beneficial uses listed for ground water are domestic, municipal, agricultural and industrial supply.

<sup>5</sup> The Pine Log vein of lode gold in the RMKM area is associated with the Salt Spring Slate phyllite formation that contains soluble minerals in contact with surface water and groundwater. The presence of minerals and the very slow movement of water through the formation result in high TDS concentrations. Soluble minerals from the phyllite have caused large areas of groundwater in Calaveras County to exceed water quality standards for TDS.

<sup>6</sup> “Technical Report: The Royal Mountain King Mine, SWRCB/OCC File No. A-1569,” prepared by the State Water Resources Control Board Division of Water Quality, Land Disposal Unit, March 2004.

<sup>7</sup> All parties agree that data limitations make it difficult to determine background water quality conditions at many locations prior to Petitioners’ mining activities.

report.) Limited amounts of better quality groundwater at some locations may be due to direct infiltration of precipitation during the wet season.

There is also evidence of poor quality groundwater under artesian pressure conditions that can emerge at the surface as a spring or by excavation for a well. Examples of poor quality groundwater under artesian conditions are several salty springs, the Caranza well, Well GK1, and what appeared to be several submerged springs that were observed when the Skyrocket Pit was de-watered. Seasonal fluctuations of several thousand milligrams per liter of TDS at some sites reflect the effect of seasonal precipitation on groundwater quality at some locations. As in the case of groundwater, TDS concentrations in surface water in the RMKM area are highly variable.

### **B. Regulation of Royal Mountain King Mine by the Regional Board**

Gold mining near RMKM began in the late 1800s. Meridian Gold Company's predecessor in interest, Meridian Minerals Company, began large-scale surface gold mining operations at RMKM in February 1989, subject to the requirements of WDR Order No. 88-176 issued by the Regional Board. Gold mining at the facility ceased in 1994. Operations at RMKM have continued to be governed by a series of WDRs governing discharges to groundwater and surface water resulting from mining operations and mine closure activities. Prior to adoption of the revised WDRs and the cease and desist order issued on March 15, 2001, RMKM was subject to regulation under Closure WDR Order No. 97-165.

The record shows extensive correspondence between Regional Board staff and the staff and consultants of Meridian Gold Company from May 1990 through December 1999.<sup>8</sup> Beginning in January 2000, Meridian Beartrack Company assumed the lead role in communicating with the Regional Board on behalf of the Petitioners with regard to closure activities at RMKM.

Petitioners have undertaken substantial work to complete closure at various RMKM facilities pursuant to the requirements of their previous WDRs. A Regional Board staff report dated March 15, 2001, indicates that three overburden disposal sites have been graded to

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<sup>8</sup> Meridian Gold Company filed a report of waste discharge with the Regional Board on May 18, 1990. Prior to the involvement of Meridian Gold Company in the operation of RMKM, Meridian Minerals Company was issued WDRs for the mine in Regional Board Order No. 88-176. Meridian Minerals Company assigned its interest in the permits and orders concerning RMKM to Meridian Gold Company on April 24, 1990.

natural appearing slopes, covered with topsoil, and re-vegetated.<sup>9</sup> The reclaimed mine site will be suitable for wildlife habitat, range, and other uses. The primary water quality problems now in dispute concern elevated levels of TDS and other constituents in surface and groundwater discharges from the RMKM overburden disposal sites and possible surface water discharges from the Skyrocket Pit.<sup>10</sup> Until issuance of revised WDRs in 2001, the material in the overburden disposal sites was conditionally classified as Group C mining waste because it is non-acid generating.

WDR Order No. 5-01-040 established revised closure requirements for various facilities at the RMKM site. The order requires the Dischargers to demonstrate how wastewater pumped to Skyrocket Pit can be managed to avoid impacts to surface water. Based on the Regional Board's determination that discharges from the overburden disposal sites exceed applicable water quality objectives and could cause degradation of waters of the state, WDR Order No. 5-01-040 reclassified the waste at three overburden disposal sites from Group C to Group B mining waste. The effect of reclassifying the waste as Group B waste was to require the Dischargers to comply with significantly more stringent mine closure requirements under California Code of Regulations, title 27. WDR Order No. 5-01-040 also requires the Dischargers to provide annual updates to a financial assurances plan for initiating and completing all required corrective actions and to provide a demonstration of financial responsibility for initiating and completing all reasonably foreseeable corrective actions and maintenance activities. The order prohibits the discharge of waste to groundwater or surface water that would cause water quality degradation by allowing a statistically significant increase over background or baseline conditions.

Although Petitioners did not petition for State Board review of WDR Order No. 5-01-040 at the time the order was adopted, they later requested that the Regional Board revise the mine closure requirements established in that order. Following a hearing on April 25, 2003, the Regional Board declined to adopt Petitioners' request to adopt revised mine closure

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<sup>9</sup> Grading and reclamation of the three overburden disposal sites began during the period when the mine was still in operation. In 1998, the surface of two of the overburden disposal sites was graded and Petitioners report that selected areas were covered with a minimum cover of four inches of "clayey" topsoil followed by re-vegetation.

<sup>10</sup> Skyrocket Pit is an open pit that fills with groundwater and is now used as a holding pond for wastewater transferred from other areas of the RMKM site.

