

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WQO 2003 - 0006

In the Matter of the Review on its Own Motion

ORIGINAL SIXTEEN TO ONE MINE, INC.

For Review of Waste Discharge Requirements Order No. R5-2002-0043
and Cease and Desist Order No. R5-2002-004
[NPDES No. CA0081809]

Issued by the
California Regional Water Quality Control Board,
Central Valley Region

SWRCB/OCC FILE A-1466

BY THE BOARD:

I. BACKGROUND

The Central Valley Regional Water Quality Control Board (Regional Board) adopted Order No. R5-2002-0043 [National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081809] (Permit) on March 1, 2002, authorizing the 16 to 1 Mine, Inc. (Petitioner) and Michael Miller, Petitioner's President/CEO, to discharge wastewater from gold ore processing and underground mine de-watering operations to Kanaka Creek. The discharge was previously regulated by Waste Discharge Requirements in Regional Board Order No. 95-004.

Petitioner filed a petition for review of the Permit and requested a stay.¹ In this order the State Water Resources Control Board (State Board or Board) addresses the significant issues raised in the petition, upholds the Permit in large part, and revises various Permit findings and requirements.^{2,3} The remaining issues are dismissed.⁴

¹ The stay request was denied by the State Board Executive Director on June 11, 2002.

² This order is based on the record before the Regional Board and also the following documents, which are hereby added to the record: Exhibits 1-15 submitted by Petitioner at the January 7, 2003 State Board workshop;
[footnote continued next page]

Underground mining operations at the mine consist of tunneling, removal of gold bearing material, and the transport of gold or gold bearing material to the surface for further processing. Ore processing unit operations at the mine include a high-grade encapsulated mill, a low-grade mill, cyclone separators, and a closed retort system that utilizes mercury to further process gold bearing ore. Mercury treated ore is sent off site for final gold extraction.

Wastewater is generated at the site by the exposure of groundwater seepage to newly created rock surfaces and tailings that contain higher than normal pollutant concentrations, and also by surface ore processing operations. Wastewater treatment consists of a series of aboveground settling ponds that treat mill effluent and below-ground settling ponds that further treat co-mingled mill effluent and captured groundwater seepage. The below-ground settling ponds are wastewater collection ponds located in the underground portion of the mine (within the mine tunnels). The collected wastewater is then discharged through the 21-tunnel outfall to Kanaka Creek. The long-term average wastewater discharge flow rate to Kanaka Creek is 0.28 million gallons per day (MGD). Petitioner has not specified the flow rates of wastewater generated by the high and low-grade mills; therefore, the long-term average flow includes mine de-watering and mill process wastewater flows.

Two weeks before the Regional Board adopted the Permit, Petitioner notified Regional Board staff that the low-grade mill had not been in operation since February 1999 and there was no intention to restart it. The Regional Board heard testimony from Petitioner, Regional Board staff, and various interested parties on this issue and the Regional Board appears to have accepted testimony indicating that the mill shut down should not substantially change the nature of the combined discharge to the creek and that even if it would, Petitioner's failure to submit any monitoring data after the mill was shut down would preclude any finding that the

Exhibits 16--22 submitted by Petitioner at the March 4, 2003 State Board workshop; and a one-page arsenic monitoring report submitted by the South Yuba River Citizens League at the March 4, 2003 State Board workshop.

³ Under the State Board's petition regulations, the State Board must take final action on a petition within 270 days of the date the petition is complete. If not, the petition is deemed denied. (Cal. Code Regs., tit. 23, § 2052(d)). The State Board did not take final action on the petition within this time frame. However, the State Board, at its March 19, 2003 meeting, adopted a motion to review the Regional Board's action on its own motion, as authorized by Water Code section 13320(a).

⁴ See *People v. Barry* (1987) 194 Cal.App.3d 158; Cal. Code Regs., tit. 23, § 2052(a)(1). Dismissed issues have either been addressed in previous State Board orders, or are determined to be not sufficiently substantial to warrant review.

discharge presented less of a threat than was indicated by the monitoring data in the record from before the shut down.⁵ The Regional Board recognized the possibility that the Permit could be amended in the future if Petitioner submitted required monitoring data demonstrating that the overall discharge presented less of a threat without the low-grade mill discharge.⁶

Kanaka Creek is not specifically identified in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins⁷ (Basin Plan), but is tributary to the Yuba River. As such, the following beneficial uses are assigned to Kanaka Creek pursuant to the Basin Plan tributary rule.⁸ Municipal and Domestic Supply; Agricultural Supply including Irrigation and Stock Watering; Hydropower Generation; Water Contact and Non-contact Recreation, including aesthetic enjoyment; Cold Freshwater Habitat; Cold Water Spawning Habitat; and Wildlife Habitat. The Department of Fish and Game reported that Kanaka Creek maintains populations of rainbow trout and provides spawning habitat.

