

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

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Rule 1420.1 Plan

COMPANY NAME AND ADDRESS

Quemetco, Inc.
720 South 7th Avenue
City of Industry, CA 91746

ID 8547

mailing and equipment address

EQUIPMENT DESCRIPTION

APPLICATION NO. 530545

RULE 1420.1 COMPLIANCE PLAN

HISTORY

Application No. 530545 was received on 12/16/2011. This application is the compliance plan required by Rule 1420.1 (g). This plan was required because the ambient air lead concentrations at one or more fence line monitoring stations at Quemetco exceeded 0.12 ug/m^3 on a 30 day average.

Rule 1420.1 was adopted on November 5, 2010. The main purpose of this rule is to ensure that on or after 1/1/2012, the 30 day average ambient lead concentrations at or beyond the fence lines of lead-acid battery recycling facilities in the AQMD do not exceed 0.15 ug/m^3 . Rule 1420.1 was adopted to ensure compliance with the new National Ambient Air Quality Standard for Lead which requires that the quarterly average lead concentration does not exceed 0.15 ug/m^3 in accordance with the following EPA timeline:

- States are required to make recommendations for areas to be designated attainment, nonattainment, or unclassifiable by October 2009. If tribes choose to submit recommendations, they must also provide them to EPA by October 2009.
- Final designations of all attainment, nonattainment and unclassifiable areas will be effective no later than January 2012. However, EPA intends to complete initial designations as soon as possible where data are sufficient from existing monitoring network.
- States are required to submit State Implementation Plans outlining how they will reduce pollution to meet the standards no later than June 2013.
- States are required to meet the standards no later than January 2017.

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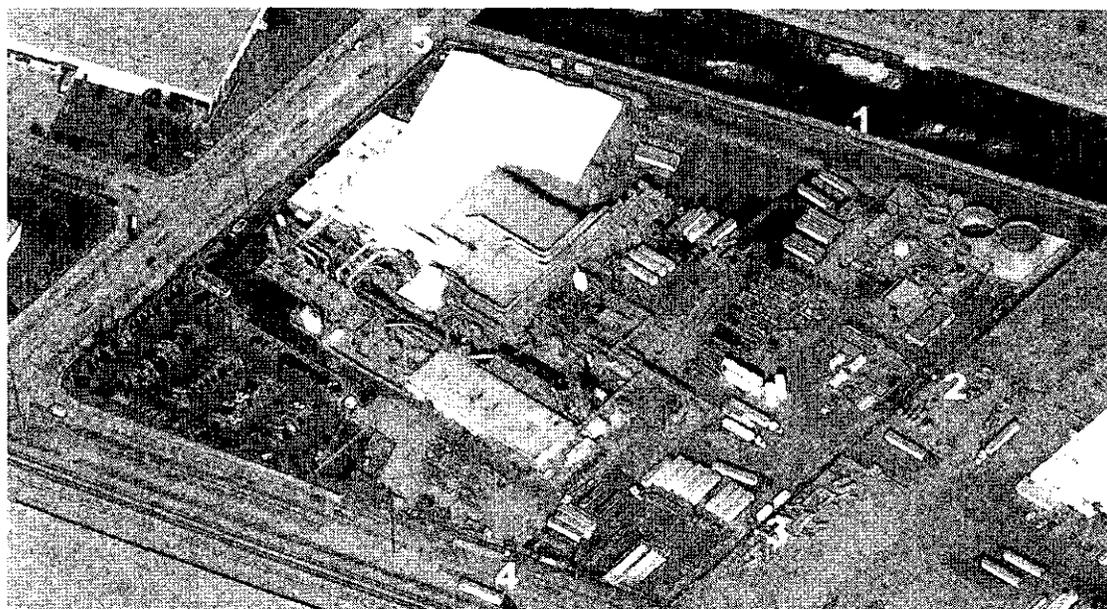
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PROCESS DESCRIPTION/EVALUATION/DISCUSSION

Quemetco has made significant progress in improving housekeeping measures to control miscellaneous sources of fugitive emissions. The most recent improvement is the construction of a new total enclosure building around the battery breaking area at this facility. This building was originally installed as a partial enclosure building with one room ventilation baghouse controlling fugitive lead emissions from this building. Subsequently, following the adoption of Rule 1420.1, Quemetco received a Permit to Construct for a second room ventilation baghouse dedicated to this building and converted the battery breaking enclosure to a total enclosure to comply with the requirements of this new rule. The battery breaking room is essentially separate from the main building by a wall and its ventilation system is separate from the main building.