WDRs and adopted the Revised CDO. The Revised CDO establishes a schedule for Petitioners to undertake specified actions designed to achieve compliance with the WDRs established in Order No 5-01-040. The Revised CDO also confirms the Regional Board's previous determination that the material in the overburden disposal sites and liquid in the Flotation Tailings Reservoir at the RMKM site are properly classified as Group B mining wastes because they consist of or contain non-hazardous soluble pollutants in concentrations that exceed water quality objectives or that could cause degradation of waters of the state. (Cal. Code Regs., tit. 27, § 22480(b).) The Petition requests that the State Board review the Regional Board's refusal to adopt the revised WDRs recommended by Petitioners and the Regional Board's adoption of the Revised CDO.

### **C. Analysis of Evidentiary Record**

Petitioners and the Regional Board have submitted voluminous data and extensive analyses of the complex technical issues raised by the Petition.<sup>11</sup> The technical report prepared by the Division of Water Quality is based on analysis of the water quality data and other evidence in the record, and consideration of the analyses presented by Petitioners and the Regional Board. The findings of this order are based, in part, on the analysis of the record presented in the Division of Water Quality technical report.

## **III. CONTENTIONS AND FINDINGS**

### **A. Refusal to Approve Revised WDRs Requested by Petitioners**

Contention: Petitioners contend that the Regional Board erred as a matter of law in refusing to approve the Revised WDRs requested by Petitioners, which would have approved their amended closure and post-closure plans.

Findings: The Revised WDRs requested by Petitioners contain 11 pages of proposed findings and requirements, some of which are supported by the record and some of

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<sup>11</sup> The Regional Board filed a detailed response to the allegations in the Petition on August 29, 2003. On November 17, 2003, Petitioners filed a request for exclusion of "significant new allegations of fact and contentions regarding facts" that were allegedly contained in the Regional Board's response. The State Board finds that the Regional Board's response to the Petition was based on analysis of evidence in the record and that none of the Regional Board's response to the Petition should be excluded from the record. The Petitioners' request for exclusion and the January 5, 2004, memorandum from Regional Board Executive Officer Thomas R. Pinkos will both be included in the record as supplemental comments on issues relevant to the Petition. (Cal. Code Regs., tit. 23, § 2050.5(a).)

which are not. For example, although background water quality conditions are a very significant factor affecting downgradient water quality, it would not be accurate to attribute water quality conditions downgradient of the overburden disposal sites solely to background conditions or changes in rainfall patterns as proposed by Petitioners. Changes due to RMKM activities have affected the location of discharges, the timing and rate of discharges and, in some instances, the concentration of TDS and other constituents of concern addressed in the WDRs adopted by the Regional Board. Prior to the dispute over the Revised CDO, Petitioners submitted documents to the Regional Board that recognized that RMKM operations have affected groundwater quality in the area.<sup>12</sup> The State Board also disagrees with the Petitioners' proposal to omit Meridian Gold Company from the findings in the Revised WDRs designating the parties with responsibility for compliance with the mine closure WDRs. (See Section III.F. below.) The record does not support several of the proposed findings and conclusions in the Revised WDRs proposed by Petitioners. Although the State Board concludes that the closure requirements specified in WDR Order No. 5-01-040 should be revised based on the findings in this order, the Regional Board did not err in declining to adopt the Revised WDRs proposed by Petitioners.

## **B. Adoption of the Revised CDO**

Contention: Petitioners contend that the Regional Board erred as a matter of law by adopting the Revised CDO because the evidence shows that the measured differences in water quality at downgradient monitoring points from the overburden disposal sites, the Flotation Tailings Reservoir, and the Skyrocket Pit are the result of upwelling poor quality groundwater recovering to pre-RMKM mining conditions and/or changes in rainfall patterns. Petitioners contend that the differences in water quality are not due to releases from the RMKM waste management units and that there is no substantial evidence to support a finding of releases from the waste management units. Petitioners also contend that the Revised CDO fails to consider the

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<sup>12</sup> Petitioners have previously submitted documents to the Regional Board acknowledging that RMKM has had an adverse effect on groundwater quality. In the "Final Closure/Corrective Action for the Royal Mountain King Mine" submitted to the Regional Board on August 29, 2001, Petitioners proposed a different approach to mine closure than what is advocated by the Regional Board, but acknowledged that "[g]roundwater quality throughout the mine site has changed; in part due to seepage infiltrating from the ODSs. . . ." Similarly, documents Petitioners submitted to the Regional Board on September 27, 2001, attribute increased TDS, in part, to seepage from the overburden disposal sites containing salts flushed from the mineralized overburden material in those facilities.



legally applicable background water quality for surface water and groundwater referred to in that order.

Findings: Petitioners and the Regional Board presented differing analyses of water quality data in the RMKM area and reached very different conclusions regarding the effect of mining activities on water quality at downgradient locations. Following release of the State Board's April 2002 draft order, the Regional Board reevaluated data concerning background water quality conditions. In contrast to Petitioners' contention that downgradient water quality conditions are the result of upwelling of poor quality groundwater or changes in rainfall patterns, the Regional Board concluded that RMKM's activities have significantly degraded surface water and groundwater, and that the degradation is not primarily due to natural geologic formations. (Revised CDO, p. 7.)