The Regional Board has documented extensive violations of Petitioner's previous permit, including suspended solids violations severe enough to cover the streambed with silt, and failure to perform the majority of required monitoring.⁹ In response to these violations, the Regional Board adopted Administrative Civil Liability (ACL) Order No. 97-210 in the amount of \$20,000 on September 19, 1997. Although the State Board and Superior Court upheld the ACL Order, Petitioner has not paid the \$20,000. Petitioner has also failed to pay \$7,600 in annual permit fees.¹⁰ The Regional Board has adopted a Cease and Desist Order directing the Petitioner to comply with the Permit.¹¹ The Regional Board has also recently referred this matter to the Attorney General to address outstanding violations and to collect the unpaid liability assessment and permit fees.¹²

⁵ See Regional Board Transcript.

⁶ *Id.*

⁷ Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (1998).

⁸ See Basin Plan II-2 and State Board Order WQO 2002-15 (City of Vacaville).

⁹ See Permit, pp. 12-16.

¹⁰ Regional Board Resolution No. R5-2002-0045 (Referral to the Attorney General).

¹¹ Regional Board Order No. R5-2002-0044.

¹² See footnote 10.

A portion of Kanaka Creek is listed as impaired, due to arsenic, on the 1998 U.S. Environmental Protection Agency (EPA) Clean Water Act (CWA) section 303(d) list.¹³ A total maximum daily load (TMDL) that will be developed by the Regional Board may affect this facility. The CWA, in general, mandates that the states develop TMDLs for all section 303(d)-listed waters. A TMDL is a water quality control strategy designed to address water body impairment and to bring the water into compliance with water quality standards.¹⁴

Before the Permit was adopted, the EPA in May 2000, promulgated the California Toxics Rule (CTR).¹⁵ The CTR established numeric criteria, the equivalent of state-adopted water quality objectives,¹⁶ for priority toxic pollutants¹⁷ for the state's inland surface waters and enclosed bays and estuaries. The State Board concurrently adopted a policy to implement the CTR criteria, as well as applicable National Toxics Rule (NTR) criteria,¹⁸ and priority pollutant water quality objectives.¹⁹ The policy is entitled, *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000)* (Implementation

¹³ 33 U.S.C. § 1313(d). This section requires that the states identify waters for which technology-based effluent limitations are not stringent enough to meet water quality standards. The states must establish a priority ranking for these waters, taking into account the pollution's severity and the waters' uses. The states must then establish, "in accordance with the priority ranking, the total maximum daily load, for those pollutants Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." See 63 Fed.Reg. 59556-59557 (Nov. 4, 1998) (notice of availability proposed EPA decision, partially approving and partially disapproving the state's 1998 CWA section 303(d) list). EPA transmitted the final list to the state by letter, dated May 12, 1999.

¹⁴ EPA regulations currently define a TMDL as the sum of wasteload allocations for point sources, load allocations for nonpoint sources, and background sources. 40 C.F.R. § 130.2(i). A "wasteload allocation" is the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. *Id.* § 130.2(h). A "load allocation" is the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources." *Id.* § 130.2(g).

¹⁵ See 40 C.F.R. § 138.38, 65 Fed.Reg. 31682-31719 (May 18, 2000).

¹⁶ Compare Wat. Code § 13050(h) ("Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.") with 40 C.F.R. 131.3(b) ("[C]riteria are elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use.")

¹⁷ Appendix A to 40 C.F.R. part 423 lists 126 priority pollutants.

¹⁸ See 40 C.F.R. § 131.36, 57, Fed.Reg. 60848-60923 (Dec. 22, 1992).

¹⁹ See Cal. Code Regs., tit. 23, § 2914. The Board adopted the Policy on March 2, 2000. The Policy went into effect for NTR criteria and state-adopted water quality objectives on April 28, 2000, the date of Office of Administrative Law approval. It became effective for CTR criteria on May 18, 2000, the CTR's effective date.

Policy or Policy). Among other provisions, the Policy establishes procedures, which were applied by the Regional Board in this case, for selecting priority toxic pollutants that must be regulated in a permit, calculating effluent limitations, and establishing compliance schedules.

The petition generally contends that the Regional Board: (1) improperly named the corporation's President as a co-permittee; (2) failed to amend the permit to account for the shut down of the low-grade mill; (3) included overly burdensome monitoring requirements; and (4) failed to assign dilution credit for the discharge.

II. CONTENTIONS AND FINDINGS

A. Naming Corporate President/CEO as Co-Permittee

Contention: Petitioner contends that the Permit improperly named Michael Miller, its President/CEO, as a co-permittee along with the corporation. Petitioner alleges that the Permit applicant was Original Sixteen to One Mine, Inc., a California Corporation incorporated in 1911 and that Mr. Miller has not requested individual coverage under the Permit.

