NPDES Compliance Inspection Manual

Chapter 18

EPA Publication Number: 305-K-17-001
Interim Revised Version, January 2017

CHAPTER 18 – MULTIMEDIA CONCERNS

Contents

Associated Appendices

AQ. Media-Specific Inspection Components
AR. National Multimedia Screening Inspection Worksheet

A. INTRODUCTION

This chapter is intended as a guide for National Pollutant Discharge Elimination System (NPDES) inspectors who conduct single media and/or multimedia compliance inspections. Inspections help determine a facility's status of compliance with applicable laws, regulations, and permits for one media or multimedia. Specifically, multimedia compliance investigations determine a facility's compliance status in more than one media. NPDES inspectors should be familiar with multiple regulatory programs in order to identify other potential environmental violations during a multimedia inspection. Additionally, the inspector should be able to identify possible media-related concerns on inspections that are not necessarily targeted towards multimedia compliance.

This chapter and Appendix AQ, "Media-Specific Inspection Components," include a significant amount of material drawn directly from the National Enforcement Investigations Center's (NEIC's) *Multimedia Investigation Manual* (EPA, 1992) and EPA's *Process-Based Inspections Guide* (EPA, 1997). NPDES inspectors participating in multimedia inspections should refer to these documents for further guidance.

Additional training available for each media is listed in the EPA Order 3500.1 Program-Specific Training Requirements, which is included as Appendix A.

B. OVERVIEW OF THE MULTIMEDIA APPROACH TO INSPECTIONS

Most inspections can be grouped into four categories of increasing complexity, moving from Category A (program-specific compliance inspections) to Category D (complex multimedia investigations) depending upon the complexity of the facility and the objectives of the investigation. The four general categories of investigations are described below:

Category A: Program-specific compliance inspections conducted by one or more inspectors. The objective is to determine facility compliance status for regulations specific to a single program, such as NPDES program requirements.

Category B: Program-specific compliance inspections conducted by one or more inspectors in which the inspector(s) screen for and report on obvious, key indicators of possible noncompliance in multiple program areas. For example, an inspection may be aimed at determining compliance with NPDES program requirements, but screening for indicators of possible noncompliance for both NPDES and FIFRA requirements is performed.

Category C: Several concurrent and coordinated program-specific compliance investigations conducted by a team of investigators representing two or more environmental and/or statutory program offices. The team, which is headed by a team leader, conducts a detailed compliance evaluation for each of the target programs. Category C inspections entail a more detailed compliance evaluation of each

target program than the general screening-level evaluation performed in a Category B inspection. The objective is to determine compliance for several targeted program-specific areas. Reports on obvious, key indicators of possible noncompliance in other environmental program areas are also made.

Category D: Comprehensive facility multimedia evaluations that not only address compliance in targeted program-specific regulations, but also try to identify environmental problems that might otherwise be overlooked. The initial focus is normally on facility processes to identify potentially regulated activities (e.g., new chemical manufacturing from raw material management through final manufacturing and processing) and byproducts/wastestreams generated, especially those that may not have been accurately reported to the regulators. When potentially regulated activities or wastestreams are identified, a compliance evaluation is made with respect to applicable requirements and subsequent compliance status. Special attention is often given to pollutants that "change media" (such as air pollutants that are scrubbed into wastewaters).

The investigation team, headed by a team leader, comprises staff thoroughly trained in different program areas. The on-site investigation is conducted during one or more site visits and involves intense concurrent program-specific compliance evaluations, often by the same cross-trained personnel.

Category D multimedia investigations are thorough and, consequently, resource intensive. They are appropriate for intermediate-to-large, complex facilities that are subject to a variety of environmental laws. Compliance determinations are made for several program-specific areas, and reports on possible noncompliance are prepared, based on the evaluation of the facility's activities and wastestreams

Generally, all investigations will include pre-inspection planning, use of a project plan, sampling, inspection procedures, and a final report. The major difference will be in the number of different regulations addressed during Categories C and D investigations.

The multimedia approach to investigations has advantages over program-specific inspections. Multimedia inspections provide:

- A more comprehensive assessment of a facility's compliance status.
- Improved leveraging of compliance monitoring and enforcement resources.
- The ability to respond more effectively to cross-media complaints, issues, or needs and to develop a better understanding of cross-media problems and issues, such as waste minimization.
- The ability to conserve resources and yield more thorough results than numerous single media investigations.