Quemetco has a total building enclosure around the lead processing operation consisting of the raw material feed room, the furnace room, the refinery pot room and lead casting area, and the warehouse area. These process rooms are all interconnected on the inside and vented by nine separate room ventilation baghouses, separate from the two new baghouses venting the battery breaking building. All room ventilation baghouses are equipped with secondary HEPA filter compartments integral with each baghouse frame, in compliance with the requirements of Rule 1420.1.

With the exception of the refinery pot baghouse, which is located inside of the refinery pot room, all air pollution control system (APCS) equipment is located outside of the containment buildings. The following aerial photograph illustrates the arrangement of the process equipment at this facility and the location of each monitoring station, identified by number.



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Quemetco's Rule 1420.1 plan application requirement was triggered when the 30-day average ambient lead concentration exceeded 0.12 ug/m³ at station no. 5 on 11/17/2011. For the complete dataset, see Appendix A.

Date	Station 5			
	5A	5B	24 hour Ave.	Rolling 30-Day Ave.
11/16/2011		0.25	0.25	0.117
11/17/2011	0.21		0.21	0.122
11/18/2011				0.124
11/19/2011	0.12		0.12	0.125
11/20/2011		0.02	0.02	0.123
11/21/2011	0.08		0.08	0.125
11/22/2011		0.22	0.22	0.131
11/23/2011	0.19		0.19	0.136
11/24/2011		0.06	0.06	0.136
11/25/2011	0.06		0.06	0.136
11/26/2011		0.07	0.07	0.135
11/27/2011	0.09		0.09	0.133
11/28/2011		0.20	0.20	0.136
11/29/2011	0.25		0.25	0.143
11/30/2011		0.29	0.29	0.148
12/1/2011	0.15		0.15	0.148
12/2/2011		0.07	0.07	0.142
12/3/2011	0.06		0.06	0.139
12/4/2011		0.04	0.04	0.138
12/5/2011	0.08		0.08	0.139
12/6/2011		0.16	0.16	0.143
12/7/2011	0.16		0.16	0.145
12/8/2011		0.17	0.17	0.143
12/9/2011	0.12		0.12	0.142
12/10/2011		0.15	0.15	0.143
12/11/2011	0.03		0.03	0.138
12/12/2011		0.06	0.06	0.137
12/13/2011	0.06		0.06	0.131
12/14/2011		0.07	0.07	0.125
12/15/2011	0.08		0.08	0.123
12/16/2011		0.08	0.08	0.117
12/17/2011	0.04		0.04	0.111

The concentrations fell below 0.12 ug/m³ on 12/16/2011. The maximum allowed concentration limit is 0.15 ug/m³. Quemetco notified the AQMD when this level was exceeded in a letter dated 11/23/2011, pursuant to Rule 1420.1 (g)(1) -- (Refer to Attachment A of the applicant's submittal.)

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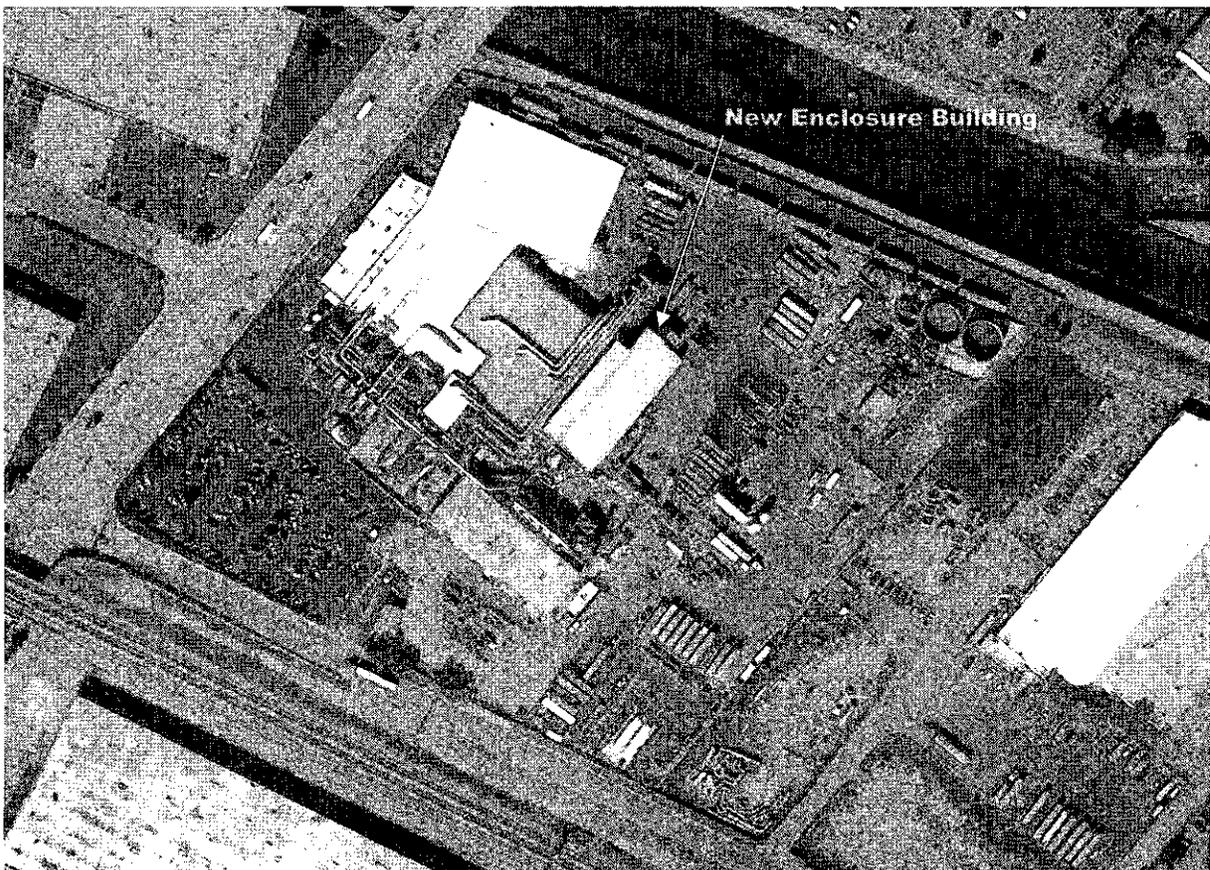
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The other monitoring stations have remained below 0.12 ug/m³ continuously since 7/1/2011. The excursion in concentrations has been attributed to unusually high winds in November, 2011.