Findings: Petitioner's contention has merit. Unlike other orders issued by regional boards that determine liability for past actions, such as cleanup and abatement orders or administrative civil liability orders, NPDES permits are prospective in nature. NPDES permits are more of a shield requested by dischargers than a sword to be used by a regional board. The Clean Water Act and the Water Code are structured so that it is illegal to discharge pollutants from a point source except as authorized by an NPDES permit.²⁰ Discharging without an NPDES permit subjects a discharger to liability in excess of \$25,000 per day in certain circumstances.²¹ To shield themselves from this liability, dischargers seek the coverage of an NPDES permit, which protects them from liability for discharging pollutants as long as the discharge complies with the terms of the permit.

As we recently noted in Order WQO-2002-001 (Petition of Kelly Engineer), there is abundant case law to support liability of individual corporate officers, directors, and shareholders of corporations in certain circumstances.²² However, the established precedents

²⁰ See Water Code § 13376, §13385, and Clean Water Act § 301.

²¹ See Water Code § 13385.

²² In the Matter of Petition of Mr. Kelly Engineer/All Star Gasoline, Inc., Board Order WQO-2002-0001.

deal with enforcement actions and liability determinations - not permitting. At the permit issuance stage we believe it is premature to name individual corporate officers, directors, or shareholders as permittees without their consent.

Where the corporation violates a permit requirement, individual officer, director or shareholder liability can be direct and/or indirect if certain conditions are met. Liability may be direct if the evidence indicates that the individual, in any capacity, personally participated in the wrongful conduct or authorized or directed that it be done.²³

An individual shareholder of a corporation may be indirectly liable for wrongful corporate conduct when the evidence indicates the corporation was the mere "*alter ego*" of the shareholder. In such circumstances, courts have disregarded the separate existence of the corporation and "pierced the corporate veil" to reach the individual shareholder.²⁴ The courts typically apply the "*alter ego*" doctrine after considering various factors including whether: (1) the corporation is under-capitalized to meet its likely obligations, (2) there is a failure to observe a strict separation between corporate and shareholder assets, (3) the corporation appears to have been used as a shell to perpetrate fraud or injustice, and (4) the corporate officers have failed to observe other corporate formalities.²⁵

Although the cases cited in the Kelly Engineer State Board Order did not involve violations of NPDES permits, a recent 9th Circuit Court of Appeal case has confirmed that an individual may be personally responsible if he or she causes the corporation to violate its NPDES permit whether or not the individual is named as a permittee.²⁶ Additionally, in the criminal context, individuals are responsible for corporate Clean Water Act violations if the individual was a responsible corporate officer with the authority to exercise control over the corporation's activity even if the officer did not directly cause the violation.²⁷ This "responsible corporate

²³ *Id.*, at pp 4-5; see also *U.S. v. Bestfoods*, 524 U.S.51 (1998); *Wyatt v. Union Mortgage*, 24 Cal.3d 773, 784 (1979).

²⁴ See *Associated Vendors, Inc. v. Oakland Meat Co.*, 210 Cal.App.2d 825, 26 Cal.Rptr. 806 (1962); In the Matter of the Petitions of Arthur Spitzer, et al., State Board Order No. WQ 89-8 at p. 17.

²⁵ *Id.*

²⁶ See *U.S. v. Cooper*, 173 F.3d 1192 (1999).

²⁷ See *U.S. v. Iverson*, 162 F.3d 1015 (1998) and Clean Water Act § 309(c)(6); see also Water Code 13387(g), which adopts the Clean Water Act definition of person (including responsible corporate officers) for the purposes of criminal violations.

officer” doctrine is another type of indirect liability that applies to certain corporate officers. Although the Clean Water Act does not define the term “responsible corporate officer,” the courts have typically defined the term to mean an officer who had the authority to prevent the violation and failed to do so.²⁸

The Regional Board response to the petition argues that Mr. Miller is properly named as a co-permittee because as the President/CEO he is the on-site representative of the corporation and the day-to-day operations of the mine are under his authority. This reasoning indicates that the Regional Board is, in effect, extending the responsible corporate officer doctrine beyond the criminal context in which it is explicitly recognized in the Clean Water Act and Water Code and extending it to the permitting context. Although there are no cases directly on point, the Indiana State Supreme Court has considered a related issue by extending the responsible corporate officer doctrine to civil enforcement cases even where, as here, the applicable statute only explicitly authorizes such application to criminal enforcement.²⁹ There are no cases that apply the responsible corporate officer doctrine to the permitting context. Although we support the extension of the responsible corporate officer doctrine to civil matters, and believe the California courts would follow Indiana in this regard, we find that such an extension to the permitting process goes one step further than needed given the 9th Circuit *Cooper* precedent allowing enforcement actions against non-permittees for violations of NPDES permits.

Water Code section 13263(d) provides that a regional board may prescribe waste discharge requirements even when a report of waste discharge has not been filed.³⁰ Although section 13263(d) likely provides authority to name corporate officers, directors and shareholders to NPDES permits against their will where the facts discussed above support direct or indirect liability of these individuals, we find that reliance on this section to name such individuals in permits will provoke needless litigation at the permit issuance stage.

