

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2018-0019

AMENDING TIME SCHEDULE ORDER R5-2015-0035
(NPDES PERMIT CA0081809)

ORIGINAL SIXTEEN TO ONE MINE, INC.
SIXTEEN TO ONE MINE
SIERRA COUNTY

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

1. Original Sixteen to One Mine, Inc. (Discharger), owns and operates the Sixteen to One Mine (Mine). The Mine discharges up to 0.28 million gallons per day of untreated mining wastewater to Kanaka Creek, a water of the United States and tributary to the Middle Yuba River.
2. On 5 February 2015, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopted Waste Discharge Requirements (WDRs) Order R5-2015-0002, an NPDES Permit prescribing waste discharge requirements for the Mine and including final effluent limitations for EC, antimony, arsenic, cadmium, copper, iron, lead, manganese, and nickel. Minor modifications were made to WDRs Order R5-2015-0002 in a letter dated 10 September 2015.
3. On 17 April 2015, the Central Valley Water Board adopted Time Schedule Order (TSO) R5-2015-0035 prescribing interim effluent limitations for EC, antimony, arsenic, cadmium, copper, iron, lead, manganese, and nickel and including a compliance schedule for compliance with the final limitations.
4. TSO R5-2015-0035 cited incorrect final effluent limitations from WDRs Order R5-2015-0002. This Order revises TSO R5-2015-0035 to correct the typographical errors and to cite the correct final effluent limitations.
5. At the time that the Central Valley Water Board adopted TSO R5-2015-0035, the most recent water quality data for the Mine discharge consisted of two sampling events conducted by Central Valley Water Board staff in 2011. Interim limitations were established based on a limited dataset. Since adoption of WDRs Order R5-2015-0002 in February 2015, the Discharger has conducted 10 quarterly effluent monitoring events.
6. This Order revises the interim effluent limitations to better represent variability of the discharge. The revised interim effluent limitations are based on the current and more robust dataset collected after adoption of TSO R5-2015-0035 in April 2015.
7. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to Water Code section 13389, since the adoption or modification of an NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit. (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).
8. On 6 April 2018, in Fresno, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider amending TSO R5-2015-0035.

IT IS HEREBY ORDERED THAT pursuant to CWC Sections 13301 and 13267, TSO R5-2015-0035 is amended as shown in underline/strikeout format in Attachment I to correct typographical errors and contain amended interim effluent limitations and associated language. The compliance schedule in TSO R5-2015-0035-01 remains unchanged. This Order is effective upon adoption.

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

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **6 April 2018**.

Original signed by

PAMELA C. CREEDON, Executive Officer

ATTACHMENT I

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

TIME SCHEDULE ORDER R5-2015-0035-01
REQUIRING

ORIGINAL SIXTEEN TO ONE MINE, INC.
SIXTEEN TO ONE MINE
SIERRA COUNTY

TO COMPLY WITH
WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-0002
(NPDES PERMIT NO. CA0081809)

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

1. Original Sixteen to One Mine, Inc. (Discharger), owns and operates the Sixteen to One Mine (Mine). The Mine discharges up to 0.28 million gallons per day (mgd) of mining wastewater to Kanaka Creek, a water of the United States and a tributary of the Middle Yuba River.
2. On 1 March 2002, the Central Valley Water Board adopted Waste Discharge Requirements (WDRs) Order R5-2002-0043 (NPDES No. CA0081809), which included final effluent limitations, in part, for arsenic and electrical conductivity (EC). Finding that the Discharger could not comply with the final effluent limitations for arsenic and EC in WDRs Order R5-2002-0043, the Central Valley Water Board adopted Cease and Desist Order R5-2002-0044, on the same date that required compliance with the final effluent limits for arsenic and EC by 15 March 2005. WDRs Order R5-2002-0043 was amended on 30 April 2003, and Order R5-2002-0043, Amended, expired 1 March 2007.
3. In an attempt to comply with waste discharge requirements, the Discharger added iron shavings to the Mine's waste stream to remove arsenic. However, this passive treatment method was unsuccessful in removing arsenic concentrations below the arsenic water quality standard.
4. On 5 February 2015, the Central Valley Water Board adopted WDRs Order R5-2015-0002, which imposed Final Effluent Limitations IV.A.1, which reads in part as follows:

Final Table 4. Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Arsenic	µg/L	10	20	--	--
Electrical Conductivity	µmhos/cm	900	--	--	--
Antimony	µg/L	6.0	12	--	--
Cadmium	µg/L	0.85	1.7	--	--
Copper	µg/L	3.1	6.23	--	--
Iron	µg/L	300	--	--	--
Lead	µg/L	0.90	1.8	--	--
Manganese	µg/L	50	--	--	--
Nickel	µg/L	201	443	--	--

- d. **Electrical Conductivity.** For a calendar year, the annual average effluent concentration shall not exceed 900 $\mu\text{mhos/cm}$.
- e. **Iron, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 300 $\mu\text{g/L}$.
- f. **Manganese, Total Recoverable.** For a calendar year, the annual average effluent concentration shall not exceed 50 $\mu\text{g/L}$.

