CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER NO. R5-2013-0701

FOR

MOUNT DIABLO MERCURY MINE
CONTRA COSTA COUNTY

This Order is issued to Jack and Carolyn Wessman; the Bradley Mining Co.; the U.S. Department of Interior; Sunoco, Inc.; Mt. Diablo Quicksilver, Co.; Ltd., Kennametal Inc. and the California Department of Parks and Recreation (hereafter collectively referred to as Dischargers) pursuant to California Water Code section 13303 which authorizes the Central Valley Regional Water Quality Control Board (Central Valley Water Board or Board) to issue a Cleanup and Abatement Order (Order) and CWC section 13267, which authorizes the Executive Officer to issue Orders requiring the submittal of technical reports, and CWC section 7, which authorizes the delegation of the Executive Officer's authority to a deputy, in this case the Assistant Executive Officer.

The Executive Officer finds:

BACKGROUND

1. The Mount Diablo Mercury Mine (Mine Site) is an inactive mercury mine. The Mine is located on the northeast slope of Mount Diablo in Contra Costa County. The Mine and historic working areas are on 80 acres southwest of the intersection of Marsh Creek Road and Morgan Territory Road. The Mine site is adjoined on the south and west by the Mount Diablo State Park and on the north and east by Marsh Creek Road and Morgan Territory Road.

2. The Mine Site consists of an exposed open cut and various inaccessible underground shafts, adits, and drifts. Extensive waste rock piles and mine tailings cover the hill slope below the open cut, and several springs and seeps discharge from the tailings-covered area. Three surface impoundments at the base of the tailings capture most spring flow and surface runoff.

3. Acid mine drainage containing elevated levels of mercury and other metals is being discharged to Pond 1, an unlined surface impoundment that periodically overflows discharging contaminants into Horse and Dunn Creeks. Horse and Dunn Creeks are tributaries to Marsh Creek which drains to the San Francisco Bay.

4. Section 303(d) of the Federal Clean Water Act requires states to identify waters not attaining water quality standards (referred to as the 303(d) list). Dunn Creek, located below Mount Diablo Mine, and Marsh Creek, located below Dunn Creek, have been

identified by the Central Valley Water Board as an impaired water bodies because of high aqueous concentrations of mercury and metals.

5. It is the policy of the State Water Board, and by extension the Central Valley Water Board, that every human being has the right to safe, clean, affordable and accessible water adequate for human consumption, cooking, and sanitary purposes. Dunn Creek and Marsh Creek may impact municipal drinking supply in the area. The current site conditions may constitute a threat to municipal drinking supply beneficial use. Therefore, the Water Board is authorized to protect such uses pursuant to section 106.3 of the Water Code.

OWNERSHIP AND OPERATOR HISTORY

6. Jack and Carolyn Wessman have owned the Mine Site from 1974 to the present. The Wessmans have made some improvements to reduce surface water exposure to tailings and waste rock, including the construction of a cap over parts of the tailings/waste rock piles. Although these improvements have been made without an engineering design or approved plan, these improvements may have reduced some of the impacts from the Mine Site. However, discharges that contain elevated mercury levels continue to impact the Mine Site and site vicinity.

7. A portion of the mine tailings are located on land owned by Mount Diablo State Park. The California Department of Parks and Recreation is named as a Discharger in this Order. The California Department of Parks and Recreation has conducted activities on the property related to surveying and possible fence line adjustments.

8. The mine was discovered by a Mr. Welch in 1863 and operated intermittently until 1877. The Mine reopened in 1930 and was operated until 1936 by the Mt. Diablo Quicksilver Co., Ltd. producing an estimated 739 flasks of mercury. Mt. Diablo Quicksilver no longer exists.

9. Although Mt. Diablo Quicksilver no longer exists, it is named as a Discharger in this order because it likely has undistributed assets, including, without limitation, insurance assets held by the corporation that may be available in response to this order.

10. Bradley Mining Company leased the Mine from Mt. Diablo Quicksilver and operated from 1936 to 1947, producing around 10,000 flasks of mercury. During operations Bradley Mining Company developed underground mine workings, discharged mine waste rock, and generated and discharged ore tailings containing mercury.

