

Volatile Organic Compounds (VOC) Fugitive Emissions Inspections Training (TOXC240)

Course date: September 9, 2026 (8am CDT to 4pm CDT)

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Summary

Provide training to LADCO / state agency personnel on the aspects of a Leak Detection and Repair (LDAR) program that is applicable to industrial facilities based on USEPA Federal Regulations. The training will cover the following modules and include actual or AI-generated diagrams, three-dimensional images, pictures, charts, graphs and tables based on the contents of the slide. For each module, each slide will contain five bullets that discuss the contents of the slide, with the next to last slide summarizing the content of the module, and the last slide providing a short quiz with five questions and answers to test the participant's comprehension of the information presented in the module. A short Questions & Answers (Q&A) session will follow after the completion of the module(s).

Agenda (8 AM to 4 PM CDT)

Module 1 (1 hr.): Identification of Regulated Facilities - Identify and explain the process description of the following facilities oil and gas exploration and production, oil and gas gathering, boosting, and transmission, natural gas processing, refineries, power plants and chemical plants (8-9 AM)

Module 2 (1 hr.): USEPA Federal Regulations (MACT, NSPS, NESHAP) - Identify and explain the requirements of the associated individual regulations and standards that apply to fugitive VOC emissions applicable to the facilities discussed in Module 1 (9-10 AM)

Break / Q&A on Module 1 and 2 (15 min.) (10-10:15 AM)

Module 3 (1 hr.): Sources of Fugitive VOC Emissions - Identify and discuss the types of equipment (i.e., pneumatics) or components (i.e., valves, pumps, flanges) at the regulated facilities discussed in Module 1 that have fugitive VOC emissions. The visual for each type of equipment will reference the location where the VOC fugitive emissions are emitted to atmosphere. (10:15-11:15 PM)

Lunch Break / Q&A on Module 3 (45 Min.) (11:15 – 12 PM)

Module 4 (1 hr.): How are Fugitive VOC Fugitive Emissions Quantified - Discuss the different methodologies used to calculate fugitive VOC emissions from the types of equipment discussed in Module 3, such as leak/no leak factors, correlation equations, AP-42 emission factors, and bagging studies (12-1 PM)

Module 5 (1 hr.): Present and Emerging Technologies that Detect VOC Fugitive Emissions - Identify and discuss the functionality of both present and emerging technologies associated with fugitive VOC emissions monitoring such as FLIR camera, Method 21 analyzer, Photo Ionization Detector (PID), Flame Ionization Detector (FID), drone surveys, fence-line monitors, and satellite imaging, and provide examples of how these types of technologies are utilized by regulated facilities, communities and regulatory agencies. (1-2 PM)

Break / Q&A on Modules 4 and 5 (15 min.) (2-2:15 PM)

Module 6 (1 hr.): How Field Inspections are Conducted - Provide best management practices (BMPs) associated with conducting field inspections when monitoring equipment discussed in Module 3 with the technology discussed in Module 5. These BMPs include pre-inspection regulatory review, permit review, what records are required to be maintained, and what reports are required to be submitted. Explain the BMPs associated with on-site inspections and post inspections (2:15 – 3:15 PM)

Module 7 (30 min.): What Compliance Problems Have Been Found with Current LDAR programs - Provide the list of issues that USEPA has identified during inspections and audits that have resulted in notices of violations, agreed orders, consent decrees and other enforcement actions (not identifying all regulated components/units in inventory, not monitoring components, insufficient time to identify a leak, holding the probe away from the component interface, not using an instrument that meets the specifications required in Method 21, not calibrating the detection instrument on a daily basis, improperly identifying components as “unsafe” or “difficult” to monitor, improperly placing components/units on the “Delay of Repair” list) (3:15 – 3:45 PM).

Wrap-up / Q&A on Modules 6-7 (15 min) (3:45 – 4 PM)