- A higher probability of identifying cross-media issues, such as pollutants that can be "lost" as they change media.
- The opportunity to identify weaknesses in a facility's Environmental Management Systems.
- Larger facility impact, which may enhance deterrent effect on facility corporate management.

The success of a multimedia investigation program is contingent upon a good managerial system and the support of upper management. Since these investigations will often be conducted at larger facilities, adequate resources (time and personnel) must be provided. Good communication among all team members during the planning phase is essential to define the scope of the inspection, as well as each team member's role. Communications could also include state officials since state inspectors might also participate as team members. Because of the extent of the state's knowledge of the facility and its problems, state involvement is often critical to the success of the investigation. Similarly, coordination with other federal or local agencies needs to be addressed, as necessary.

C. MULTIMEDIA CONCERNS AT NPDES FACILITIES AND THE MULTIMEDIA SCREENING PROGRAM

HAZARDOUS WASTE

Many NPDES-regulated facilities are also subject to requirements of the Resource Conservation and Recovery Act (RCRA). RCRA regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes. NPDES permit writers and inspectors may learn whether the facility conducts RCRA regulated activities, and the nature of those activities, from state or EPA RCRA authorities, data platforms such as EPA's Enforcement and Compliance History Online (ECHO), or while discussing facility industrial processes during the initial stages of a compliance investigation.

Industrial facilities can use or generate solid, liquid, or gaseous hazardous waste. These wastes may be generated from raw materials, off-specification products, or residuals or emissions from the process operations. In addition, waste oils used by process equipment, solvents used in cleaning operations, or sludges from treatment of process wastewaters can be hazardous wastes.

RCRA defers the control of hazardous wastes to the Clean Water Act (CWA) when those wastes are either directly discharged to surface waters under an NPDES permit (the direct discharge exclusion) or indirectly discharged to a wastewater treatment plant (the domestic sewage exclusion). Industrial facilities may use the direct discharge and domestic sewage exclusions as preferred disposal methods. Since many of the 126 priority pollutants listed in the CWA would be considered hazardous waste constituents under RCRA, the discharge of these pollutants should concern the inspectors and operators of wastewater treatment plants. Potential RCRA issues to consider in a NPDES inspection include:

- Hazardous wastes may pass through to surface waters unless incidentally removed in sludge, degraded, or "lost" through volatilization or exfiltration during the wastewater collection and treatment process.
- The Universal Treatment Standards under the Land Disposal Restrictions help determine when a hazardous waste has been treated sufficiently for land disposal.
- The RCRA waste may inhibit or reduce the effectiveness of the wastewater treatment processes potentially resulting in lower quality effluent discharges.
- RCRA-regulated hazardous wastes introduced into wastewater treatment facilities with surface impoundments could cause groundwater contamination issues.
- Sludges resulting from the treatment of a hazardous waste may become a regulated waste under RCRA.

Publicly Owned Treatment Works (POTWs) receiving hazardous wastes by truck, rail, or dedicated pipeline are subject to RCRA permit by rule requirements. If the material does not pass through a sewer system prior to arriving at a POTW, it is deemed to be a solid waste and, if appropriate, a hazardous waste. Consequently, POTWs that manage wastes that have not passed through the sewer system and mixed with domestic sewage would be subject to all applicable hazardous waste regulations. Included among these requirements is the provision that corrective action must be taken to remedy any contamination that may have resulted from a release of hazardous waste or hazardous constituents from solid waste management units, such as surface impoundments, to the environment. For example, if a POTW that is subject to these RCRA requirements contaminates groundwater through leaching or exfiltration, the permittee might be required to investigate the nature and extent of those releases and, where appropriate, implement corrective measures.

HAZARDOUS WASTE CLEANUP ACTIONS UNDER RCRA/CERCLA

Another source of contaminated wastewater is hazardous waste cleanup actions. Under RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA, states, and private parties remediate contaminated sites. Much of the waste found at these sites is in liquid form, either as leachate or contaminated groundwater. The treatment of contaminated wastewaters from these sources will likely generate complex mixtures, requiring careful examination of their composition to determine appropriate treatment and disposal techniques.