The record establishes there are discharges of poor quality water to downgradient areas from the overburden disposal sites, the Skyrocket Pit, and the Flotation Tailings Reservoir. There are multiple sources contributing to the high levels of TDS and increased metals in the groundwater and surface seepage flowing from the RMKM facilities. In addition to the natural sources of salinity and various metallic minerals, water quality has been adversely affected by large-scale mining activities. Mining resulted in dissolution of salts that were previously entrained in native rock and the oxidation of sulfide minerals when the mineralized material was exposed to the atmosphere. The salts and other minerals were later mobilized by infiltration of precipitation and raising groundwater levels after dewatering of mine facilities ceased. There is also evidence that artesian water from poor quality aquifers has entered better water quality zones through the numerous monitoring wells in the RMKM area. The stratification of water quality in the Skyrocket Pit lake may also result from the inflow of poor quality water to the lake from deeper mineralized aquifers that were intersected when the pit was excavated.

As discussed in the Division of Water Quality technical report, the water quality monitoring data referred to by Petitioners and the Regional Board may be influenced by methods of well construction and screening. Meaningful analysis of data from different wells in the area is limited by the different methods of well construction, the varied and complicated geology of the site, substantial differences in water quality at nearby locations prior to mining, and the differing rates of flow at which monitoring wells recharge when sampled. Despite the

limitations, however, the record establishes that large-scale changes to the geology of the RMKM area due to mining operations have resulted in increased discharges of water during the dry season and increased concentrations of inorganic compounds in surface and ground water, particularly downgradient of the overburden disposal sites at which leachate is recirculated.

Contrary to Petitioners' present position, the record shows that discharges of waste from the specified RMKM facilities have some adverse effects on surface water and groundwater quality downgradient from the specified RMKM facilities. For the reasons discussed below, however, this order concludes that the Revised CDO and the closure WDRs established in WDR Order No. 5-01-040 are not supported by the record. Therefore, this order vacates the Revised CDO and remands the matter to the Regional Board for further action as described below.

**C. Petitioners' Request to Reclassify the Overburden Disposal Sites and the Liquid in the Flotation Tailings Reservoir as Group C Mining Wastes**

Contention: Petitioners contend that the Regional Board erred in refusing to reclassify the overburden disposal sites as Group C waste management units and the Flotation Tailings Reservoir liquid as a Group C mining waste. Petitioners contend that the material in the overburden disposal sites and the liquid in the Flotation Tailings Reservoir should be reclassified as Group C waste because the water flowing from beneath those sites is "surfacing groundwater that is unchanged by the rock and sand materials in the [waste management units]." Petitioners also contend that, because the facilities "are not releasing waste into a receiving water, there is no evidence on which to base their regulation as Group B mining waste." (Petition, p. 23.)

Findings: RMKM ceased mining operations in 1994. Prior to adoption of Closure WDR Order No. 5-01-040 in 2001, the waste material in the overburden disposal sites<sup>13</sup> was classified as Group C mining waste pursuant to California Code of Regulations, title 27, section 22480(b). Section 22480(b) defines Group C mining wastes as "wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity." Following cessation of mining activities, Petitioners spent approximately \$20 million on closure and reclamation of the RMKM site, including costs

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<sup>13</sup> The three overburden disposal sites are designated as the Flotation Tailings Reservoir ODS, the West ODS, and the Gold Knoll ODS.

of technical studies and closure proposals. The revised WDRs established in Order No. 5-10-040 reclassified the overburden disposal sites wastes as Group B wastes based on the Regional Board's conclusion that the sites "contain nonhazardous soluble pollutant concentrations which exceed water quality objectives for, or could cause degradation of, the waters of the state." (Cal. Code Regs., tit. 27, § 2080(b)(3).)

The overburden disposal sites contain approximately 50 million tons of mining wastes covering an area of approximately 197 acres. The water passing through the overburden disposal sites is a combination of precipitation infiltrating downward, groundwater moving laterally through the material deposited in the sites, and upwelling groundwater. The record does not support Petitioners' contention that the groundwater surfacing at downgradient locations is unchanged by passing through the mining waste in the overburden disposal sites. As discussed in the Division of Water Quality technical report, there are a number of factors that contribute to the poor quality of water downgradient of the RMKM facilities, including the increased mobilization of salts and other minerals that occurs as water passes through the mining wastes in the overburden disposal sites. Water seeping from the base of the overburden disposal sites exceeds the water quality objective for TDS and contributes to year-round flow in previously intermittent streams.

Petitioners' contention that water is unchanged as it passes through the waste material in the overburden disposal sites is contrary to evidence referred to by the Regional Board and contrary to statements in prior documents that Petitioners submitted to the Regional Board as discussed in Section III.A. above. Similarly, Petitioners' contention that the overburden disposal sites do not release waste into receiving waters is not supported by the record and provides no basis for reclassifying the sites. Despite poor background water quality conditions in the RMKM area, surface water and groundwater flowing from the overburden disposal sites contain statistically significant increases of some inorganic constituents.

The Regional Board cites the Group B classification as grounds for rejecting closure proposals that do not involve installation of a clay cover over the overburden disposal sites. In fact, however, compliance with the prescriptive requirements in title 27 for Group B wastes would also require installation of a clay liner under the site. (Cal. Code Regs., tit. 27, § 22490.) The estimated cost of installing a cover over the overburden disposal sites pursuant to

title 27 requirements is approximately \$30 million. However, isolation of the overburden disposal sites from groundwater inflow would require installing extensive subsurface cutoff walls or removing approximately 50 million tons of mining overburden stockpiles in order to install a clay liner over an area of approximately 197 acres.<sup>14</sup> At a minimum cost of \$2 per ton, relocating 50 million tons of mining waste from the overburden disposal sites in order to allow for installation of a liner would cost approximately \$100 million. The cost of actually installing the liner to fully comply with the prescriptive requirements for Group B wastes would be many million dollars more.

