

West Rancho Dominguez Hexavalent Chromium Investigation: Summary Report

Date: 12-3-2020

Highlights

- South Coast AQMD investigated high levels of hexavalent chromium (a toxic metal air pollutant) in an industrial area in West Rancho Dominguez, California.
- Following South Coast AQMD's investigation and subsequent enforcement actions, monitoring data shows that hexavalent chromium levels in this area have been reduced.
- We continue to track progress on the implementation of the new Rule 1469 requirements, which will continue to address hexavalent chromium emissions from metal finishing facilities
- The hexavalent chromium levels in the residential areas are far lower than the levels found in the industrial area. Also, the levels in 2020 are lower than the levels from 2019. This information shows that hexavalent chromium exposure risks to residents have declined. South Coast AQMD continues to check for any issues that would warrant an enforcement response.

Project History

In 2017/2018, as part of South Coast AQMD's Community Air Toxics Initiative, a mobile monitor found high levels of total chromium in an industrial area in West Rancho Dominguez (WRD). Since June 2019, South Coast AQMD has measured hexavalent chromium (Cr^{6+})¹ levels at several locations in the industrial area (see Figure 1). We also measured the levels at an upwind site at a mobile home park (Site 11), and a downwind site in a residential community (Site 14). Staff identified and addressed several issues with two metal finishing facilities and two concrete batch plants. Some remaining efforts that will reduce Cr^{6+} emissions from one metal finishing facility are still ongoing, with key milestones expected within the next several months.

This industrial area is on the northern end of the Wilmington, Carson, West Long Beach Assembly Bill (AB) 617 community, and the efforts are considered to be part of AB 617. However, metal processing facilities are not specifically identified in the Community Emissions Reduction Plan (CERP) for this community.

¹ The metal chromium has several forms, and hexavalent chromium is the most toxic form of this metal. Hexavalent chromium is a known human carcinogen.



Figure 1. Map of monitoring locations in West Rancho Dominguez

Project Aims

There were three main project aims that we worked to achieve:

- **Aim 1 – Source Identification:** To identify potential facilities and their sources of elevated Cr^{6+} in this industrial area, and address any potential issues
- **Aim 2 - Risk Assessment:** To identify potential cancer risks to nearby community, if any, and provide public outreach if persistent elevated levels were detected in residential areas
- **Aim 3 - Identify Gaps:** To identify areas of non-compliance or any regulatory gaps at specific facilities, particularly with respect to South Coast AQMD toxics rules

Description of Efforts

The investigation involved many types of efforts, including air monitoring, enforcement actions, collaboration with other agencies, and providing public information. Here is a summary of these efforts:

Monitoring: Sampling began on June 5, 2019 at 10 sites and was expanded to 13 sites July 20, 2019. Samples were collected once every 3 days. Sampling was paused from 3/20/2020-6/1/2020 as part of the efforts to minimize the spread of COVID-19, but sampling at 10 locations resumed June 2, 2020, on a modified schedule. In October 2020, sampling at all but 3 sites were discontinued, because the majority of the project aims had been achieved.

Evaluation of Monitoring Data: The results from most of the sampling locations showed relatively low levels. However, a few sites had higher levels of Cr^{6+} , which helped guide our investigation into possible nearby sources. Based on the monitoring results from June-December 2019, the highest Cr^{6+} levels were seen at Sites 2, 3, 5, and 7. Monitoring results from January-October 2020 have shown much lower levels at Sites 2, 3, and 7, compared to the

data from 2019 at these same sites. However, levels at Site 5 only decreased about 7% between 2019 and 2020 (see Figure 2).

Levels at Site 12 have fluctuated from month to month. The highest monthly average levels at this site were in October 2019, November 2019, and March 2020. However, the most recent three months (August through October 2020) showed much lower levels.