²⁸ See *U.S. v. Park*, 421 U.S. 658, 673-4 (1975); see also Joseph J. Ortego, Personal Liability for Environmental Infractions, 22 Real Est. L.J. 236, 239-241 (Winter 1994).

²⁹ See *Comm’r, Ind. Dept. of Env. Mgmt v. RLG, Inc.*, 755 N.E.2d 556 (Ind. 2001) and *BEC Corp. v. Dept. of Env. Protection*, 775 A.2d 928 (Conn. 2001).

³⁰ A report of waste discharge functions as a permit application when the waste discharge requirements also qualify as an NPDES permit, i.e., when there is a discharge of pollutants to waters of the U.S. from a point source.

Consequently, we conclude that Mr. Miller should not be named as co-permittee over his objection, but that he may, in the discretion of the Regional Board, be pursued individually for his direct actions that may violate the permit, or as a responsible corporate officer for his failure to prevent violations that are within his control. Such an action may be either civil or criminal as the facts may warrant. This approach will respect the presumption that liability is limited to the corporation, in this case liability for compliance with the terms of an NPDES permit, until evidence is produced in an enforcement action to support either direct or indirect liability of corporate officers, directors, or shareholders for specific violations.

B. Use of Low Grade Mill

Contention: Petitioner disputes any Permit requirement that is based on the Permit findings indicating that the low-grade mill is still in use.

Findings: The Regional Board response to the petition acknowledges that the low-grade mill is not now in use, but asserts that the effluent limits and monitoring requirements are justified whether or not the mill is used. The evidence in the record supports the Regional Board's position in this regard.

Wastewater is generated at the site by groundwater seepage that comes in contact with rock surfaces created by mining operations (tunneling, removal of gold and gold containing rock/ore, storage of tailings, etc.), and by milling operations that crush feed material. These operations expose groundwater seepage and process water to naturally occurring pollutants that would have otherwise been contained in the rock. Because the mining and milling operations use the same raw materials, it is expected that the wastewater generated by these operations would contain the same constituents. Therefore, treated low-grade mill wastewater should not introduce any new pollutants into the collected groundwater seepage, although it may increase the overall mass and/or concentration of existing pollutants. Because of Petitioner's failure to submit monitoring reports after 1998, the record does not include monitoring data for the milling operation or for the mine effluent when the mill is not in use.

As discussed below, the Regional Board has determined from the existing monitoring data that the mine has the reasonable potential to cause an exceedance of several water quality objectives and has assigned effluent limitations for the constituents of concern. Not operating the low-grade mill may affect the validity of the Regional Board's reasonable potential

analysis if a significant portion of a pollutant was generated by the mill. However, based on the evidence in the record and unless and until future monitoring data suggest otherwise, the Regional Board need not have changed any effluent limits or effluent monitoring requirements based on the late notification that the low-grade mill was no longer operating.

The Permit requires monitoring of the effluent from the 21 Tunnel Outfall, Kanaka Creek upstream and downstream of the discharge (receiving water monitoring), and the aboveground settling pond. Effluent monitoring at the 21 Tunnel Outfall is required to determine Petitioner's compliance with Permit limits, and it would be required whether or not the mill is in operation. Receiving water monitoring is required to develop a baseline for Kanaka Creek water quality and to monitor the development of any adverse impacts caused by the discharge. It, too, would be required whether or not the mill is in operation.

The only on-going monitoring program that would be affected by Petitioner's decision to cease operating the mill is the aboveground settling basin effluent monitoring program. Aboveground settling basin effluent is essentially treated wastewater from the milling operation. If the mill were no longer in operation and there were no discharge from the aboveground settling basins, then there would be no effluent to monitor. As the Regional Board response notes, Petitioner need only make a notation to this effect on its monitoring reports.

C. Monitoring Requirements

Contention: Petitioner alleges that the monitoring requirements established by the Permit are not reasonably necessary to evaluate compliance with the effluent and other Permit limits. Petitioner argues that much of the monitoring is unnecessary and overly burdensome given the relative threat posed by its discharge.

Findings: Petitioner's allegation has merit with respect to certain monitoring requirements. In accordance with 40 Code of Federal Regulations 122.44(d)(1), effluent limitations must be assigned if it is determined that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above numeric or narrative criteria. Monitoring is required for all pollutants that have been assigned effluent limitations.³¹ For such pollutants, requirements to report monitoring results must be established on a case-by-case basis

³¹ 40 C.F.R. 122.44(i).

with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year.³² The permit writer is responsible for determining an appropriate monitoring frequency for each constituent and the exact sampling location. Monitoring frequency considerations include size and design of the facility, type of treatment, discharge location, discharge frequency, compliance history, and pollutant nature (pollutant nature encompasses risks specific to each pollutant; for example: the pollutant's ability to spread in the environment and the potential it has to affect water quality). There are no processes at the 16 to 1 Mine, Inc. that require addition of chemicals, except for the mercury amalgamation process which is a closed system with respect to mercury, i.e., no mercury is supposed to be discharged from this system. The only on-site treatment operations are the settling ponds.