The Regional Board has not proposed that Petitioners be required to install liners at the overburden disposal sites as a condition of mine closure. In this instance, however, installing a cap without an underlying liner would not isolate the mining wastes, would not prevent lateral movement of groundwater through waste material in the sites, would not prevent upwelling groundwater from flowing through the sites, and would not prevent the sites from contributing to elevated TDS levels and other water quality problems in downgradient areas. Rather than pursuing expensive and ineffective measures to partially comply with prescriptive closure requirements for Group B wastes, the State Board concludes that it would be appropriate for Petitioners and the Regional Board to pursue an alternative approach. As discussed in Section III.E. below, the title 27 regulations allow flexibility in classification of mining wastes under certain circumstances. (Cal. Code Regs., tit. 27, § 22480, subd. (c) and (d).) Successful design and implementation of an alternative approach to mine closure as addressed in Section III.E. would allow for reclassification of the overburden disposal sites as Group C wastes and more effective protection of water quality.

#### **D. Risk of Water Overtopping the Skyrocket Pit Lake and Reaching Littlejohns Creek**

Contention: Petitioners contend that there is no evidence in the record to support the Regional Board's finding that there is a substantial risk of water overtopping the Skyrocket Pit lake and reaching Littlejohns Creek.

Findings: During recent years, the Skyrocket Pit has been filled with groundwater and water discharged from other facilities within the RMKM project site. Under

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<sup>14</sup> Although installation of subsurface cutoff walls could reduce groundwater inflow to the overburden disposal sites, it could also redirect ground water flow into areas that would generate higher TDS concentrations.

present operations, Skyrocket Pit impounds water from the Flotation Tailings Reservoir Leachate Collection and Recovery System. Impoundment of water in Skyrocket Pit and the recovery of groundwater levels after mine dewatering ceased caused changes in the groundwater gradient. Previously, when the pit was dewatered during mining operations, the groundwater gradient sloped inward toward the pit whereas now, there is a groundwater mound sloping away from the southeast portion of the pit. Petitioners' consultants estimate that the water level in Skyrocket Pit has reached equilibrium and that overtopping the spillway at the dam would require 70 inches of rain in one season, an amount that exceeds the maximum annual precipitation during recorded history. In response, the Regional Board cites Petitioners' earlier water balance calculations that indicate the lake could overtop as soon as 2004. Regardless of the probability of uncontrolled releases from Skyrocket Pit, the Regional Board contends that seeps and springs caused by seepage of water from the lower elevations of Skyrocket Pit pose a greater danger to water quality.

The long-term threat to water quality from Skyrocket Pit is due to the increasing concentration of TDS and other pollutants resulting from evaporation of water impounded in the lake. Due to the stratification of water within Skyrocket Pit, water quality deteriorates at the lower depths. Impounding water in Skyrocket Pit results in creating a mound of poorer quality groundwater that emerges as seeps and springs in the downgradient area. Potential water quality problems would be reduced by developing a drainage system that does not impound surface flow at Skyrocket Pit, but allows the water to flow to downstream wetland areas designed to reduce pollutant concentration through phytoremediation or other natural attenuation processes. (See Section III.E. below.)

#### **E. Consideration of Remedial Measures Not Addressed in the Prescriptive Provisions of Title 27 of the California Code of Regulations**

Contention: Petitioners contend that the Regional Board should consider policies and remedial measures outside the title 27 requirements, if necessary, to reasonably address the closure issues of the RMKM site.

Findings: On February 13, 2003, Petitioners submitted amendments to its previous RMKM closure plans to the Regional Board.<sup>15</sup> The closure plan amendment for the Flotation Tailings Reservoir, Skyrocket Pit, and the overburden disposal sites proposed a number of changes including ceasing the transfer of water to Skyrocket Pit from the Flotation Tailings Reservoir Leachate Concentrate Recovery System and creating wetlands downgradient from the overburden disposal sites by planting salt-tolerant vegetation.

Regional Board staff provided comments on the closure plan amendments for the Flotation Tailings Reservoir, Skyrocket Pit, and the overburden disposal sites in a letter dated March 28, 2003. The letter advised Petitioners that their proposal did not comply with the WDRs established by Order No. 5-01-014 or with the regulations in California Code of Regulations, title 27. The Revised CDO includes findings that the Dischargers propose to create wetlands at the seepage points associated with the overburden disposal sites “instead of capping the source of the problem in accordance with Title 27.” The Revised CDO goes on to state that planting a wetland environment would not capture the increased flow (from the overburden disposal sites) once irrigation ceased and would not assimilate the mass loading of high concentrations of dissolved minerals and metals emanating from millions of tons of waste rock into once-intermittent creek environments.<sup>16</sup> Therefore, the Revised CDO concludes that creating wetlands downgradient from the overburden disposal site point source discharges of seepage water would not comply with applicable WDRs, the title 27 regulations, or the Federal Clean Water Act.

A critical difference between the positions of Petitioners and the Regional Board concerns compliance with the prescriptive cover requirements established in the regulations governing construction and closure of mining units under title 27 of the California Code of Regulations. (Cal. Code Regs. tit. 27, § 22520.) Section 22490 requires that mining units containing Group B wastes be constructed with a low permeability clay liner and sections 22510 and 21090 require that Group B facilities containing solid mining waste be covered with a low

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<sup>15</sup> “Amendment to Closure and Post-Closure Maintenance Plan for the Leachate Concentrate Residue Facility (LCFR), Closure” and “Closure Plan Amendment, Flotation Tailing Reservoir (FTR), Skyrocket Pit (SRO) and Overburden Disposal Sites.”