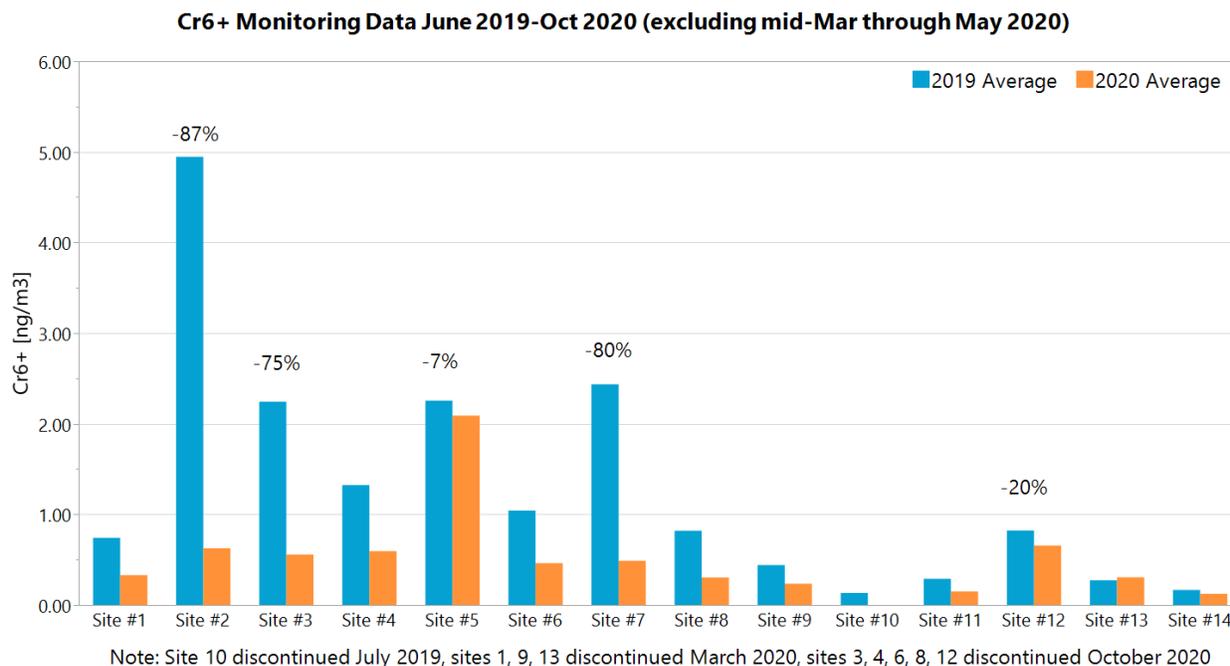


Figure 2. Monitoring data results in West Rancho Dominguez

Key facilities identified: Staff identified potential sources of Cr⁶⁺ from nearby facilities:

Facility Name	Facility ID	Facility Type	Address ²
Coast Plating (Valence Surface Technologies)	112968	Chromic acid anodizing, chrome spraying, and metal finishing	128 W 154th St, Gardena, CA 90248
Accu-Chrome Plating and Grinding	5137	Hard chromium electroplating	115 W 154th St, Gardena, CA 90248
A&A Ready Mixed Concrete	38429	Concrete batch plant	100 E. Redondo Beach Blvd., Gardena, CA 90248
A&A Ready Mixed Concrete	21665	Concrete batch plant	134 W. Redondo Beach Blvd., Gardena, CA 90248

Specific actions to address elevated Cr⁶⁺ levels detected by the monitors:

² Addresses may be listed as “Gardena”, but they are located in the unincorporated area of West Rancho Dominguez

- **Coast Plating:** In 2019, the levels near Site 2 (near Coast Plating) were higher compared to the other sites. From June 2019 to January 16, 2020, Site 2 showed an average of 4.67 ng/m³, compared to the next highest sites (Sites 5 and 7) with average concentrations of about 2.3 ng/m³. There was one day in September 2019 when the monitor at Site 2 recorded a 76 ng/m³ concentration. This was likely caused by a breakdown of the facility's air pollution control equipment on the chromic acid anodizing tank; an NOV was issued for this breakdown. The very high level did not recur, and the next four samples had an average concentration of around 4 ng/m³. On January 16, 2020, Coast Plating stopped operating its sodium dichromate seal tank; this was verified by South Coast AQMD compliance staff on January 28, 2020. Since that time, the average levels at Site 2 have decreased to about 0.54 ng/m³. Emissions from Coast Plating likely also affect levels at Site 7 when winds are from the East Northeast, as well as Site 3, which was likely influenced by emissions from Coast Plating and in some part from Accu-Chrome. Coast Plating is in the process of shutting down operations at this facility, so emissions from such operations are expected to further decrease.
- **Accu-Chrome:** Since January 1, 2020, the site with the highest average levels has been Site 5 (2.09 ng/m³), with the other sites in the industrial area showing far lower levels (ranging from 0.49 ng/m³ to 0.63 ng/m³). Accu-Chrome has modified their permits to operate only 2 out of their 3 tanks temporarily, which allows them to dedicate their existing ventilation capacity on these two tanks, which improves the collection efficiency of pollution control. The facility is in the process of converting to a significantly more efficient "push-pull" emission collection system. Once the conversion is complete, Accu-Chrome intends to begin using the third tank again. These facility changes are driven by the new requirements in South Coast AQMD Rule 1469.
- **A&A Ready Mixed Concrete:** Sites 12 and 5 have an average concentration of about 0.74 and 2.2 ng/m³, respectively. These sites are located near A&A concrete operations. Levels at Site 5 are likely affected by both Accu-Chrome and A&A Ready Mix. The levels at these monitoring locations were some of the highest during 2019, and the levels at Site 12 and Site 5 decreased 20% and 7%, respectively, in 2020. Samples from other concrete batch facilities have shown that concrete can contain Cr⁶⁺, and bulk samples from these facilities confirmed there was Cr⁶⁺ in the materials. However, the Cr⁶⁺ concentrations in these samples were lower than other similar facilities that we sampled in Compton. Enforcement actions were taken to address fugitive dust issues. Because some cement dust can contain Cr⁶⁺, any facility practices to address fugitive dust help limit potential Cr⁶⁺ emissions from the materials used on site at that time. Since the Fall of 2019, the facility has enhanced their housekeeping procedures at both sites, including having employees clean the truck entrances and exits more frequently using push brooms and increasing the frequency of street sweeping. Since September 2020, A&A noted that they will stop hand loading operations in the area near Site 5. The facility has purchased an upgraded sweeper as part of the settlement agreement for the multiple track-out Notices of Violation (NOVs) from 2019. The facility recently received the appropriate registration for this equipment.