The last major improvements to the Quemetco facility consisted of the installation of an enclosure building around the battery breaking area. Quemetco received a Permit to Construct in section H of the Facility Permit on 1/15/2010 for the enclosure building (device C169) and a baghouse room ventilator equipped with a HEPA filter dust collector (device 168) under A/N 488107. Quemetco received a Permit to Construct for a second room ventilator baghouse (device C170) for this building on 10/20/2011 under A/N 525799.

The existing Permit to Construct conditions currently permit the operation of only one room ventilator in this building at any one time. Permit conditions will be amended to address the required operation of both room ventilators simultaneously in the battery wrecker building when monitoring data indicates concentrations greater than 0.12 ug/m³ at any one monitoring station, since it is recognized by Quemetco that two room ventilators are required in certain conditions such as high wind conditions.

The aerial photo on page 2 of this report was taken prior to the construction of the new enclosure building. The following newer photo shows the completed building:



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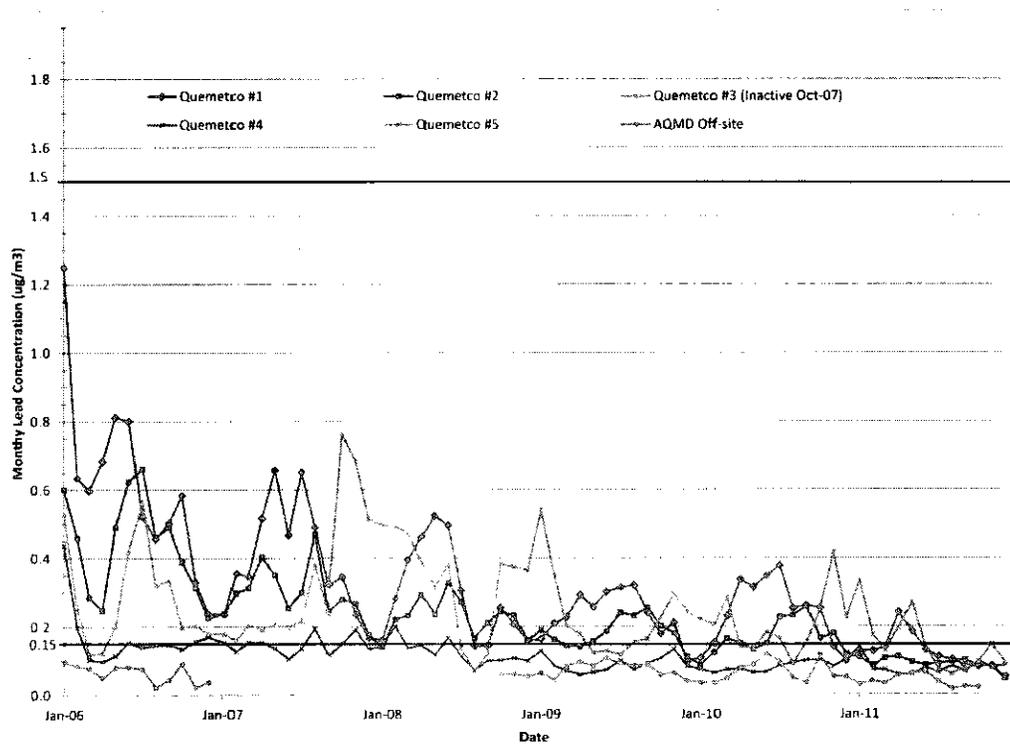
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Quemetco has made many improvements to the control of both process and fugitive lead emissions from this facility since the 1990's. The major improvements include, but are not limited to:

1. The construction of enclosure buildings around most process areas.
2. The installation of baghouses equipped with PTFE membrane type filter bags, or equipped with secondary HEPA filters.
3. The installation of nine room ventilators in the main building and two room ventilators in the new battery breaking building.
4. The venting of the battery crusher scrubber exhaust into the main building which is equipped with multiple room ventilators equipped with secondary HEPA filters.
5. The installation of a new wet electrostatic precipitator (WESP) which adds an additional 98 percent control of lead emissions and other metals on the outlets of the already high efficiency PTFE membrane type baghouses and process scrubbers. The WESP vents the exhaust gases from the APC systems venting the rotary dryer, reverberatory furnace, slag reduction furnace, and refining pot baghouse. It does not vent the room ventilation baghouses. The WESP was originally installed to reduce cancer risk and cancer burden to comply with Rule 1402 and AB2588 requirements. It has the added benefit of controlling lead emissions for Rule 1420.1 compliance.

The following chart illustrates the average monthly concentrations at Quemetco from 2006 until 2011.



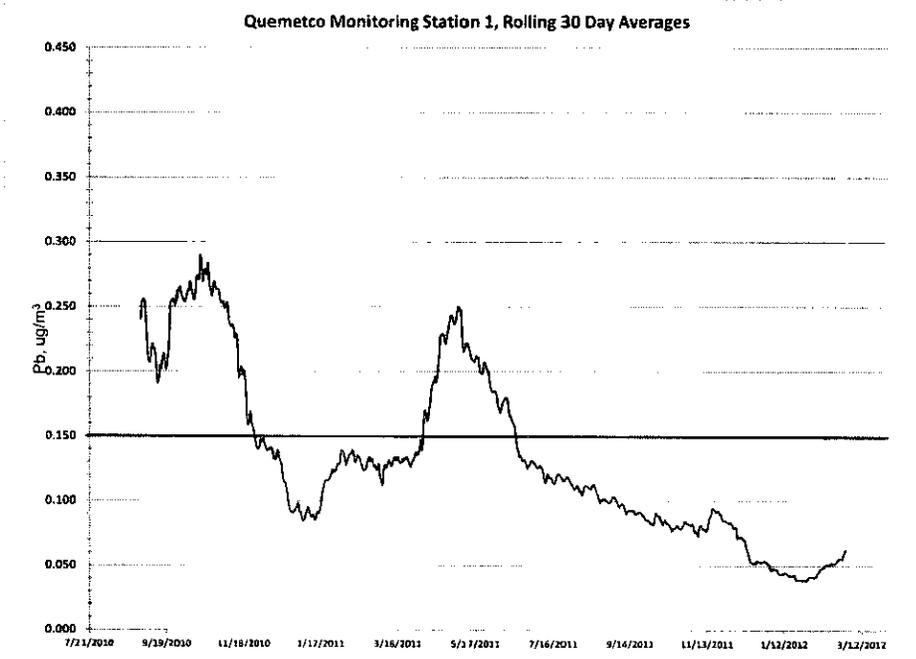
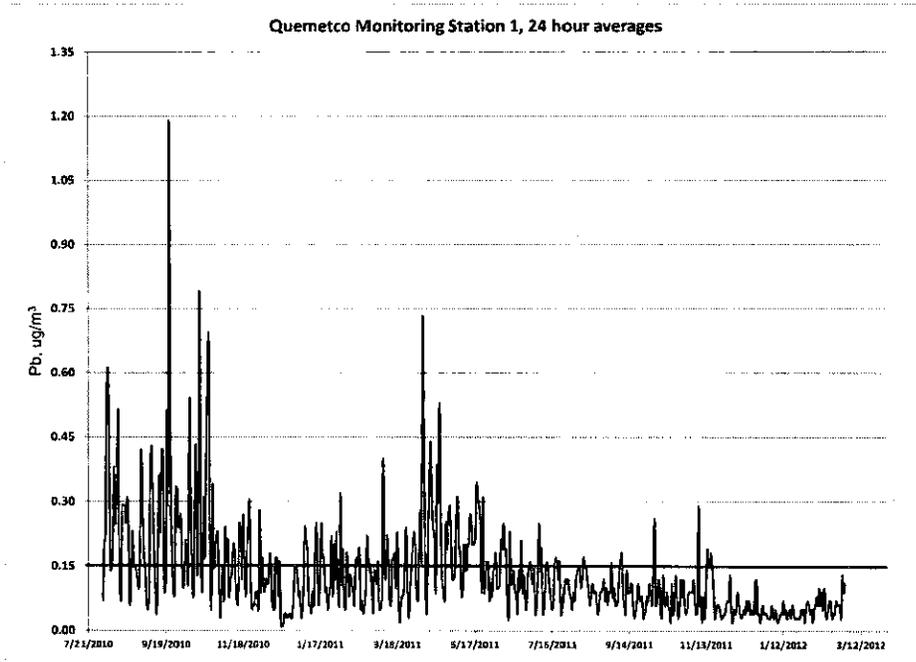
All concentrations were reduced to below 0.15 ug/m³ by December, 2011.