1. Effluent Monitoring

The effluent monitoring required by the Permit is as follows:

Flow	Daily
pH	Weekly
Temperature	Weekly
Dissolved Oxygen	Weekly
Electrical Conductivity @ 25 C	Weekly
Settleable Solids	Twice Monthly
Suspended Solids	Twice Monthly
Mercury	Monthly
Total and Dissolved Arsenic	Weekly
Aluminum, Barium, Copper, Cyanide, Iron, Manganese, Silver and Zinc	Quarterly
Acute Toxicity	Quarterly
Priority Pollutants	Twice Annually

For flow, pH, temperature, electrical conductivity, and suspended solids we find that this monitoring schedule is reasonable, given the above factors. For the remaining pollutants, a reduction in monitoring frequency is appropriate, as is provided in the following chart:

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³² *Id.*

Constituents (Effluent)	Regional Board Monitoring Frequency	Changes Required by this Order
Flow	Daily	
pH	Weekly	
Temperature	Weekly	
Dissolved Oxygen	Weekly	Twice Monthly
Electrical Conductivity	Weekly	
Settleable Solids	Twice monthly	Monthly
Suspended Solids	Twice monthly	
Mercury	Monthly	Quarterly
Total and Dissolved Arsenic	Weekly	Monthly
Aluminum, Barium, Copper, Cyanide, Iron, Manganese, Silver, and Zinc	Quarterly	Quarterly monitoring of Zinc and Copper. Monitoring of remaining constituents to be based on outcome of study.
Cadmium and Lead	None	Quarterly
Acute Toxicity	Quarterly	Twice annually
Three Species Chronic Toxicity	Twice annually	Change language to allow use of most sensitive species of the three, once established
Priority Pollutants	Twice annually	Once Every 5 years minimum, with any increase in frequency based on outcome of study.

The requirement to monitor priority pollutants in the effluent twice annually throughout the life of the Permit is excessive because it is reasonable to assume, based on the facility location, the source of the process water, and the industrial processes involved, that many of the priority pollutants will not be present in the wastewater. For example, it is not expected that the mine wastewater will contain endrin (insecticide); therefore, it would be excessive to require endrin monitoring twice per year in the event that it is not detected by priority pollutant scans required by the Implementation Policy. The Permit contains a time schedule for completing a comprehensive priority pollutant analysis in conformance with Implementation Policy Section 1.2. In addition to the priority pollutants, the Permit requires a study of aluminum, barium, cyanide, iron, manganese, silver, and zinc – some of which would also be included in the priority pollutant study. With the exception of cadmium, copper, lead, mercury, and zinc, for which regular monitoring is required by the NPDES mine regulations discussed in section H of this Order, the data generated in these reports should be sufficient to determine the

need for any additional effluent limitations and/or on-going monitoring for these pollutants. However, monitoring of all priority pollutants at least once prior to the issuance and re-issuance of a permit is required by Section 1.3 of the Implementation Policy.

2. Settling Basin Effluent Monitoring

The aboveground settling basin effluent monitoring required by the Permit is as follows:

Flow	Daily
pH	Weekly
Temperature	Weekly
Dissolved Oxygen	Weekly
Electrical Conductivity @ 25 C	Weekly
Settleable Solids	Twice Monthly
Suspended Solids	Twice Monthly
Mercury	Monthly
Total and Dissolved Arsenic	Weekly

Aboveground settling basin influent is wastewater generated by the mill. As discussed above, if there is no discharge from the aboveground settling basins, then according to the terms of the Permit, there is no effluent to monitor.

For the purposes of NPDES permit monitoring, the settling basin effluent appears to be an internal waste stream; i.e., a waste stream that is subject to further treatment before discharging to waters of the United States (typically surface waters). In general, monitoring of internal waste streams is not required under the federal NPDES regulations.³³ The federal regulations provide exceptions that allow regulation of internal waste streams if it is impractical to regulate a pollutant at the point of discharge to waters of the U.S.³⁴ This exception applies when it is necessary to allow detection of a pollutant. Instances may arise where the combination of process and non-process wastewaters result in dilution of a pollutant of concern that will not be detectable using approved analytical methods. In these circumstances, monitoring for the pollutant at an internal location will allow characterization of the pollutant prior to dilution with other wastewaters.

³³ See 40 C.F.R. 122.45(h).

³⁴ *Id.*

With respect to mercury, this exception applies to this facility for the following reasons:

- (1) It is expected that residual mercury is present in the soil and rock at the mine;
- (2) The residual mercury could be washed into the aboveground settling basins by storm water flows or process flows;
- (3) Mercury detection methods used by the facility have a method detection limit of 0.5 micrograms per liter ($\mu\text{g/l}$) whereas the effluent limitation assigned for mercury is 0.05 $\mu\text{g/l}$; and
- (4) It is possible that the groundwater seepage would dilute the aboveground settling basin effluent when mixed in the underground settling ponds (settling ponds within the mine tunnels that accept aboveground settling basin effluent and groundwater seepage). This dilution would make it difficult to detect mercury in the mine effluent even though it may be present in concentrations above the 0.05 $\mu\text{g/l}$ effluent limitation.

