

CASE STUDY ENVIRONMENTAL HEALTH AND SAFETY

Airborne Hexavalent Chromium Sampling in a Remediation Project

OVERVIEW

CM3 Environmental Inc. was engaged to conduct airborne hexavalent chromium (CrVI) sampling during a remediation project at a commercial facility. The project involved the removal of exhaust ductwork that had previously serviced chrome plating operations. The primary objective was to assess CrVI concentrations in the air to ensure compliance with regulatory standards and safeguard worker health and future occupants..



KEY CHALLENGES

CrVI, a hazardous byproduct of industrial activities such as plating and welding, poses significant health risks if inhaled. Ontario Regulation 833 sets a stringent time-weighted average exposure value (TWAEV) limit of 0.05 mg/m³ for water-soluble CrVI compounds. Given the risks, it was critical to implement precise sampling methodologies and effective containment measures to prevent occupational exposure during remediation. Additionally, ensuring accurate data collection and regulatory compliance required a robust quality control process.



OUR APPROACH

CM3 developed a comprehensive air sampling protocol aligned with NIOSH Method 7600, utilizing calibrated equipment to monitor CrVI concentrations during and after duct removal. The sampling was conducted over two separate events, with all collected samples sent to a third-party accredited laboratory for analysis. To ensure data integrity, a quality control blank sample accompanied each batch of collected samples.

The results consistently indicated that airborne CrVI concentrations were below the detection limits of the analytical method and well within regulatory thresholds. The findings validated the effectiveness of the engineering and administrative controls implemented during remediation. CM3 confirmed that containment measures successfully minimized exposure risks, ensuring compliance with occupational health and safety standards.

RECOMMENDATIONS

With all CrVI levels well below regulatory limits, no additional remediation measures were necessary. However, CM3 recommends that similar projects continue to incorporate stringent air sampling protocols, rigorous containment strategies, and third-party laboratory verification to maintain workplace safety and regulatory compliance.

This project underscores CM3 Environmental Inc.'s expertise in hazardous substance air sampling. By employing industry best practices and adhering to strict regulatory frameworks, CM3 ensured a safe work environment while helping the client meet due diligence obligations.

Choose CM3 to help keep your facility safe from hazardous substances with our Air Sampling services.

Our team of experts are here to help support your environmental compliance and workplace safety needs.

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