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The following charts illustrate the changes in lead concentrations at each of the Quemetco monitoring stations during a 1.5 year period (7/2010 to 3/2011). Refer to the illustration on page 2 of this report for a map of the locations of each of the following monitoring stations. Refer to the Appendix for a table of the individual data points.

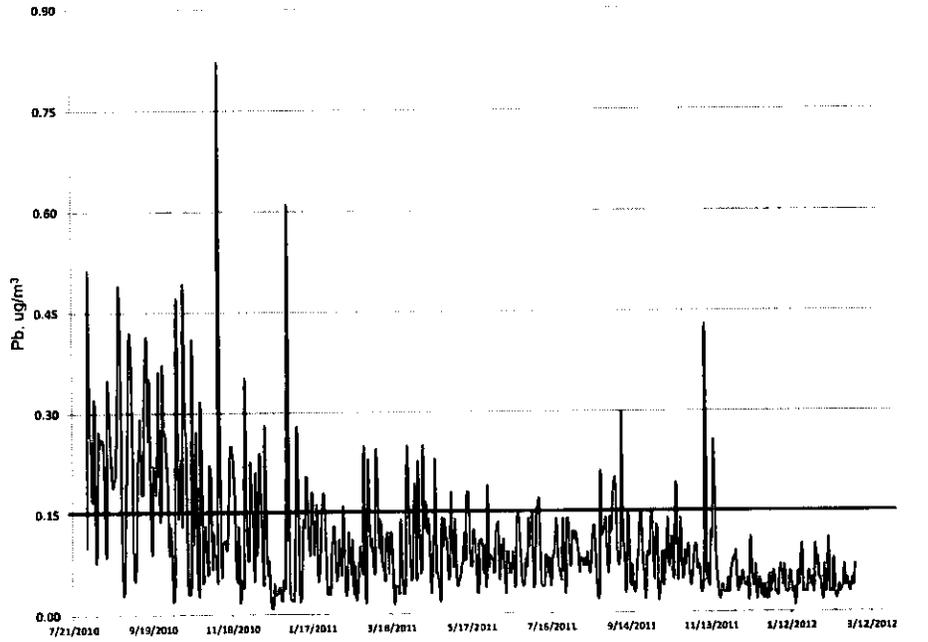


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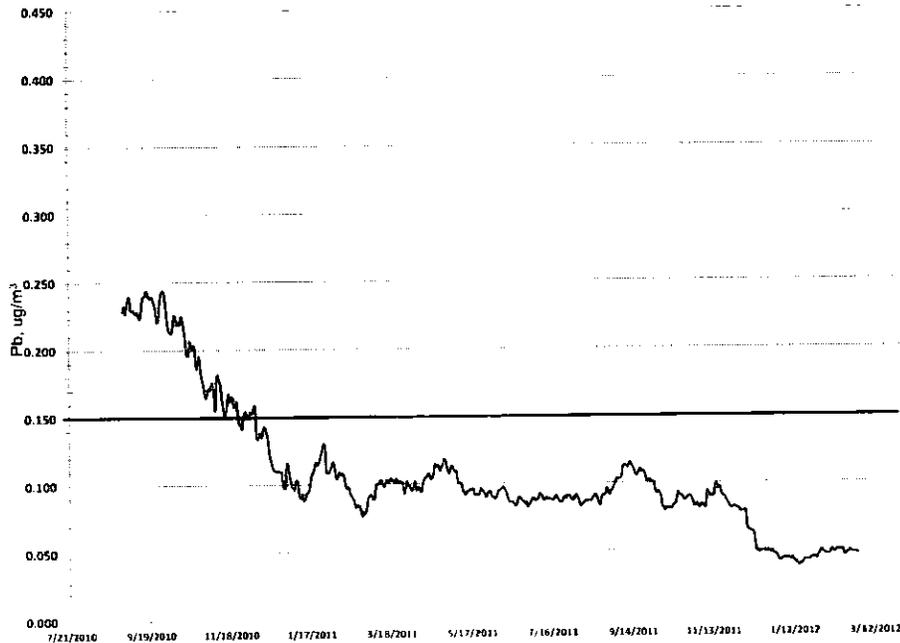
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Quemetco Monitoring Station 2, 24 hour averages