NONHAZARDOUS SLUDGE

Wastewater treatment generates nonhazardous sludges. Several statutes and regulations, including the CWA, are charged with managing these nonhazardous sludges. NPDES and state permits include disposal limitations for municipal sewage sludge as specified in Title 40 of the *Code of Federal Regulations* (CFR) Part 503 (see Chapter 10 for detailed information on the 40 CFR Part 503 requirements). Many states already impose such requirements. NPDES inspectors should become familiar with state sewage sludge requirements and federal sewage sludge management and disposal requirements under the CWA and those imposed by other statutes

and regulations, particularly RCRA and the Clean Air Act (CAA). For example, the CAA controls air emissions from co-incinerating municipal sewage sludge with other wastes. Municipal sewage sludge that is co-disposed with other waste in a municipal solid waste landfill is regulated by 40 CFR Part 258. Industrial sludges are regulated by 40 CFR Part 257 if land applied and by 40 CFR Part 258 if disposed of in a nonhazardous landfill.

AIR

Air emissions from wastewater treatment units may be subject to CAA regulations. For some industries (e.g., synthetic organic chemical manufacturing industry (SOCMI), petroleum refineries), EPA has developed CAA regulations that limit the amount of volatile hazardous air pollutants that can be contained in process wastewaters. The purpose of these regulations is to minimize the amount of pollutants transferred from wastewater to the atmosphere through volatilization. In general, facilities are required to treat wastewater streams that contain volatile hazardous air pollutants before the streams are exposed to the atmosphere. It is important to be aware of what chemical constituents are in the wastewater and what impact this may have on a facility's compliance with CAA regulations. Air emissions from authorized RCRA Treatment, Storage, and Disposal Facilities (TSDFs) are regulated under RCRA. As a result, wastewater treatment facilities at RCRA TSDFs are now being investigated by RCRA program personnel. In addition, EPA's Greenhouse Gas Reporting Program requires certain wastewater treatment plants to submit annual greenhouse gas (GHG) emissions reports. The GHG Reporting Program impacts suppliers of certain products that would result in GHG emissions if released, combusted or oxidized; direct emitting source categories; and facilities that inject CO_2 underground for geologic sequestration or any purpose other than geologic sequestration. Facilities that emit 25,000 metric tons or more per year of GHGs are required to submit annual reports to EPA. Information about the GHG Reporting Program and covered reporters can be found at https://www.epa.gov/ghgreporting/ghg-reporters.

Additionally, it is important to investigate use of air pollution control devices or other waste management activities that remove pollutants from one media (such as air) but generate a wastewater stream. These wastewaters may not have been accurately reported in CWA permit applications and may not be properly managed.

MULTIMEDIA SCREENING

Regions and states are encouraged to incorporate multimedia screening into as many single media inspections as possible (i.e., conduct Category B inspections in lieu of Category A inspections). Obtaining multimedia screening information earlier in the process will help leverage inspection resources and ensure that all noncompliance issues are included in any facility-specific compliance status evaluation strategy. The compliance inspector will use a multimedia screening checklist as a guide for making and recording observations and pertinent information.

The Environmental Services Division Field Branch Chiefs and NEIC have led the development and implementation of EPA's multimedia inspection program, including screening inspections. The National Multimedia Screening Inspection Worksheet, dated May 12, 1993, was developed

as a general guideline by a regional work group led by Region 3. A copy of this worksheet is included in Appendix AR, "National Multimedia Screening Inspection Worksheet." Regions and states have adapted and customized checklists such as this for their own use.

D. NPDES INSPECTORS AND MULTIMEDIA INSPECTIONS

DESCRIPTION OF A MULTIMEDIA INSPECTION

The strategy developed for multimedia inspections usually involves prioritizing the processes and waste management activities, followed by systematically moving from the beginning to the end of a process with emphasis on regulated wastestream generation and final wastestream management and disposition. The strategy should be somewhat flexible so that "mid-course corrections" can be made.

The compliance evaluations for each media should be coordinated among all the investigators and scheduled to make the most effective use of the inspector's on-site time and facility contact resources. This schedule should provide an approximate schedule for each media investigator to review documents, interview facility personnel, conduct on-site observations, and conduct sampling as appropriate. This schedule must be flexible and may be modified throughout the on-site investigation to effectively use the limited available time. Daily meetings between team members to discuss progress and needs are recommended to help modify this schedule to meet the team and the facility personnel needs. Personnel availability and other logistical factors may result in a combining of compliance evaluations. RCRA issues may be evaluated concurrently with NDPES requirements because of the close relationship between process evaluations and wastewater generation and disposal requirements. Compliance with regulatory programs that principally involve records reviews, such as the Toxic Substances Control Act (TSCA), Emergency Planning and Community Right to Know Act (EPCRA), and CAA could be scheduled later in the inspection, as time permits.