NEED FOR TIME SCHEDULE EXTENSION AND LEGAL BASIS

- 5. On 2 February 2015, the Discharger submitted an infeasibility analysis requesting additional time to comply with the existing final effluent limitations for arsenic and electrical conductivity in WDRs Order R5-2015-0002. The Discharger proposed to consider four control and/or treatment options to comply with final effluent limitations, including irrigation, treatment in place, and eliminating the flow to Kanaka Creek. The Discharger estimated that two years would be required to assess the alternatives and that compliance with the final effluent limitations for arsenic, EC, antimony, cadmium, copper, iron, lead, manganese, and nickel would be achieved by 16 April 2020.
- 6. The Discharger cannot consistently comply with the arsenic, electrical conductivity, antimony, cadmium, copper, iron, lead, manganese, and nickel effluent limitations in WDRs Order R5-2015-0002 and must implement additional actions to reach compliance. This Order contains a time schedule for compliance with final effluent limitations, sets interim limitations for certain constituents, and is intended to provide protection from mandatory minimum penalties (MMPs) for these constituents.

MANDATORY MINIMUM PENALTIES

- 7. Water Code section 13385, subdivisions (h) and (i), requires the Central Valley Water Board to impose MMPs upon dischargers that violate certain effluent limitations. Water Code section 13385(j)(3) exempts discharges from these MMPs:

... where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300 or 13308, if all the [specified] requirements are met...for the purposes of this subdivision, the time schedule may not exceed five years in length...
- 8. Per the requirements of Water Code section 13385, subdivision (j)(3), the Central Valley Water Board finds that new or modified control measures are necessary in order to comply with new or more stringent effluent limitations, and that the Discharger could not have designed, installed, and put into operation the new or modified control measures within 30 calendar days of the date that the final effluent limitations went into effect. The proposed time schedule is needed to select a compliance option, complete designs, award bids, and begin construction of upgrades.
- 9. TSOs generally may only provide protection from MMPs for up to five years. However, Water Code section 13385, subdivision (j)(3)(C)(ii)(II), authorizes the Board to grant an additional five years if the Board finds, following a public hearing, that a Discharger is making diligent progress towards bringing the waste discharge into compliance and that the additional time is necessary to comply with the effluent limitations.

10. Compliance with this TSO provides protection for the Discharger from MMPs as follows:

- a. Arsenic and Electrical Conductivity: Previous CDO R5-2002-0044, provided protection from MMPs from **1 March 2002** until **15 March 2005**, for a period of 3 years and 15 days. This Order provides protection from MMPs from **16 April 2015** through **15 April 2020** for an additional period of 5 years. This time schedule is as short as possible and does not exceed ten (10) years in length.
- b. Antimony, Cadmium, Copper, Iron, Lead, Manganese, and Nickel: WDRs Order R5-2015-0002 imposed new final effluent limits for antimony, cadmium, copper, iron, lead, manganese, and nickel that went into effect on 16 April 2015. This TSO provides protection from MMPs from **16 April 2015** through **15 April 2020** for a period of 5 years. This time schedule is as short as possible and does not exceed five (5) years in length.

11. The Board finds that the time schedule in Finding No. 10 is as short as possible, considering the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitations. Where additional time is granted beyond the initial five (5) years, the Board finds that the Discharger is making diligent progress towards bringing the waste discharge into compliance, that the additional time is necessary to comply with the effluent limitations, and that the time schedule does not exceed ten (10) years in length.

12. This TSO provides a time schedule for completing the actions necessary to ensure compliance with final effluent limitations. Since the time schedule for the completion of these actions exceeds one (1) year, this TSO includes interim effluent limitations and interim requirements and dates for their achievement.