<sup>16</sup> The Revised CDO does not elaborate further on the reasons for the conclusion that Petitioners’ wetlands proposal would be ineffective.

permeability clay cover. Despite regulatory requirements calling for a clay liner and a clay cover or cap, the Regional Board has focused on requiring compliance with the prescriptive cover requirements, but has not required Petitioners to install or submit plans for installation of a clay liner. As discussed in Section III.C. above, installing a clay cover without an underlying liner would not prevent groundwater from moving through the waste material in the overburden disposal sites and would not prevent the discharge from those sites from contributing to elevated levels of TDS and heavy metals in downgradient areas. In view of the limited effectiveness of installing a clay cover on the overburden disposal sites to achieve partial compliance with the title 27 regulations, and the high cost of covering a large area with a clay covering meeting prescribed standards, the State Board concludes it is appropriate to require further consideration of alternate means of complying with applicable legal requirements for mine closure and cleanup.

The requirements governing closure of mine sites vary considerably depending upon the classification of the mining waste contained in a particular facility. In this instance, the waste in the overburden disposal sites was previously classified as Group C waste prior to reclassification as Group B waste by WDR Order No. 5-01-040. Subdivisions (c) and (d) of title 27, section 22480, provide:

“(c) Classification Considerations -- In reaching decisions regarding classification of mining waste as a Group B or Group C waste, the RWQCB can consider the following factors:

“(1) whether the waste contains hazardous constituents only at low concentrations;

“(2) whether the waste has no or low acid generating potential; and

“(3) whether because of its intrinsic properties, the waste is readily containable by less stringent measures.

“(d) Treatment -- Mining waste shall be treated or neutralized whenever feasible to minimize the threat to water quality and minimize the need to install waste containment structures.”

The discharges at issue from RMKM facilities contain low concentrations of the hazardous constituent arsenic, they do not pose an acid drainage problem, and Petitioners have proposed to develop additional wetlands, which could serve to contain discharges in order to allow for natural attenuation and promote phytoremediation of the high levels of TDS and the

presence of some heavy metals. In view of the high cost and limited effectiveness of installing a clay cover as a partial waste containment structure at the overburden disposal sites, development of a plan to improve water quality through use of enhanced and expanded wetland and riparian areas downgradient from RMKM discharges should be given high priority. In developing the plan, Petitioners should address the quantity and composition of discharges from RMKM facilities at different times of the year, and should evaluate the potential for reducing TDS and other constituents of concern in surface water through natural processes in expanded wetland and riparian areas while limiting further impacts to groundwater. Under the criteria set forth in section 22480 above, development and implementation of an appropriate plan may allow for reclassification of any remaining wastes leaving the wetland areas as Group C waste.

Petitioners contend that the Regional Board should have given more consideration to policies and remedial measures outside title 27 requirements in order to resolve the closure issues of the RMKM site in a reasonable manner. In view of problems associated with installation of clay covers at the overburden disposal sites and continued impoundment of water at Skyrocket Pit, the State Board concludes that an alternate approach to that required in WDR Order No. 5-01-040 should be taken to closure of the RMKM site. Based on the findings above, the provisions of the title 27 regulations governing water quality and mining operations may provide sufficient flexibility to allow for development of less costly and more effective mine closure alternatives that do not require installation of further clay covers over large areas at the RMKM site.

Another alternative approach that Petitioners previously raised in Petition A-1369 would be to amend the Basin Plan to de-designate beneficial uses of surface water and groundwater in the immediate vicinity of RMKM, upstream of Flowers Reservoir, in order to allow for amendment of the WDRs established in Closure WDR Order No. 5-01-040. If the Basin Plan were amended to de-designate beneficial uses of water, as was previously proposed by Petitioners, that would provide a basis for amendment of the WDRs and reclassification of the overburden disposal sites as Group C mining wastes subject to less stringent regulation. Federal regulations allow for de-designation of beneficial uses in various conditions including: (1) where naturally-occurring pollutant concentrations prevent attainment of a particular use; or (2) where human-caused conditions or sources of pollution prevent attainment of the use and the conditions



cannot be remedied or where remedying those conditions would cause more environmental damage than to leave them in place. (40 C.F.R. §§ 131.10(g)(1) and (3).)<sup>17</sup>

Establishment of a groundwater containment zone may also be appropriate for this facility due to the high level of naturally occurring salts. Naturally occurring salts degrade groundwater in this area, and water quality objectives would not be met at many locations even if all contributions from the Petitioners were removed. Removing salt from the underlying groundwater could require Petitioners to pump and treat the extracted water with reverse osmosis, an expensive, energy-intensive remedial measure that would generate a waste brine that may be three to ten times saltier than the extracted groundwater. The resultant brine would then have to be disposed of without adversely affecting water quality. In addition, previous data on groundwater quality in the RMKM area show that the type of large-scale pumping that would be required for groundwater cleanup purposes has the potential to draw poor quality water into areas of better quality groundwater which would exacerbate pollution problems. In summary, a groundwater cleanup program would be extremely expensive, provide limited benefits, and could potentially aggravate groundwater conditions at some locations. For these reasons, Petitioners' proposal to establish a groundwater containment zone should be given more consideration as a partial regulatory solution for this extremely complex facility.<sup>18</sup>

#### **F. Liability of Meridian Gold Company**

Contention: Petitioners contend that Meridian Gold Company is improperly identified as a discharger in the Revised CDO because the record does not contain substantial evidence that Meridian Gold Company owned or operated the RMKM site. In support of this contention, Petitioners refer to a declaration of Peter Dougherty dated April 14, 2001, that addresses the recent history of entities involved in the ownership and operation of the RMKM.