The strategy for process and compliance evaluations should be developed by the inspection team coordinator and discussed with inspection team members. This will serve as the basis for explaining inspection activities and scheduling to the company during the opening conference.

The strategy should include checklists that address potential process wastestreams to be examined and help identify media-specific compliance issues. Checklists can be a vital component of a compliance investigation to help ensure that an investigator does not overlook anything important. Checklists serve as a reminder of what needs to be asked or examined and provide the basic regulatory requirements. However, checklists should not be a replacement for observations, curiosity, and common sense.

In larger facilities, multiple site visits coordinated by the team leader may be necessary and desirable for completing the inspection and following up on issues identified during earlier site visits. This approach can lead to a better overall site compliance determination inspection because of the opportunity to thoroughly review the information obtained during the inspection upon return to the office, refine the inspection strategy to fill in the gaps and resolve questions, and conduct a subsequent site visit to obtain the required information.

THE NPDES INSPECTOR'S ROLE IN A MULTIMEDIA INSPECTION

Each multimedia investigation team member should bring special program expertise and experience and must be trained in conducting a field investigation, including sampling. Most of the investigators on the team, including the team leader, should be current field investigators who already possess most of the necessary skills and qualifications. EPA Order 3500.1 sets forth specific training requirements for any EPA investigator who is leading a single media investigation. These training requirements include both general inspection procedures and media-specific procedures. While an individual leading a multimedia investigation may not have had the media-specific training for each media covered during that multimedia investigation, the team leader should have completed media-specific training for at least two of the media. At least one team member should be trained in each area that is to be addressed in the multimedia inspection.

The team leader has the overall responsibility for the successful completion of the multimedia investigation. In addition, other investigators may be designated as leads for each of the specific media/programs that will be addressed. These individuals may work alone or have one or more inspectors/samplers as assistants, depending on workload and objectives. However, all investigation team members should report directly to, and be accountable to, the team leader.

The following are some of the more important skills and qualifications that are necessary for team members:

- Ability to work effectively as a member of a diverse team.
- Knowledge of the EPA's policies and procedures regarding inspection authority, entry procedures/problems, enforcement actions, legal issues, and safety.
- Thorough understanding of sampling equipment; quality assurance (QA) requirements for sample collection, identification, and preservation; and chain-of-custody procedures.
- Knowledge of manufacturing/waste producing processes, pollution control technology, principles of waste management, flow measurement theory and procedures, and waste monitoring techniques/equipment.
- Investigation skills including the ability to gather evidence through good interviewing techniques and astute observations.
- Ability to convey information gathered during the inspection into clear, understandable investigation reports.
- Up-to-date experience in conducting compliance inspections.
- Good communication skills.
- Basic understanding of the procedures of obtaining administrative warrants, including preparation of affidavits, technical content of the warrant application, and warrant and procedures for serving a warrant.

- At least one team member should have considerable knowledge of laboratory standard operating procedures (SOPs), analytical test methods, and QA requirements, if a laboratory evaluation is to be conducted.

Investigators should conduct themselves in a professional manner and maintain credibility. A cooperative spirit should be cultivated within the inspection team and with facility representatives, including conducting on-site activities during normal working hours of the facility, as much as possible. Inspection team members should discuss their observations/findings relating to one or more programs with each other. The investigation team should also implement appropriate documentation procedures as described in Chapter 2. Investigators must ensure that important documents (e.g., project plan, safety plan, and logbooks) are not left unattended at the facility and sensitive discussions should not take place in front of facility personnel or on company telephones.

E. REFERENCES

The following is a list of resources providing additional information on multimedia.

U.S. Environmental Protection Agency. (1992). *Multimedia Investigation Manual*. EPA-330/9-89-003-R. National Enforcement Investigations Center (NEIC).

U.S. Environmental Protection Agency. (1997). *Process-Based Investigations Guide*. EPA-330/9-97-001.

U.S. Environmental Protection Agency. (2016). *Best Practices for NPDES Permit Writers and Pretreatment Coordinators to Address Toxic and Hazardous Chemical Discharges to POTWs.* EPA-830-B-16-001.