13. This TSO includes performance-based interim effluent limitations for arsenic, electrical conductivity (EC), antimony, cadmium, copper, iron, lead, manganese, and nickel. The interim maximum daily effluent limitation (MDEL) for EC (with 19 data points) was calculated using a statistical methodology assuming normally distributed data. The interim average monthly effluent limitation (AMEL) for EC in this Order was established in accordance with section 1.4, Table 2 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP)*, by dividing the interim MDEL by the MDEL/AMEL multiplier (2.01). Additionally, there are limited analytical monitoring results for arsenic, antimony, cadmium, copper, iron, lead, manganese, and nickel, which provide limited datasets to attain statistically calculated performance-based interim limits. For example, using the two sample data provided by the Discharger for iron and the statistical based approach provided in EPA's *Technical Support Document for Water Quality-Based Toxics Control* or TSD to calculate the interim limit, an interim AMEL equates to 6500 µg/L, which is also artificially inflated for an MEC at 2090 µg/L. Therefore, staff used professional judgment in calculating the interim effluent limitations for arsenic, antimony, cadmium, copper, iron, lead, manganese, and nickel in this Order to provide the Discharger a safety factor over the maximum effluent concentrations. Interim effluent limitations are established as shown in the following table:

Interim Effluent Limitations

Parameter	Units	Data Points	MEC	Interim Average Monthly Effluent Limitation	Interim Maximum Daily Effluent Limitation
Electrical Conductivity	µmhos/cm	19	4735	1426	2867
Arsenic, Total Recoverable	µg/L	9	897	700	1000

Parameter	Units	Data Points	MEC	Interim Average Monthly Effluent Limitation	Interim Maximum Daily Effluent Limitation
Antimony, Total Recoverable	µg/L	2	30.8	35	50
Cadmium, Total Recoverable	µg/L	3	26.2	30	50
Copper, Total Recoverable	µg/L	3	6.7	10	15
Iron, Total Recoverable	µg/L	2	2090	2100	2500
Lead, Total Recoverable	µg/L	3	2.5	5.0	15
Manganese, Total Recoverable	µg/L	2	134	150	200
Nickel, Total Recoverable	µg/L	2	128	150	200

13. Between April 2015 and December 2017, the Discharger conducted ten quarterly sampling events providing new information with which to calculate revised, more representative, interim effluent limitations. For constituents with 10 or more sampling data points (EC, antimony, arsenic, cadmium, copper, iron, lead, manganese, and nickel), sampling and laboratory variability is accounted for by establishing interim effluent limitations that are based on normally distributed data where 99.9% of the data points will lie within 3.34 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Therefore, interim annual average effluent limitations for EC, iron, and manganese and interim average monthly effluent limitations (AMELs) for antimony, arsenic, cadmium, copper, lead, and nickel were calculated using the mean plus 3.3 standard deviations. Interim maximum daily effluent limitations (MDELs) for antimony, arsenic, cadmium, copper, lead, and nickel were calculated based on the AMELs and the MDEL/AMEL multiplier from Table 2 of the SIP.

Interim Effluent Limitations

Parameter	Units	Data Points	MEC	Interim Annual Average Effluent Limitations	Interim AMELs	Interim MDELs
<u>Arsenic, Total Recoverable</u>	<u>µg/L</u>	<u>10</u>	<u>1308</u>	<u>--</u>	<u>1900</u>	<u>4800</u>
<u>Electrical Conductivity</u>	<u>µmhos/cm</u>	<u>12</u>	<u>2760</u>	<u>3400</u>	<u>--</u>	<u>--</u>
<u>Antimony, Total Recoverable</u>	<u>µg/L</u>	<u>11</u>	<u>62.3</u>	<u>--</u>	<u>74</u>	<u>150</u>
<u>Cadmium, Total Recoverable</u>	<u>µg/L</u>	<u>10</u>	<u>30.2</u>	<u>--</u>	<u>41</u>	<u>100</u>
<u>Copper, Total Recoverable</u>	<u>µg/L</u>	<u>10</u>	<u>116</u>	<u>--</u>	<u>340</u>	<u>1200</u>
<u>Iron, Total Recoverable</u>	<u>µg/L</u>	<u>11</u>	<u>3050</u>	<u>5700</u>	<u>--</u>	<u>--</u>
<u>Lead, Total Recoverable</u>	<u>µg/L</u>	<u>10</u>	<u>3.6</u>	<u>--</u>	<u>4.4</u>	<u>9.0</u>
<u>Manganese, Total Recoverable</u>	<u>µg/L</u>	<u>11</u>	<u>176</u>	<u>300</u>	<u>--</u>	<u>--</u>
<u>Nickel, Total Recoverable</u>	<u>µg/L</u>	<u>11</u>	<u>153</u>	<u>--</u>	<u>170</u>	<u>310</u>

14. The Central Valley Water Board expects that the Discharger can maintain compliance with the interim effluent limitations included in this Order. Interim effluent limitations are established when compliance with the final effluent limitations cannot be achieved by the existing Facility. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim effluent limitations, however, establish enforceable ceiling concentrations until compliance with the final effluent limitations can be achieved.

15. If an interim effluent limitation contained in this Order is exceeded, then the Discharger is subject to MMPs for that particular exceedance as it will no longer meet the exemption in Water Code section 13385(j)(3). It is the intent of the Central Valley Water Board that a violation of an interim monthly effluent limitation subjects the Discharger to only one MMP for that monthly averaging period. In addition, a violation of an interim daily maximum effluent limit subjects the Discharger to one MMP for the day in which the sample was collected.