Quemetco Monitoring Station 2, Rolling 30 Day Averages

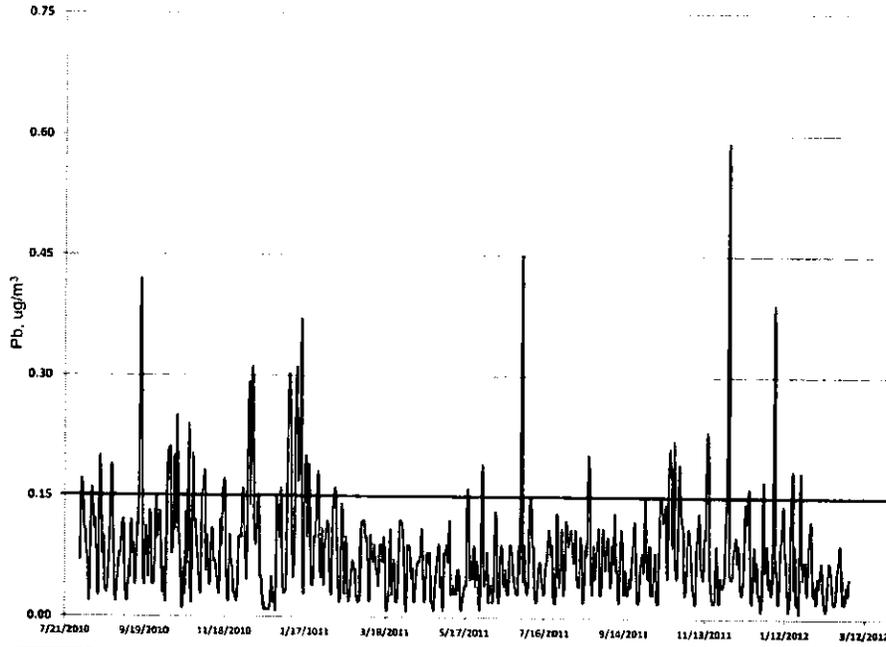


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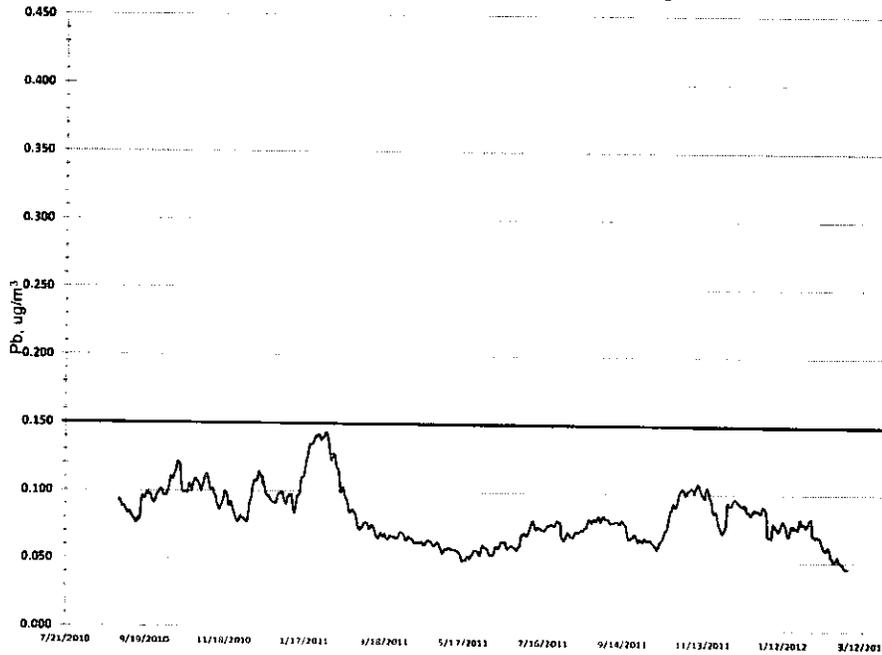
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Quemetco Monitoring Station 4, 24 hour averages