Although state law is more broad in terms of a regional board's authority to require monitoring, unless necessary to determine compliance with federally mandated effluent limits under Water Code section 13383, the monitoring must be reasonable under section 13267 and the benefits of the monitoring must outweigh the burdens. Here, if the low-grade mill were in operation, the information gained by sampling the aboveground settling basin effluent would not help Petitioner meet the federal requirement to characterize the types and amounts of pollutants discharged to Kanaka Creek (except for mercury as mentioned above). Aboveground settling basin effluent is commingled underground with groundwater seepage, allowed to settle further, and discharged through the 21 Tunnel Outfall, which is monitored under the effluent monitoring program. Consequently, the benefits of monitoring the aboveground settling basin effluent do not outweigh the burdens and should not be required (except for mercury).

This conclusion is based on surface water monitoring concerns - as this is an NPDES permit. If the Regional Board articulated a credible groundwater concern that justified pond effluent monitoring, then such monitoring would be appropriate. Additionally, the mercury monitoring frequency for the settling basin effluent may be appropriately reduced from monthly to quarterly to coincide with the mine effluent monitoring.

3. Receiving Water Monitoring

The receiving water monitoring required by the Permit is as follows:

Flow	Weekly
pH	Weekly
Temperature	Weekly
Dissolved Oxygen	Weekly
Electrical Conductivity @ 25 C	Weekly
Turbidity	Weekly
Total and Dissolved Arsenic	Weekly
Mercury	Weekly
Priority Pollutants	Annually
Aluminum, Barium, Copper, Cyanide, Iron, Manganese, Silver and Zinc	Annually

As discussed above in the context of effluent monitoring, we find that the requirement to monitor all priority pollutants in the receiving water annually throughout the life of the Permit is unreasonable. Considering the factors outlined above, the remaining monitoring requirements are reasonably necessary to evaluate the effects of the discharge on Kanaka Creek, according to the following schedule:

Constituents (Receiving Water)	Regional Board Monitoring Frequency	Changes Required by this Order
Flow	Weekly	
pH	Weekly	
Temperature	Weekly	
Dissolved Oxygen	Weekly	Twice Monthly
Electrical Conductivity	Weekly	
Turbidity	Weekly	
Total and Dissolved Arsenic	Weekly	Monthly
Mercury	Monthly	Semiannually
Aluminum, Barium, Copper, Cyanide, Iron, Manganese, Silver, and Zinc	Annually	Monitoring frequency to be based on outcome of study.
Priority Pollutants	Annually	Once Every 5 years minimum, with any increase in frequency based on outcome of study.

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4. Regional Board Guidance

With the reductions in monitoring frequency that are required by this Order, this Board has exercised its policy discretion to accommodate what Petitioner has fairly characterized as a marginal operation that will continue to discharge pollutants to Kanaka Creek, whether or not Petitioner stays in business. It is for this reason that this Board has reviewed in detail such provisions as monitoring requirements that are normally considered to be within the broad discretion of the Regional Board to establish as it deems appropriate. Having performed this detailed review and having established the minimum monitoring requirements appropriate for this discharge, we expect Petitioner to comply with its Permit. Consequently, we will support any Regional Board enforcement action to encourage compliance that is consistent with the State Board's Enforcement Policy.

D. Dilution Credit

Contention: Petitioner alleges that the evidence supports allowance of a dilution credit for its discharge. The Regional Board disagreed, finding that Kanaka Creek lacked assimilative capacity for various pollutants and was, in general, a low flow stream in summer months that did not provide sufficient dilution to justify a dilution credit.

Findings: The Regional Board determination was appropriate. The Regional Board has stated that insufficient data are available to determine whether or not Kanaka Creek contains sufficient assimilative capacity to warrant a dilution credit.³⁵ This statement is supported by the record because Petitioner has not complied with the monitoring program under the previous permit. There are missing data for required monitoring periods during 1991-1998, and no required monitoring was submitted after December 1998. The conditions of the effluent and the receiving water could have significantly changed since December 1998. Thus, the Regional Board cannot evaluate the current flow rate of Kanaka Creek or the water quality of Kanaka Creek and the effluent.

Section 1.4.2.2(B) of the Implementation Policy gives the Regional Board broad discretion to deny or significantly limit a dilution credit as necessary to protect beneficial uses. In the absence of current flow data, the Regional Board has properly denied a dilution credit to

³⁵ See Finding No. 14 of the Permit.

protect beneficial uses. Additionally, Section 1.4.2.2(B) of the Implementation Policy requires the Regional Board to consider the presence of pollutants in the discharge that are carcinogenic and/or bioaccumulative. The discharge at the 16 to 1 Mine, Inc. has been shown to contain arsenic (a known carcinogen) and also mercury, which is bioaccumulative. The Regional Board's refusal to grant dilution credits is in accordance with Implementation Policy Section 1.4.2.2(B) based on the nature of these pollutants, the range of beneficial uses for Kanaka Creek that must be protected, and the failure of Petitioner to submit reports proving that assimilative capacity exists for these pollutants.