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<sup>17</sup> If the wetlands development plan to be submitted by Petitioners pursuant to this order proposes amendment of the Basin Plan, the State Board expects Petitioners to make appropriate commitments of resources to support the amendment process. The State Board also intends to assist the Regional Board with available resources to facilitate appropriate amendment of the Basin Plan. At the State Board workshop on May 4, 2004, Board Member Katz expressed concern about avoiding potential objections to involvement of State Board staff in any future review of Regional Board actions, following staff's involvement in working with Petitioners and the Regional Board on matters pending before the Regional Board. Representatives of Petitioners and the Regional Board both stipulated that they have no objection to the same State Board staff assisting in both capacities.

<sup>18</sup> A proposal to establish a groundwater containment zone would be subject to applicable provisions of State Board Resolution No. 92-49.

Mr. Dougherty's April 14, 2001, declaration states that in May 1990, FMC Gold Company purchased Meridian Gold Company that owned RMKM. The declaration goes on to state that "[a]fter the purchase [at an unspecified date], Meridian Gold Company was renamed FMC Beartrack Company and made a wholly owned subsidiary of FMC Gold Company, a Delaware corporation." The declaration states that in July 1996, the FMC Gold Company was sold, the name of FMC Gold Company was changed to Meridian Gold Company, and FMC Beartrack Company was renamed to Meridian Beartrack Company. The declaration states that the present Meridian Gold Company is the sole shareholder of Meridian Beartrack Company. With respect to operations at RMKM, the declaration states that Meridian Beartrack Company, previously named FMC Beartrack Company, "was the sole operator of the Royal Mountain King Mine during the entirety of its operational life which spanned between 1988 and 1994." Finally, the Dougherty declaration states that "[t]he Meridian Gold Company now in existence never had any direct ownership interest in the Royal Mountain King Mine nor was it at all involved in any of the mining operations or subsequent reclamation activities at this mine site."

Findings: Petitioners' contention is not supported by the record and is without merit. In contrast to the dizzying array of corporate name changes and alleged changes in ownership and control of RMKM described by Petitioners, the Regional Board records reflect consistent, repeated, and direct involvement of "Meridian Gold Company" as an owner and operator of RMKM, including mine closure activities from 1990 until at least January 2000. The Report of Waste Discharge to the Regional Board on May 18, 1990, showed "Meridian Gold Company" as the operator and one of two owners of RMKM.<sup>19</sup> For the period between 1990 and December 2, 1999, the record contains a mountain of correspondence and reports submitted by "Meridian Gold Company" and its consultants with respect to RMKM.

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<sup>19</sup> Prior to receiving the Report of Waste Discharge on May 18, 1990, the Regional Board received a letter dated April 24, 1990, stating that Meridian Minerals Company was transferring to Meridian Gold Company its interest under the Regional Board orders establishing WDRs for the RMKM. (Regional Board Orders No. 88-100 and 88-176, issued on June 28, 1988, and September 23, 1988, respectively.) Attached to the letter was a document signed by the president of Meridian Gold Company in which Meridian Gold Company agreed to accept the assignment and agreed to carry out all of Meridian Minerals Company's duties and obligations under the specified permits and orders. The Report of Waste Discharge submitted to the Regional Board on May 18, 1990, was accompanied by a check from Meridian Gold Company for a \$3,100 filing fee.

The declaration cited by Petitioners indicates that the name of Meridian Gold Company (that owned RMKM in 1990) was changed to FMC Beartrack Company, and that the present Meridian Gold Company began in July 1996 when FMC Gold Company changed its name to Meridian Gold Company. Contrary to Petitioners' representations that the present Meridian Gold Company has not been involved in RMKM reclamation activities, however, the record shows extensive correspondence between "Meridian Gold Company" and the Regional Board regarding RMKM operations both before and after July 1996. Meridian Gold Company is shown as the discharger in the WDRs issued for RMKM for 1990, 1991, 1994, 1997, and 2001. The numerous documents filed with the Regional Board by Meridian Gold Company include a Report of Waste Discharge dated August 30, 1999, showing the present Meridian Gold Company as both the owner and operator of RMKM. The record also includes a letter from Petitioners' counsel dated October 6, 1999, that addresses the subject of "Meridian Gold Company Proposed Test for Alternative Closure of LCRS FTR Drain, Royal Mountain King Mine Property, Calaveras County."

Mr. Dougherty's April 14, 2001, declaration acknowledges that Meridian Gold Company is the sole shareholder in Meridian Beartrack Company, but states that the "Meridian Gold Company now in existence never had any direct ownership interest in the Royal Mountain King Mine nor was it at all involved in any of the mining operations or subsequent reclamation activities at this mine site." This not only conflicts with extensive documentation in the record, but it conflicts with the statement in Mr. Dougherty's letter to the Calaveras County Planning Department dated December 30, 1999, that "Meridian Gold Company (Meridian) has pursued full-scale reclamation and closure of the site since mining and milling ceased in mid-1994."<sup>20</sup>

The first indication of the attempt to shift responsibility for RMKM closure activities from Meridian Gold Company to Meridian Beartrack Corporation is a letter to the Regional Board dated January 10, 2000, signed by Mr. Dougherty as Controller for Meridian

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<sup>20</sup> The December 30, 1999, letter from Mr. Dougherty is included in the administrative record as an attachment to a letter dated January 4, 2000, to the Regional Board from the Calaveras County Planning Department concerning Meridian Gold Company's request to reduce the amount of the reclamation bond that was required to be posted by the Regional Board.