REGULATORY BASIS

16. Water Code section 13300 states, in part:

Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.

17. Water Code section 13267 states, in part:

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.

18. The Discharger owns and operates the Sixteen to One Mine. The technical and monitoring reports required by this Order are necessary to determine compliance with WDRs Order R5-2015-0002 and with ~~this~~ TSO R5-2015-0035-01.
19. Issuance of ~~this~~ TSO R5-2015-0035-01 is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) pursuant to Water Code section 13389, since the adoption or modification of an NPDES permit for an existing source is statutorily exempt and this Order only serves to implement an NPDES permit. (*Pacific Water Conditioning Ass'n, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).
20. On 17 April 2015, in Fresno, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider a Time Schedule Order under Water Code section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.
21. On X April 2018, in Fresno, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted a public hearing at which evidence was received to consider amending Time Schedule Order R5-2015-0035 under Water Code section 13300.

IT IS HEREBY ORDERED THAT, Cease and Desist Order R5-2002-0044 is rescinded, except for enforcement purposes, Time Schedule Order R5-2015-0035 is amended to be Time Schedule Order

R5-2015-0035-01, and pursuant to Water Code section 13300 and 13267, in order to ensure compliance with the requirements of WDRs Order R5-2015-0002, the Discharger shall comply with the following:

1. Pursuant to Water Code Section 13267, the Discharger shall submit the following technical reports to ensure compliance with the final effluent limitations for arsenic, electrical conductivity, antimony, cadmium, copper, iron, lead, manganese, and nickel contained in WDR Order R5-2015-0002, as described in Finding 4 above:

Task	Compliance Date
Submit Progress Reports ¹	31 January, annually
Submit documentation that a treatment alternative has been selected	31 March 2017
Submit workplan for selected alternative for control and/or treatment project, with time schedule, for Executive Officer approval	31 May 2017
Submit documentation that selected project has been completed	31 November 2019
Submit documentation of control and/or treatment process startup	31 January 2020
Submit documentation showing that the discharge fully complies with the arsenic, electrical conductivity, antimony, cadmium, copper, iron, lead, manganese, and nickel final effluent limitations	16 April 2020
1 The progress reports shall detail the steps taken to comply with this Order, including documentation showing completion of tasks, construction progress, evaluation of the effectiveness of the implemented measures, and assessment of whether additional measures are necessary to meet the compliance dates.	

2. The following interim effluent limitations shall be effective **immediately and until 16 April 2020**, or when the Discharger is able to come into compliance, whichever is sooner:

Parameter	Units	Interim AMEL	Interim MDEL
Electrical Conductivity	µmhos/cm	1426	2867
Arsenic, Total Recoverable	µg/L	700	1000
Antimony, Total Recoverable	µg/L	35	50
Cadmium, Total Recoverable	µg/L	30	50
Copper, Total Recoverable	µg/L	10	15
Iron, Total Recoverable	µg/L	2100	2500
Lead, Total Recoverable	µg/L	5.0	15
Manganese, Total Recoverable	µg/L	150	200
Nickel, Total Recoverable	µg/L	150	200

Parameter	Units	Interim Annual Average Effluent Limitation	Interim AMEL	Interim MDEL
<u>Arsenic, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>1900</u>	<u>4800</u>
<u>Electrical Conductivity</u>	<u>µmhos/cm</u>	<u>3400</u>	<u>--</u>	<u>--</u>
<u>Antimony, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>74</u>	<u>150</u>
<u>Cadmium, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>41</u>	<u>100</u>
<u>Copper, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>340</u>	<u>1200</u>
<u>Iron, Total Recoverable</u>	<u>µg/L</u>	<u>5700</u>	<u>--</u>	<u>--</u>

<u>Parameter</u>	<u>Units</u>	<u>Interim Annual Average Effluent Limitation</u>	<u>Interim AMEL</u>	<u>Interim MDEL</u>
<u>Lead, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>4.4</u>	<u>9.0</u>
<u>Manganese, Total Recoverable</u>	<u>µg/L</u>	<u>300</u>	<u>--</u>	<u>--</u>
<u>Nickel, Total Recoverable</u>	<u>µg/L</u>	<u>--</u>	<u>170</u>	<u>310</u>

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. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

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

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

or will be provided upon request.

TIME SCHEDULE ORDER NO. R5-2015-0035-01
ORIGINAL SIXTEEN TO ONE MINE, INC.
SIXTEEN TO ONE MINE
SIERRA COUNTY

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I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **17 April 2015** and amended on 6 April 2018.

PAMELA C. CREEDON, Executive Officer