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California Issues Mandatory PFAS Testing Requirements for Chrome Plating Facilities

California State Water Resources Control Board issued order requiring mandatory environmental assessment at 271 chrome plating facilities.



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In October 2019, the California State Water Resources Control Board (SWRCB) issued order WQ 2019-0045-DWQ (Order) requiring mandatory environmental assessment at 271 chrome plating facilities.

Per- and poly-fluoroalkyl substances (PFAS) are receiving increasing attention from regulators and the media. The increase in regulatory attention to PFAS has led to rapidly evolving environmental requirements that are impacting the metal finishing industry. PFAS consist of thousands of man-made chemicals that have many manufacturing and industrial applications, such as aerospace,

automotive, chemical, electronics, metal coatings and plating, and textile industries, due to their friction-reducing, stain-repellent and fire-retardant characteristics.

Health studies have linked small doses of PFAS in the order of parts per trillion, including perfluorooctanesulfonate (PFOS), to adverse health effects in people, including cancer. PFOS, in particular, has been widely used within the chrome plating industry as a chemical fume suppressant since the 1950s and many states have required manufacturers to reduce the harmful hexavalent chrome air emissions associated with the electroplating process. In 2006, the California Air Resource Board (CARB) mandated the use of PFOS-containing fume suppressants at chrome plating facilities. An industry-EPA collaboration between 2012 and 2015 led to the phaseout and banning of PFOS-containing fume suppressants and the phase in of 6:2 Fluorotelomer sulfonate (6:2 FTS)-based fume suppressant formulations. 6:2 FTS is also a PFAS chemical and has had few health studies performed to determine the exact effect on organisms and the environment, but overall is believed to be safer.

Many critics concerned about the widespread occurrence of PFAS and associated health hazards do not think the federal government is moving fast enough to get a handle on the problem. In light of the increasing attention from regulators and the media, California and other states have ordered individual industries to investigate PFAS contamination. This required use of PFAS in the plating process puts the industry “on the radar” of state and federal enforcement agencies as a potential source for PFAS pollution.

Mandatory Environmental Assessment

In October 2019, the California State Water Resources Control Board (SWRCB) issued order WQ 2019-0045-DWQ (Order) requiring mandatory environmental assessment at 271 chrome plating facilities. Specifically, each facility is required to investigate “if fume suppressants or other substances potentially containing PFAS were disposed, discharged, spilled or released in any way to land, drains, sewers, surface water, air and/or groundwater.” Meaning, if there were fume suppressants used at the facility, testing is required even if there has been no known contamination at the property. As many facilities in operation after 1950 used PFAS-containing fume suppressants, and certainly most California chrome facilities in operation between 2006 and 2015 used PFOS-containing fume suppressants as mandated by CARB, a large number of these businesses must comply with the order. Of note is that the SWRCB is “encouraging” the analysis of samples for 38 varieties of PFAS, while requiring 25. Included in the 25 varieties is not just PFOS, but the new approved fume suppressant constituent 6:2 FTS.

The SWRCB timeline for facilities to respond and take action is very aggressive. The due date for the first submission to the SWRCB is Jan. 31, 2020, and for each facility a lot of work needs to be done between now and then. The SWRCB references Water Code section 13268, which states that “failure to submit the required information by the specified compliance date ... is a misdemeanor and may result in civil liability. Noncompliance may subject you to civil liability in the amount of up to \$5,000 for each day of violation.” The order gave the expected cost of conducting the environmental investigation required from \$10,000 to \$30,000 for the work associated with stormwater and/or wastewater sampling, and from \$20,000 to \$100,000 for soil and/or groundwater sampling.