Beartrack Corporation.<sup>21</sup> Mr. Dougherty's letter states that a Mr. Smith (the person previously assigned to RMKM closure activities for Meridian Gold Company):

“has assumed new responsibilities within our company and will be moving abroad. With this in mind, I have taken over responsibility for Royal Mountain King mine closure on behalf of Meridian Beartrack Corporation (Meridian).” (Emphasis added.)

Although the letter explains the change of the designation of employees assigned to oversee mine closure activities for the operator, it says nothing about the apparent effort to shift responsibility for mine closure from Meridian Gold Company to Meridian Beartrack Corporation. Regardless of any changes in corporate organization and names that may have occurred during the 1990s, the record shows that the primary entity involved in mining operations and subsequent RMKM closure activities throughout the last decade operated under the name of Meridian Gold Company. Meridian Gold Company may choose to utilize staff or resources of a subsidiary corporation to assist in meeting mine closure requirements. In so doing, however, it does not avoid the legal and financial obligations arising from its own involvement in the ownership or operation of the RMKM.

Petitioners contend that Meridian Gold Company was improperly identified as a discharger in the Revised CDO because the record does not contain substantial evidence that Meridian Gold Company owned or operated the RMKM site. (Petition, p. 11.) Contrary to Petitioners' allegations, however, the record includes extensive evidence that the present Meridian Gold Company has been directly involved in the operation of RMKM, that RMKM has resulted in discharges of waste to waters of the state, and that Meridian Gold Company was properly named as a discharger in the Revised CDO and prior Regional Board orders.<sup>22</sup> The

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<sup>21</sup> Although the declaration cited by Petitioners indicates that Meridian Beartrack Company was established in July 1996, Mr. Dougherty's letter of January 10, 2000, as Controller of Meridian Beartrack Corporation is on Meridian Gold Company letterhead. It is not apparent from the declaration cited by Petitioners or the January 10, 2000, letter, but it appears that the Meridian Beartrack *Corporation* referred to in the letter is the same entity as the Meridian Beartrack *Company* that is referred to in Mr. Dougherty's declaration and the Petition.

<sup>22</sup> “Meridian Gold Company” has been listed as an operator of the RMKM in numerous prior Regional Board orders addressing WDRs and other matters (e.g., Central Valley Regional Water Quality Control Board Order Nos. 90-188, 91-078, 91-195, 94-209, 94-210, and 97-084). The Regional Board's response to this Petition cites several other documents establishing the present Meridian Gold Company's direct involvement with the operation of RMKM facilities from 1996 through 1999, including providing financial assurances for mine closure costs. (Regional Board Response to Petition, p. 53.)

Petition and the Regional Board's response both address the possibility of finding Meridian Gold Company responsible for compliance with mine closure requirements based on other legal theories. In view of our conclusion that Meridian Gold Company is responsible for complying with all appropriate mine closure and cleanup requirements based on its own extensive and direct involvement in the operation of RMKM and subsequent mine closure activities, we need not address the question of Meridian Gold Company's liability for compliance based on the nature of its relationship with Meridian Beartrack Company.

#### IV. CONCLUSION

Based on the findings above, we conclude that, prior to Petitioners' activities, background water quality in the area of RMKM was variable but generally poor. The record establishes that mining and related activities of Petitioners have had adverse effects on water quality at some locations. The Revised CDO and the mine closure WDRs presently in effect are based, in part, on the reclassification of the mining waste in the overburden disposal sites as Group B mining wastes. Closure of sites containing Group B waste ordinarily would require installation of a clay liner under the sites and a clay cover over the sites, in this instance an area of approximately 197 acres. Although the Revised CDO calls for closing the three overburden disposal sites "in compliance with title 27 requirements for Group B mine wastes," the Regional Board has focused on requiring a clay cover, but has not pursued installation of an underlying clay liner as specified by the title 27 regulations.<sup>23</sup> In the absence of a liner, installation of a clay cover would have little benefit to downstream water quality and would not lead to compliance with title 27 requirements.<sup>24</sup>

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<sup>23</sup> The Regional Board's focus on installation of a clay covers appears to be based on recognition of the extreme expense, limited utility, and questionable feasibility of removing 50 million tons of waste material in order to install clay liners under large areas when the primary water quality problem to be addressed is a slight increase in TDS in an area having elevated TDS under background conditions.