11. In 2008 the United States of America, on behalf of the Administer of the United States Environmental Protection Agency (EPA), filed a complaint pursuant to section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act, against Bradley Mining Company and Frederick Bradley in his representative capacity as Trustee of the Worthen Bradley Family Trust (Bradley). Prior to the suit the EPA had identified Bradley Mining as a potentially responsible party for the remediation of the Mount Diablo Mercury Mine Site. The complaint filed by the EPA and DOJ sought reimbursement and

damages associated with various sites, including the Mount Diablo Mercury Mine Site in Contra Costa County, California.

12. In 2012 the EPA and Bradley Mining Company and Frederick Bradley in his representative capacity as Trustee of the Worthen Bradley Family Trust entered into a settlement for all sites set forth in the complaint. Under the terms of the Consent Decree $50,500 of the funds Bradley received from insurance was allocated to the Mt Diablo Mercury Mine Site, along with 10 percent of future payments made that were linked to Bradley's future income.

13. The Bradley Mining Company still exists, although it claims that it has limited resources and the resources it has are mostly tied up in environmental actions at other former mines. Bradley Mining Company is a named Discharger in this Order.

14. Ronnie B. Smith and partners leased the mine from Mt. Diablo Quicksilver from 1951 to 1954 and produced approximately 125 flasks of mercury by surface mining (open pit mining methods). Successors to the Smith et al. partnership have not been identified and are not named as Dischargers in this Order.

15. In 1953, the Defense Minerals Exploration Administration (DMEA) granted the Smith, et al. partners a loan to explore for deep mercury ore. The DMEA was created to provide financial assistance to explore for certain strategic and critical minerals. The DMEA contracted with private parties to operate the Mine Site under cost-sharing agreements from 1953 to 1954. The DMEA was a Federal Government Agency in the US Department of the Interior and is named as a Discharger in this Order.

16. John L. Jonas and John E. Johnson assumed the DMEA contract in 1954, producing 21 flasks of mercury in less than one year. Their successors have not been found and they are not named Dischargers in this Order.

17. The Cordero Mining Company operated the Mine Site from approximately 1954 to 1956, and was responsible for sinking a shaft, driving underground tunnels that connected new areas to pre-existing mine workings, and discharging mine waste. There is no record of mercury production for this time period and the amount of mercury production, if any, from this time period is unknown. The United States Environmental Protection Agency (USEPA), Region IX, named Sunoco Inc. a responsible party for Mount Diablo Mercury Mine in the Unilateral Administrative Order for the Performance of a Removal Action, USEPA Docket No. 9-2009-02, due to its corporate relationship to the Cordero Mining Company. Sunoco Inc. is a named Discharger in this Order.

18. Nevada Scheelite Corporation, a subsidiary of Kennametal Inc., leased from Mount Diablo Quicksilver and operated the mine in 1956. Minutes of a 25 March 1956 Mount Diablo Quicksilver Co Directors' Meeting with managers representing Nevada Scheelite Corporation discuss Nevada Scheelite's lease and operations at the mine. Nevada Scheelite apparently operated an unidentified part to the mine from 1956 to 1958. At one point, downstream landowners objected to Nevada Scheelite's discharge of acid mine drainage and that part of the operation was suspended. The amount of production for this

period is uncertain. At the time of Nevada Scheelite's lease, it was a wholly owned subsidiary of Kennametal Inc. with its headquarters in Latrobe Pennsylvania. Because of its ownership and control of Nevada Scheelite, Kennametal Inc. is named a Discharger in this Order.

19. Victoria Resources Corp. owned the Mount Diablo Mine from 1960 to 1969. The extent of operations and the amount of production for this period is unknown. However, discharges have occurred from runoff from the mine waste piles and likely springs associated with the mine working. Victoria Resources Corp. no longer exists under that name, Technical Reporting Order No. R5-2009-0870 was issued to Victoria Gold Corp. on December 1, 2009, requiring submittal of a report describing the extent of Victoria Resources activities at the mine. Victoria Gold Corp. notified the Board that they have no relationship to Victoria Resources Inc. Research into the corporate evolution of Victoria Resources Inc. is ongoing.