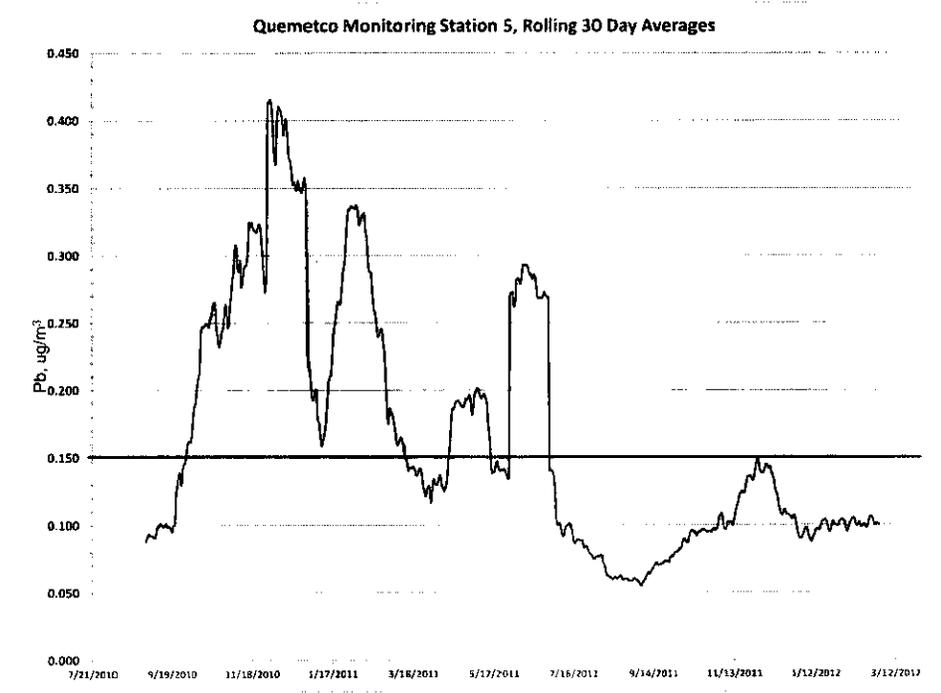
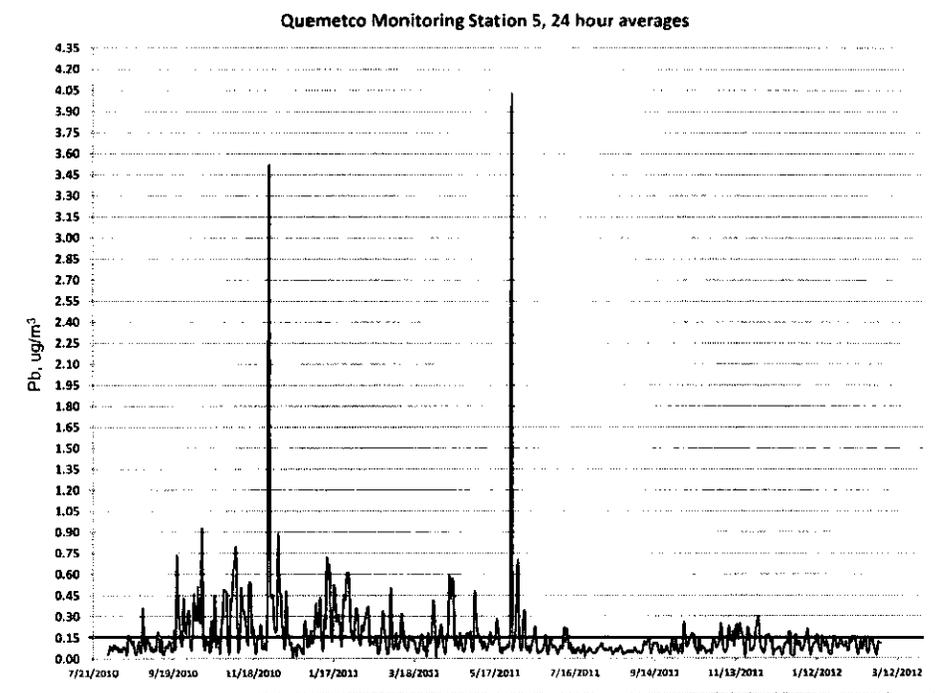
Quemetco Monitoring Station 4, Rolling 30 Day Averages



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The detailed lead monitoring data demonstrates that Quemetco has historically been in compliance with the 0.15 ug/m³ ambient lead concentration limit in Rule 1420.1 (in fact, more recent data indicates continued improvement and even lower ambient lead measurements). It is apparent from

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the 30-day average lead monitoring data that monitoring station no. 5 has registered more excursions in lead concentration than the other monitors. This is expected since it is the monitor located closest to the main total enclosure building at this facility. This monitor is located at the Northwest corner of the building.