Receiving water monitoring required by previous waste discharge requirements has shown elevated arsenic background concentrations (greater than the 10 µg/L limit in the Permit). In addition, a portion of Kanaka Creek is listed as impaired due to arsenic on the section 303(d) list. The discharger monitoring data and CWA section 303(d) listing have shown that there is no available assimilative capacity for arsenic in Kanaka Creek.

E. Mercury Usage

Contention: Petitioner objects to various mercury requirements because it alleges that the only mercury used on-site is in a closed system.

Findings: Finding No. 15(d) of the Permit and Petitioner's comments on the Permit, dated February 14, 2002, include a discussion explaining that mercury is currently used in a "closed system." Even though this system is designed to prevent any mercury discharge, there is still a threat that a release may occur or may be occurring. In addition, the Regional Board has correctly determined that mercury could still be present at the site from past operations. The threat that past and present use of mercury poses to water quality justifies the need for effluent limits, monitoring requirements, and the required mercury study.

In May 1996, a mercury concentration of 0.5 µg/L was detected in the 16 to 1 Mine, Inc. effluent. In the absence of any available dilution, an effluent mercury concentration of 0.5 µg/L has the reasonable potential to cause an exceedance of the CTR human health criterion of 0.05 µg/L. Accordingly, 40 Code of Federal Regulations 122.44(d)(1) states that when a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above allowable numeric criteria for an individual pollutant, the NPDES permit must contain an effluent limit. Additionally, Implementation Policy Section 1.3 requires an effluent limitation

where, as here, the maximum observed pollutant concentration in the effluent (0.5 ug/l) exceeds the applicable water quality objective (0.05 ug/l). Consequently, whether or not mercury is currently used on-site, 40 Code of Federal Regulations 122.44(d)(1) and the Policy require that mercury be assigned an effluent limitation, and 40 Code of Federal Regulations 122.41(i) requires that the Permit include mercury monitoring requirements.

F. Monitoring Data

Contention: Petitioner alleges that the Regional Board did not consider all of the monitoring data available when it adopted the Permit. The Regional Board response acknowledges that some of the available monitoring data was either submitted too late to be considered or was otherwise overlooked when the Permit was adopted. The Regional Board response includes an analysis of the supplemental data and concludes that no change to the Permit is warranted.

Findings: The Regional Board's conclusion is supported by the evidence. The data supplied by Petitioner that were left out by the Regional Board when drafting the Permit supplements the existing data set, but do not change the outcome of the Regional Board reasonable potential analysis or the decision to deny dilution. The reasonable potential analysis uses highest recorded data for pollutant concentrations, and additional data cannot change the concentrations already recorded.

G. Bioassay Finding

Contention: Petitioner alleges that the Permit describes the results of the sole bioassay performed by Petitioner as having 100% mortality when the actual result was 100% survival.

Findings: This appears to be a case of miscommunication between Petitioner and the Regional Board, since the bioassay report summary submitted by Petitioner to the Regional Board merely indicated a result of "100%" without specifying survival or mortality. We have reviewed a copy of the original laboratory report prepared for Petitioner and agree that the bioassay result in question is "100% survival." Permit Finding 16(e) will be revised accordingly by this Order.

H. Best Available Technology (BAT) Effluent Limitations For Mines

Although this issue was not raised by Petitioner or the Regional Board, we note that best available technology (BAT) effluent limitations for mines contained in 40 Code of Federal Regulations 440.103 must be included in the Permit. BAT effluent limitations for copper, zinc, lead, mercury, and cadmium are required for mines that produce gold bearing ores from open-pit or underground operations. The Permit already contains a water quality based effluent limitation for mercury, but it does not assign technology based effluent limitations for copper, zinc, lead, and cadmium. The Permit will be revised to include these BAT effluent limitations.

III. CONCLUSIONS

1. At the permit issuance stage it is premature to name individual corporate officers, directors, or shareholders as permittees without their consent.
2. The Regional Board need not have changed any effluent limits or effluent monitoring requirements based on the late notification that the low-grade mill was no longer operating.
3. The effluent and receiving water monitoring program for flow, pH, temperature, electrical conductivity, and suspended solids is reasonable, but a reduction in monitoring frequency is appropriate for the remaining pollutants.
4. As an internal waste stream, and with the exception of mercury, it was unreasonable to require monitoring of pond effluent.
5. The Regional Board properly denied dilution credit.
6. It was appropriate for the Regional Board to require mercury effluent limits and monitoring and a mercury study.
7. The data supplied by Petitioner that were left out by the Regional Board when drafting the Permit do not change the outcome of the reasonable potential analysis or the decision to deny dilution.
8. Permit Finding 16(e), referring to a bioassay result of 100% mortality must be revised to indicate 100% survival.
9. BAT effluent limitations for mines contained in 40 Code of Federal Regulations 440.103 must be included in the Permit.