All environmental assessments under regulatory oversight follow the same procedures. A work plan is prepared by a professional geologist or engineer and is submitted to the oversight agency to explain the proposed activities and the locations and types of samples to be collected, such as soil, groundwater, wastewater and/or air samples. The oversight agency reviews the proposed work plan and the agency either approves the plan as is or requests changes. Once the plan is approved, the field work is conducted and samples are collected and submitted to a laboratory for analysis. When the analytical data is received, the professional reviews the data, prepares a report and submits it to the agency. The agency then provides guidance in the form of a letter stipulating the next steps required in the process. Ideally, no contamination is found and the facility receives environmental case closure from the oversight agency. All activities for the investigation must be under the oversight of a registered professional. The procedures outlined in the order to investigate at chrome plating facilities are the same as this typical scenario, but must be conducted in a very expedited manner.

Jan. 31, 2020 Deadline

Facilities are required to submit a work plan for a preliminary site investigation by Jan. 31, 2020 and there are several things that must take place in order for that to be accomplished. The first thing, and the most important, is that the facility select a knowledgeable, skilled and experienced environmental consulting firm. Because PFAS are considered toxic in low concentrations and because of their prevalence, false positive detections are common during investigations for PFAS. False positives detections can lead to unnecessary expense and additional investigations.

The order is very specific about the work plan requirements. The consultant will need to do a property inspection to prepare a site map showing PFAS material storage and use areas, including the locations of plating baths, wastewater discharge locations, stack locations and other potential sites of release to land, drains, sewers, surface water, air and/or groundwater. The key to understanding this is that releases don't just occur from leaking containers/drums of fume suppressant, but from releases of any water that contains PFAS. Due to the persistence of PFAS and the very low concentrations considered to be toxic, even water containing a small amount of PFAS can result in a large impact to the environment. If the water can migrate into the subsurface, so can PFAS. Cracks in concrete, drains, clarifiers and leaking pipes are points at which PFAS can contaminate soil. Once in the soil, any water introduced into the soil can transport the PFAS to the groundwater.

The work plan is also required to include a sensitive receptor survey. This survey involves investigation and documentation of any sensitive receptors that can contact contaminated soil and groundwater. In this way, the SWRCB can prioritize and delegate agency staffing oversight activities to the most important sites, which are facilities that can potentially have the most negative impact, if found to be contaminated.

The work plan must also explain the soil sampling locations and rationale, such as why the environmental consultant is proposing the medium and location of each sample. Surface and subsurface soil samples are required where PFAS was potentially released to land, including, but not limited to, areas downwind of air emissions. If PFAS is detected in a soil sample or if there is evidence that contaminated

wastewater (or stormwater) leaked into the soil, groundwater samples will then be collected. For each identified PFAS source or potential source area, the SWQCB is requiring samples from three groundwater monitoring locations. Be sure the consultant addresses any contingencies, such as the possibility of groundwater samples and builds them into the initial work plan. That way you won't have to pay for the preparation of an additional work plan to collect these subsequent samples. The key is to collect enough data at once to avoid the additional costs of preparing additional work plans and technical reports and the costs associated with additional mobilizations of the environmental staff. Collecting and analyzing samples is expensive, so it is a balancing act to collect enough data to prove that the facility has not contaminated the soil and/or groundwater versus collecting too much data at an unnecessary cost.

When the work plan has been submitted and approved by the SWQCB, the field work begins. It is important that the samples are collected without cross contaminating them. This is a hard task to accomplish, as there is a prevalence of PFAS in commonly used personal products and tools. There is specific guidance to how to collect these samples. The field crew should not: shower on the day of the sample collection, use sunblock, wear new clothing that hasn't been washed or wear clothing made of waterproof materials. Many common tools, such as pumps and some sample containers, should not be used as these may contain Teflon which contain PFAS. Blue ice should not be used in the cooler where samples are placed. There are many other things to avoid and this is one more reason to hire a knowledgeable, skilled and experienced environmental consulting firm.

It is also important to report the data so that the SWQCB can skim the document quickly and see that there is no significant contamination. A precise and easy-to-read report is ideal. If contamination is found at the site, it is important for the professional to explain clearly and concisely what was found and how it compares to screening levels.

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