20. The Guadalupe Mining Company owned the Mine site from 1969 to 1974. The extent of operations and amount of production for this period is unknown. However, discharges have occurred from runoff from the mine waste piles and likely springs associated with the mine working. Guadalupe Mining Company no longer exists and efforts to trace a corporate successor have been unsuccessful.

INVESTIGATIONS

21. In 1989, a technical investigation by JL Lovenitti used historical data and focused on Pond 1. The report characterized Pond 1 chemistry, its geohydrochemical setting, the source of contaminants, remedial alternatives and preliminary remediation cost estimates. The report documents acidic conditions and elevated concentrations of mercury, lead, arsenic, zinc, and copper that are greater than primary drinking water standards.

22. Between 1995 and 1997, a baseline study of the Marsh Creek Watershed was conducted by Prof. Darrell Slotton for Contra Costa County. The study concluded that the Mount Diablo Mercury Mine and specifically the exposed tailings and waste rock above the existing surface impoundment are the dominant source of mercury in the watershed.

23. Technical Reporting Order No. R5-2009-0869 was issued on 1 December 2009 to the Dischargers that had been identified at that time, Jack and Carolyn Wessman, Bradley Mining Co, US Department of the Interior, and Sunoco Inc. The Order required the Dischargers to submit a Mining Waste Characterization Work Plan by 1 March 2010 and a Mining Waste Characterization Report by 1 September 2010.

24. On 3 August 2010 Sunoco submitted a Characterization Report in partial compliance of Order No. R5-2009-0869. The report presented results of Sunoco's investigation to date, summarized data gaps and proposed future work to complete site characterization. Sunoco Inc. is the only party making an effort to comply with the Order.

25. The Characterization Report concludes that most mercury contamination in the Marsh Creek Watershed originates from the Mount Diablo Mine, is leached from mining waste and discharged via overland flow to the Lower Pond (Pond 1) and Dunn Creek.

26. Various investigations have sampled surface water discharging from the mine site. Sunoco submitted a Characterization Report that includes data from two sampling events conducted in the Spring of 2010. In addition, at the end of 2011 Sunoco submitted an Additional Characterization Report that includes data from up to five sampling events. The following summarizes results from the Characterization Report:

Constituent	Water Quality Goal (MCL)	Background(2)	Mine Waste(3)	Pond 1(4)	Dunn Creek Downstream(5)
TDS (mg/L)	500 - 1500	225.5	8056	6960	337.5
Sulfate (mg/L)	500	24.5	5660	5465	70.5
Mercury (ug/L)	2	<0.20(1)	97.6	91	0.69
Chromium (ug/L)	50	<5(1)	781.6	22.5	14
Copper (ug/L)	1300	5	202.2	46.5	14
Nickel (ug/L)	100	<5(1)	25224	13900	213.5
Zinc (ug/L)		10.5	693.4	351.5	22

(1) Non-detect result, stated value reflects the method detection limit.
(2) Average of two samples collected from My Creek and Dunn Creek above the mine site.
(3) Average of five surface water samples collected immediately below the tailings/waste rock piles.
(4) Average of two samples collected from Pond 1, the settling pond located at the base of the tailings/waste rock piles.
(5) Average to two samples collected from Dunn Creek downstream of the mine site.

27. The limited population of recent samples summarized in Finding 26 above demonstrates that water draining from the mine waste, collected in Pond 1 and in Dunn Creek downstream of the mine all have been impacted by increased concentrations of salts and metals including mercury. Dunn Creek drains into Marsh Creek. The 1997 Slotton study concluded that Mount Diablo Mercury Mine was the major source of mercury in the Marsh Creek, the Sunoco study confirms the Slotton results.

LEGAL PROVISIONS

28. Section 303(d) of the Federal Clean Water Act requires states to identify waters not attaining water quality standards (referred to as the 303(d) list). Dunn Creek from Mount Diablo Mine to Marsh Creek and Marsh Creek below Dunn Creek have been identified by the Central Valley Water Board as an impaired water bodies because of high aqueous concentrations of mercury and metals.