IV. ORDER

IT IS HEREBY ORDERED THAT Regional Board Order No. R5-2002-0043 [NPDES No. CA0081809] is amended as follows:

1. Revise Finding 1 to read as follows: "The Original Sixteen to One Mine, Inc. ~~and Michael Miller~~ (hereafter Discharger) submitted a Report of"

2. On page 17 revise the Order section as follows: "IT IS HEREBY ORDERED that Order No. 95-004 is rescinded ~~and Michael Miller~~ and the Original Sixteen to One Mine, Inc., its agents,"

3. Revise Finding 16(e) as follows: ". . . the Discharger reported the results of only one bioassay of undiluted effluent, which had 100% ~~mortality~~ survival, ~~in violation of the~~ The effluent limitation requirements 70% survival in one bioassay and a median of 90% survival in three or more consecutive bioassays. ~~In addition,~~ The existing Order required the Discharger to conduct quarterly Acute Toxicity tests"

4. Add a new Finding 15(i) following Finding 15(h): "i. Federal NPDES regulations, set forth at 40 CFR 440.103, require best available technology (BAT) effluent limitations for copper, zinc, lead, mercury, and cadmium for mines, such as the Sixteen to One Mine, Inc., that produce gold bearing ores from underground operations. The mercury limit included in this permit is more stringent than the BAT limit because a more stringent limit is needed to ensure that the discharge does not cause or contribute to a violation of the water quality objective for mercury."

5. On page 18, amend Effluent Limitation B.1 to add the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Cadmium	mg/l	0.05	0.10
Copper	mg/l	0.15	0.30
Lead	mg/l	0.3	0.6
Zinc	mg/l	0.75	1.5

IT IS FURTHER ORDERED THAT Monitoring and Reporting Program No. R5-2002-0043 is revised as follows:

1. On page 1, delete all settling basin effluent monitoring except for mercury. For mercury sampling frequency, delete "Monthly" and replace with "Quarterly."

2. On page 2, for Dissolved Oxygen sampling frequency, delete “Weekly” and replace with “Twice Monthly.”

3. On page 2, for Settleable Solids sampling frequency, delete “Twice Monthly” and replace with “Monthly.”

4. On page 2, for Mercury sampling frequency, delete “Monthly” and replace with “Quarterly.”

5. On page 2, for Total and Dissolved Arsenic sampling frequency, delete “Weekly” and replace with “Monthly.”

6. On page 2, amend the tenth and eleventh lines of the Effluent Monitoring Table, which applies to various metals and Cyanide, by deleting Aluminum, Barium, Cyanide, Iron, Manganese, and Silver and adding Cadmium and Lead to the list of metals for which quarterly monitoring is required.

7. On page 2, for Acute Toxicity sampling frequency, delete “Quarterly” and replace with “Twice Annually.”

8. On page 2, amend the last line of the Effluent Monitoring Table, which applies to Priority Pollutants, by deleting the Sampling Frequency indicating “Twice Annually” and replacing the deleted text with a new footnote 3 to read as follows: “Priority Pollutant monitoring shall be performed once per permit cycle within one year of the expiration date of Waste Discharge Requirements Order No. R5-2002-0043 [NPDES No. CA0081809].”

9. On page 3, for Dissolved Oxygen sampling frequency, delete “Weekly” and replace with “Twice Monthly.”

10. On page 3, for Total and Dissolved Arsenic sampling frequency, delete “Weekly” and replace with “Monthly.”

11. On page 3, for Mercury sampling frequency, delete “Monthly” and replace with “Semi-annually.”

12. On page 3, amend the ninth line of the Receiving Water Monitoring Table, which applies to Priority Pollutants, by deleting the Sampling Frequency indicating “Annually” and replacing the deleted text with a new footnote 2 to read as follows: “Priority Pollutant monitoring shall be performed once per permit cycle within one year of the expiration date of Waste Discharge Requirements Order No. R5-2002-0043 [NPDES No. CA0081809].”

13. On page 3, delete the tenth through twelfth lines of the Receiving Water Monitoring Table, which apply to various metals and Cyanide.

14. On page 4, add the following footnote following the reference to *Selanastrum capricornutum*: "If testing demonstrates, to the satisfaction of the Executive Officer, that one of these three species is consistently the most sensitive, testing may be reduced to the most sensitive species.

IT IS FURTHER ORDERED THAT the petition of the Original Sixteen to One Mine, Inc., is otherwise denied.

CERTIFICATION

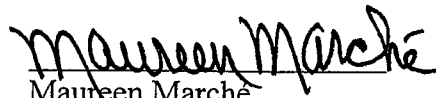
The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on April 30, 2003.

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

NO: None

ABSENT: Gary M. Carlton

ABSTAIN: None


Maureen Marché
Clerk to the Board