Quemetco has proposed several lead control measures in the submitted compliance plan. The main measures include:

1. Daily Observation Log during periods where the 30-day average ambient lead concentrations exceed 0.12 ug/m^3 .
2. Water truck to keep high traffic and activity areas wet for the purpose of dust suppression where the 30-day average ambient lead concentrations exceed 0.12 ug/m^3 .
3. Installation of truck dock seals in the Battery Wrecker Enclosure.
4. Curtailment of battery breaking operations to no more than 6 days per week for 15 days when 30-day average lead concentration exceeds 0.14 ug/m^3 .
5. Curtailment of battery breaking operations to no more than 5 days per week for 15 days when 30-day average lead concentration continues above 0.14 ug/m^3 past the initial 15 days curtailment.

In addition, AQMD has proposed that the following lead emission reduction measure be included:

6. Requiring simultaneous operation of both room ventilator baghouses in the battery breaking total enclosure building for a minimum of 15 days during periods where the 30-day average ambient lead concentrations exceed 0.12 ug/m^3 .

These six lead emission reduction measures are expected to have a beneficial effect on the control of fugitive lead emissions at this facility from production related operations. However, Quemetco has not addressed lead emission reduction measures which may become necessary as a result of maintenance work on equipment located outside of the containment buildings. Specifically, there are two main locations of external equipment located on the North and South side of the containment buildings at this facility. The equipment on the North side consists of several room ventilation baghouses which supply negative pressure to the total enclosure buildings. The equipment on the South side of the building consists of major air pollution control equipment consisting of baghouses, scrubbers, the LoTox ozone generation/exhaust gas treatment system, the regenerative thermal oxidizer, and the WESP. In addition, air pollution exhaust ductwork runs along the roof and exterior of the total enclosure buildings. This equipment is illustrated in the aerial photos on pp. 2 and 4 of this report.

It is difficult to maintain control of fugitive lead emissions whenever maintenance work is required on external equipment. The main problem is that the internal metal surfaces of APCS equipment and duct work are contaminated with lead bearing material. Whenever this equipment is broken down for parts replacement and whenever metal is cut or welded, fugitive emissions containing lead will be released. Since the new lead standard is very stringent (lead concentrations measured in

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tenths of a microgram, i.e., 10^{-7} grams, per cubic meter), a very small release of fugitive lead dust or fumes, from activities such as welding or cutting metal, can cause a lead concentration excursion at one or more monitors of more than 0.15 ug/m^3 , if the wind flows in the direction of these monitor(s).

Whenever maintenance work is performed on lead contaminated equipment, some form of containment/control is required. Rule 1420.1 requires maintenance activities to be conducted in a negative air enclosure and vented to a permitted negative air machine equipped with HEPA filters. In the event physical constraints, limited accessibility, or safety considerations prevent such an enclosure/negative air machine to be used, partial enclosures and wet suppression/HEPA vacuum methods are to be employed. However, if these Rule 1420 maintenance requirements are employed yet maintenance activities are determined to contribute to or solely cause violations of the 30-day rolling average limit of $.15 \text{ ug/m}^3$ standard, further more stringent lead emission reduction measures may be needed. The best method possible to control such lead emissions from maintenance activities is total containment with a permanent enclosure building.

In summary, it is concluded that the following measures will help to mitigate fugitive emissions from external maintenance activities:

7. A daily log of all maintenance activities involving metal cutting, welding, and/or breaking/replacement of duck work shall be maintained.
8. If any one maintenance activity performed outside of a total enclosure building has been employed using the methods required by Rule 1420.1 and yet still has been determined to be the cause of an exceedance of the 0.15 ug/m^3 (based on a 30-day average) ambient lead concentration limit, all subsequent maintenance activities shall be conducted in a permanent total enclosure building around the equipment located at the location of the subject activity, and such an enclosure shall be properly permitted as required.
9. If a maintenance activity on ductwork which runs along the roof of containment buildings causes an exceedance, the subject ductwork shall be re-routed to the interior of the containment building which is under negative pressure, in so much that it is feasible and design and safety factors are duly considered.
10. If an exceedance is attributed to the operation of the waste water treatment facility, a total containment building shall be permitted and constructed to totally enclose this equipment.
11. Quemetco will be allowed to propose alternative lead reduction measures to those required by Items 8, 9, & 10 above and can be used if approved by the AQMD in writing.

RECOMMENDATION

Approve Rule 1420.1 compliance plan with the conditions stated in the plan approval letter issued under A/N 530545.