29. The Central Valley Regional Board is in the process of writing Total Daily Maximum Loads (TMDLs) for Dunn Creek and Marsh Creek.

30. The Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4th Edition* (Basin Plan) designates beneficial uses of the waters of the State, establishes water quality objectives (WQOs) to protect these uses, and establishes implementation policies to implement WQOs. The designated beneficial uses of Marsh Creek, which flows into Sacramento and San Joaquin Delta are domestic, municipal, industrial and agricultural supply.

31. The beneficial uses of underlying groundwater, as stated in the Basin Plan, are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

32. Under CWC section 13050, subdivision (q)(1), "mining waste" means all solid, semisolid, and liquid waste materials from the extraction, beneficiation, and processing of ores and minerals. Mining waste includes, but is not limited to, soil, waste rock, and overburden, as defined in Public Resources Code section 2732, and tailings, slag, and other processed waste materials...." The constituents listed in Finding No.21 are mining wastes as defined in CWC section 13050, subdivision (q)(1).

33. Because the site contains mining waste as described in CWC sections 13050, closure of Mining Unit(s) must comply with the requirements of California Code of Regulations, title 27, sections 22470 through 22510 and with such provisions of the other portions of California Code of Regulations, title 27 that are specifically referenced in that article.

34. Affecting the beneficial uses of waters of the state by exceeding applicable WQOs constitutes a condition of pollution as defined in CWC section 13050, subdivision (1). The Discharger has caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution or nuisance.

35. CWC section 13304(a) states that: *"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a Regional Water Board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the Regional Water Board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a Regional Water Board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the*

request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

36. The State Water Resources Control Board (State Board) has adopted Resolution No. 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under CWC Section 13304*. This Resolution sets forth the policies and procedures to be used during an investigation or cleanup of a polluted site and requires that cleanup levels be consistent with State Board Resolution No. 68-16, the *Statement of Policy With Respect to Maintaining High Quality of Waters in California*. Resolution No. 92-49 and the Basin Plan establish cleanup levels to be achieved. Resolution No. 92-49 requires waste to be cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with California Code of Regulations, title 23, section 2550.4. Any alternative cleanup level to background must: (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Board.

37. Chapter IV of the Basin Plan contains the *Policy for Investigation and Cleanup of Contaminated Sites*, which describes the Central Valley Water Board's policy for managing contaminated sites. This policy is based on CWC sections 13000 and 13304, California Code of Regulations, title 23, division 3, chapter 15; California Code of Regulations, title 23, division 2, subdivision 1; and State Water Board Resolution Nos. 68-16 and 92-49. The policy addresses site investigation, source removal or containment, information required to be submitted for consideration in establishing cleanup levels, and the basis for establishment of soil and groundwater cleanup levels.

38. The State Board's Water Quality Enforcement Policy states in part: "At a minimum, cleanup levels must be sufficiently stringent to fully support beneficial uses, unless the Central Valley Water Board allows a containment zone. In the interim, and if restoration of background water quality cannot be achieved, the Order should require the discharger(s) to abate the effects of the discharge (Water Quality Enforcement Policy, p. 19)."

39. CWC section 13267 states, in part:

> *"(b)(1) In conducting an investigation, the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

As described in Findings Nos. 5 – 14, the Dischargers are named in this Order because all have discharged waste at the Mine Site through their actions and/or by virtue of their ownership of the Mine Site. The reports required herein are necessary to formulate a plan to remediate the wastes at the Mine Site, to assure protection of waters of the state, and to protect public health and the environment.

40. CWC section 13268 states, in part:

(a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267 . . . or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with Section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs.

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(c) Any person discharging hazardous waste, as defined in Section 25117 of the Health and Safety Code, who knowingly fails or refuses to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, or who knowingly falsifies any information provided in those technical or monitoring program reports, is guilty of a misdemeanor, may be civilly liable in accordance with subdivision (d), and is subject to criminal penalties pursuant to subdivision (e).

(d)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with Section 13323) of Chapter 5 for a violation of subdivision (c) in an amount which shall not exceed five thousand dollars ($5,000) for each day in which the violation occurs.