<sup>24</sup> Although the issues raised by Petition A-1569 come before the State Board in the context of an appeal from a cease and desist order, the conditions addressed by the Revised CDO are the result of mining operations that ended approximately 10 years ago. In addressing water quality problems related to RMKM, it is relevant to consider policies governing remedial action under cleanup and abatement orders issued pursuant to Water Code section 13304. State Board Resolution No. 92-49 provides that in pursuing cleanup and abatement actions, Regional Boards:

"shall determine whether water quality objectives can reasonably be achieved within a reasonable period by considering what is technologically and economically feasible and shall take into

*[footnote continued next page]*

The regulations governing classification of mining wastes under title 27 provide a degree of flexibility both with respect to classification of mining wastes and compliance with closure requirements. In this instance, the wastes involved are not acid generating, the primary constituents of concern are salts, and the concentration of hazardous constituents is low. Development of an alternative closure proposal based on development of expanded wetlands and riparian zones is likely to provide better water quality protection than would result from installation of clay covers, and may also allow for reclassification of the overburden disposal sites as Group C wastes. (Cal. Code Regs., tit. 27, § 22480, subd. (c) and (d).) In addition, California Code of Regulations, title 27, section 20080(b) authorizes approval of engineered alternatives to the normally applicable prescriptive standards in instances where certain requirements are met. Thus, even if wastes at particular sites remain classified as Group B waste, the regulations may allow for alternative approaches to control of those wastes.

Other alternative approaches that may be an appropriate part of long-term resolution of water quality problems in the RMKM area include de-designation of beneficial uses and establishment of a groundwater containment zone as discussed in Section III.E., above. Regardless of the approach to mine closure and cleanup that is ultimately approved for the RMKM site, Meridian Gold Company was properly classified as a discharger responsible for compliance with future mine closure and cleanup requirements.

The Regional Board and the Petitioners have devoted considerable effort to developing an approach to RMKM closure that is consistent with their view of the facts and applicable requirements. Following distribution of the State Board's draft order in April 2002, the parties attempted to negotiate an acceptable resolution, but were unable to do so. In remanding this matter to the Regional Board for further action, the State Board recognizes that this order does not resolve all potential disputes, but calls upon both parties to work cooperatively in developing a new approach to resolution of the remaining mine closure issues that is consistent with applicable law and with the findings and conclusions herein.<sup>25</sup>

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account environmental characteristics of the hydrogeologic unit under consideration and the degree of impact of any remaining pollutants . . . .”

<sup>25</sup> Developing a revised approach to mine closure should focus on reducing actual impacts to water quality in a cost-effective manner in accordance with the policy of Water Code section 13000, applicable provisions of the Basin [footnote continued next page]

The State Board concludes that the Revised CDO should be vacated and that it is appropriate to consider engineered alternative closure requirements for RMKM and alternative remedial measures for the water quality impacts of RMKM. This order directs Petitioners to consult with the Regional Board and prepare a plan to develop expanded wetland and riparian areas downgradient of RMKM facilities in order to promote natural attenuation and phytoremediation of elevated levels of TDS and heavy metals. The plan for development of expanded wetland and riparian areas should include appropriate monitoring and waste management procedures to prevent the accumulation of arsenic or other hazardous constituents in a manner that would adversely affect beneficial uses of water downstream of the developed wetland area. This order also directs the Regional Board to revise the mine closure WDRs established in Closure WDR Order No. 5-01-040 following consideration of Petitioners' plan and other relevant evidence. Due to the unusual procedural and factual context of the issues raised in Petition A-1569, the State Board considers this order to be non-precedential, and the findings, conclusions, and directives of this order are not intended to have precedential effect with respect to closure or cleanup issues that may arise at other sites.

## **V. ORDER**

IT IS HEREBY ORDERED that:

1. Revised Cease and Desist Order No. R5-2003-0055 is vacated and this matter is remanded to the Regional Board for further action consistent with the findings and conclusions of this order.
2. Petitioners shall prepare and submit a plan to the Regional Board for development of expanded and enhanced wetland and riparian areas downgradient of RMKM facilities in order to promote natural attenuation and phytoremediation of elevated levels of TDS, sulfate, and heavy metals. The plan shall be developed under the direction of a licensed professional engineer or geologist with assistance from other professionals with experience in development of wetland and riparian areas for water treatment purposes. The plan shall consider proposals for terminating the recirculation of water flowing from the overburden disposal sites,

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Plan (e.g., Basin Plan, p. IV-15.00 and p. IV-19.00), and the State Board's policy regarding cleanup and abatement of discharges due to previously created conditions. (State Board Resolution No. 92-49.)

restoring surface flow in channels across the pit lakes, and capturing surface flow in additional retention ponds downgradient from Skyrocket Pit. Petitioners shall consult with Regional Board staff during preparation of the plan and shall submit the plan to the Regional Board for review by December 1, 2004.

3. Following review and consideration of Petitioners' plan for establishment of expanded and enhanced wetland and riparian areas, the Regional Board shall revise the mine closure WDRs established in Closure WDR Order No. 5-01-040 based on consideration of information in Petitioners' plan and other relevant evidence.



4. Prior to completion of the plan that Petitioners are directed to prepare pursuant to this order and after consultation with the Regional Board, Petitioners may continue to discharge wastewater from the Flotation Tailings Reservoir Leachate Collection and Recovery System (FTR/LCRS) to Skyrocket Pit as authorized in the closure WDRs that are currently in effect. However, the Regional Board shall not institute enforcement action to require transfer of water from the FTR/LCRS to Skyrocket Pit prior to revision of the closure WDRs following consideration of Petitioners' plan and other relevant information.

#### **VI. CERTIFICATION**

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 20, 2004.

AYE: Arthur G. Baggett, Jr.  
Peter S. Silva  
Richard Katz  
Nancy H. Sutley

NO: None.

ABSENT: None.

ABSTAIN: None.

**(Board Member Gary M. Carlton did not participate.)**

  
Debbie Irvin  
Clerk to the Board