Enforcement: A total of 10 NOVs were issued to A&A Ready Mix (across the 2 facilities), and two NOVs were issued to Coast Plating. No additional NOVs have been issued to facilities that are a part of this investigation since October 2019. Details are available at this website: <http://www.aqmd.gov/home/news-events/community-investigations/west-rancho-dominguez-emissions-investigations/compliance-enforcement>

Collaboration: Staff observed that there were people living in camper vans parked in the industrial area where some of the elevated levels of Cr⁶⁺ were detected. To address concerns around potential longer-term exposure, staff collaborated with the LA County Department of Public Health, who worked with their County partners to conduct outreach to people living in camper vans in the industrial area.

Evaluation of potential residential community impact: Levels at the upwind residential area (Site 11) and downwind residential area (Site 14) have remained far lower than the levels in the industrial area, with average concentrations of 0.22 ng/m³ and 0.15 ng/m³, respectively. Although the overall averages correspond to cancer risks of 122-in-a million at Site #11 and 78-in-a-million at Site #14. Overall MATES IV cancer risks in WRD are about 1,100-in-a-million. MATES IV cancer risks attributable to Cr⁶⁺ are 33-in-a-million Basin-wide, and 61-in-a-million in Compton. The Cr⁶⁺ levels in the West Rancho Dominguez residential sites generally trended down between June 2019 to March 2020 and have remained generally lower from June 2020 to October 2020. The recorded Cr⁶⁺ levels from January–October 2020 (excluding the March–May dates due to COVID adjustments) correspond to residential cancer risk of 85-in-a million at Site 11 (upwind) and 68-in-a-million at Site 14 (downwind). In general, the downwind residential concentrations do not correlate well with the levels measured in the industrial area.

Public Communication: South Coast AQMD staff provided several updates to offices of local elected officials in this area. Staff also provided updates to the Wilmington, Carson, West Long Beach AB 617 Community Steering Committee. Staff will continue to communicate with these public audiences should there be any further significant developments. Throughout this investigation, staff have posted information publicly on the website (<https://www.aqmd.gov/home/news-events/community-investigations/west-rancho-dominguez-emissions-investigations>), including all the air monitoring results and NOVs that resulted from this investigation.

Evaluation of progress toward project aims:

Aim 1 – Source Identification: Staff identified two metal finishing facilities in the area that were likely or potential sources of Cr⁶⁺. Some key issues at these metal finishing facilities have already been addressed to reduce emissions, but there are a couple remaining actions that staff are tracking at one of these facilities. Additionally, staff addressed fugitive dust issues at two concrete batch plants, which are potential sources of Cr⁶⁺, depending on the materials handled at that time.

Aim 2 - Risk Assessment: Monitoring at nearby residential locations has been completed for approximately 16 months at Sites 11 and 14. This is sufficient data to characterize the Cr⁶⁺ levels in these residential areas, and it is encouraging to see that the cancer risk levels decreased in 2020 to between 68-in-a-million and 85-in-a-million. Although we cannot say for sure how much impact the Cr⁶⁺ emissions from the industrial area contributed to the Cr⁶⁺ levels in these communities, decreasing Cr⁶⁺ emissions in the industrial area would likely further decrease Cr⁶⁺ levels in the nearby downwind communities.

Aim 3 – Identify Gaps: Staff identified specific compliance issues at both metal finishing facilities and both cement batch plants. The facilities have worked to correct these issues, as explained in further detail above (see *Specific actions to address elevated Cr⁶⁺ levels detected by the monitors*).

Conclusions and Further Work:

Over the course of these efforts in WRD, South Coast AQMD has identified significant sources of Cr⁶⁺, addressed issues of non-compliance, assessed the risk at nearby residential neighborhoods, and communicated the information to the public. The Cr⁶⁺ levels in 2020 are lower than the levels from 2019, which shows that hexavalent chromium exposure risks to residents have declined. South Coast AQMD continues to check for any issues that would warrant an enforcement response.

As of November 2020, both Coast Plating and Accu-Chrome continue to operate in this location, although Coast Plating is in the process of shutting down operations. The Accu-Chrome facility is in the process of making some key upgrades they are making at the facility to fully implement Rule 1469 requirements. Specific equipment upgrades include improved pollution controls that will allow the facility to begin using its third tank again. The facility aims to complete these upgrades by March 2021. Staff will continue to evaluate Cr⁶⁺ levels near these two facilities and determine when it may be appropriate to discontinue monitoring.