As described above, failure to submit the required reports to the Central Valley Water Board according to the schedule detailed herein may result in enforcement action(s) being taken against you, which may include the imposition of administrative civil liability pursuant to CWC section 13268. Administrative civil liability of up to $5,000 per violation per day may be imposed for non-compliance with the directives contained herein.

IT IS HEREBY ORDERED that, pursuant to California Water Code section 13304 and 13267, the Dischargers, their agents, successors, and assigns, shall investigate the discharges of waste, clean up the waste, and abate the effects of the waste, within 30 days of entry of this order, from Mount Diablo Mercury Mine (Mine Site). The work shall be completed in conformance with California Code of Regulations, title 27, sections 22470 through 22510, State Board Resolution No. 92-49 and with the Regional Water Board's Basin Plan (in particular the Policies and Plans listed within the Control Action Considerations portion of Chapter IV), other applicable state and local laws, and consistent with HSC Division 20, chapter 6.8. Compliance with this requirement shall include, but not be limited to, completing the tasks listed below.

1. **The Discharger shall submit the following technical reports:**
   a. **By 30 June 2013**, form a respondents group to manage and fund remedial actions at the Mount Diablo Mine Site or independently take liability to implement the remedial actions in this Order. On or before the **30 June 2013** submit a letter or report on any agreement made between the responsible parties. If no agreement is made between the parties, then submit a document stating no agreement has been made. Any agreement shall include all the signatures of the responsible parties agreeing to the respondents group.

   b. **By 1 October 2013,** submit a Work Plan and Time Schedule to close the mine tailings and waste rock piles in compliance with California Code of Regulations, title 27, sections 22470 through 22510 and to remediate the site in such a way to prevent future releases to surface and ground waters of Mercury and other Pollutants.

   c. **Beginning 90 Days after Regional Board approval of the Work Plan and Time Schedule,** submit regular quarterly reports documenting progress in completing remedial actions.

2. **By 31 December 2015,** complete all remedial actions and submit a final construction report.

3. Any person signing a document submitted under this Order shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

4. Pursuant to Section 13304(c)(1), the Discharger shall reimburse the Regional Water Board for reasonable costs associated with oversight of the cleanup of the sites subject to this Order. Failure to do so upon receipt of a billing statement from the State Water Board shall be considered a violation of this Order.

REPORTING

5. When reporting data, the Dischargers shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order.

6. Fourteen days prior to conducting any fieldwork, submit a Health and Safety Plan that is adequate to ensure worker and public safety during the field activities in accordance with California Code of Regulations, title 8, section 5192.

7. As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional or their subordinate and signed by the registered professional.

8. All reports must be submitted to the Central Valley Water Board. Electronic copies of all reports and analytical results are to be submitted over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) at http://geotracker.swrcb.ca.gov. Electronic copies are due to GeoTracker concurrent with the corresponding hard copy. Electronic submittals shall comply with GeoTracker standards and procedures as specified on the State Water Board's web site.

9. Notify Central Valley Water Board staff at least five working days prior to any onsite work, testing, or sampling that pertains to environmental remediation and investigation and is not routine monitoring, maintenance, or inspection.

NOTIFICATIONS

10. No Limitation on Central Valley Water Board Authority-This Order does not limit the authority of the Central Valley Water Board to institute additional enforcement actions and/or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised by the Executive Office or her delegate as additional information becomes available.

11. Enforcement Notification-Failure to comply with requirements of this Cleanup and Abatement Order may subject the Discharger to additional enforcement action, including, but not limited to, the imposition of administrative civil liability pursuant to Water Code sections 13268 and 13350, or referral to the Attorney General of the State of California for injunctive relief or civil or criminal liability. Pursuant to Water Code section 13350, $5,000 in administrative civil liability may be imposed for each day in which the violation(s) occurs under Water Code section 13304; and pursuant to Water Code section 13268, $1,000 in administrative civil liability may be imposed for each day in which the violation(s) occurs under Water Code section 13267.

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

Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

This Order is effective upon the date of signature.

Order by:

Original signed by

PAMELA C. CREEDON, Executive Officer

16 April 2013

(Date)