

Overview of FY2020 NOAFS Citing Response Action Performance Standard (RAPS)

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This author reviewed the Response Action Performance Standard (RAPS) (at 310 CMR 40.0191) subset of the FY 2020 MassDEP (the Department) Notices of Audit Findings (NOAFs) to see what actions were cited with violations. A total of five NOAFs with Notices of Noncompliance (NON) were identified as being associated with RAPS, the same number as we found during last year's review. Three of these NONs were issued by CERO and two by WERO; RAPS was not cited in the NOAFs issued by NERO or SERO.

The LPC has been tracking two types of circumstances that generally lead the Department to call out a RAPS violation:

Type 1: The Department believes that the work done was clearly not scientifically defensible or did not follow technical guidance recognized by the Department and cited at 40.0191.

Type 2. The Department states that the requirements for filing a Permanent Solution Statement (40.1004(1)(b)) have not been met due to significant inadequacies in disposal site characterization.

This year there were only Type 1 findings.

Site 1: ROS Status Submittal – This gasoline site had a Remedy Implementation Plan (RIP) which proposed Soil Vapor Extraction (SVE) with Bio-Sparge, with no mention of Monitored Natural Attenuation (MNA). Although a Remedy Operation Status (ROS) Opinion was never submitted, Phase V Status Reports were submitted as ROS Status Reports after two years of running the remedy. Over the course of the next four years the reports described MNA monitoring being conducted although there was no MNA Operations Maintenance and/or Monitoring (OMM) Plan submitted. Then a status report indicated that the monitoring of secondary MNA parameters was going to be terminated, and that thenceforth "concentrations of dissolved-phase hydrocarbons would be used to evaluate the effectiveness of both active and passive remedial methods at this site." Four years after that, the active SVE-AS systems were shut down and a status report declared the site would be remediated by MNA.

The Department cited two violations. The first was failure to submit a Revised RIP for a significant change in remedy – from active remediation to MNA - and to provide an OMM Plan for MNA (40.0871(6)). The second violation included a) a violation of RAPS (40.0191(2)) for not considering relevant policies and guidelines issued by MassDEP and EPA by failing to develop data adequate to support the premise that MNA was occurring or to justify foregoing geochemical monitoring, and b) a violation of 40.893(2)(b) for not adequately supporting the assertion that the MNA program was adequately designed to achieve a PS. The absence of an ROS Opinion submittal was mentioned but not cited as a violation.

- ▶ RAPS TAKEAWAY #1: Changing remedies, including a shift from an “active” remedy to MNA, requires adequate documentation to demonstrate that the new remedy is appropriate, and an OMM Plan is necessary if MNA is to be considered an active remedy.

Site 2: ROS Status Submittal – This gasoline site with ROS had a history of noncompliance, with prior NOAFs in 2013 which required retraction of an RAO and in 2015 for missing status reports. The FY2020

NOAF was the first to cite RAPS regarding the selection and implementation of MNA as the site remedy. Cleanup work had started with a 2003 Remedial Action Plan submittal proposing MNA to achieve a Permanent Solution within 1 to 10 years. The FY2020 NOAF noted the implementation of MNA was not following the OMM Plan and was considered a violation of 40.0891(3). Wells included in the OMM Plan were destroyed and not replaced, which was considered a violation of 40.0872(b) due to the Comprehensive Response Action not meeting design and performance specifications. The FY2020 NOAF also noted that the program of MNA had been running for 16 years and had not achieved the remedial goal, despite projections in 2003 that it would be done within 10 years. Failure to restore groundwater, where feasible, to the applicable standards of quality within a reasonable period of time to protect existing (Zone II) and potential uses of such resources is a violation of 40.0191(3)(d). Failure to adequately design the remedy to achieve a permanent solution was cited as a violation of 40.0893(2)(b). The inadequacy of the MNA program was cited as violation of 40.0191(2)(a) for not following relevant policies and guidance on MNA. Finally, the failure to maintain frequency of sampling to ensure the effective performance and integrity of the remedial action was cited as a violation of 40.0891(5).

- ▶ RAPS TAKEAWAY #2: Progress of a remedy under ROS should be monitored following the OMM Plan, and corrective actions should be taken if the remedy is taking longer than projected in the Plan.

Site 3: Temporary Solution Statement – Historical releases of oil and PCBs in a scrap yard had been reported and assigned an RTN. A few years later, a fire occurred within a building at the scrap yard. The Release Notification Form (RNF) for the fire noted a greater than Reportable Quantity (RQ) release of oil and an unknown quantity of PFAS in the AFFF used to control the fire. A Permanent Solution Statement (PSS) was filed for the fire event RTN which neither included testing for PFAS in environmental media nor justified an assumption that PFAS was not present in the firefighting foam. The Temporary Solution Statement (TSS) was subsequently filed for response actions related to the historical releases.

The Department did not criticize the PSS for the absence of PFAS data, even though PFAS had been listed on the RNF for that RTN. Instead, the NOAF rejected the LSP's assertion that the fire release and the historical yard contamination were not comingled, and focused on the absence of PFAS testing in the TSS. The NOAF cited 40.0191(2)(a) for inadequate site characterization and consequent inadequate risk characterization for the substantial hazard evaluation supporting the TSS.

- ▶ RAPS TAKEAWAY #3: Don't report an OHM as having been released and then fail to evaluate its nature and extent, unless it can be demonstrated that the OHM was not in fact released.

Site 4: Permanent Solution Statement – This site was a residential oil release where soil was excavated down to 7.5 feet. No further soil excavation could be conducted due to structural concerns. LNAPL was observed in wells in which groundwater was at 14 feet. LNAPL extraction and surfactant flushing were conducted to treat soils between 7.5 feet and the water table. However, no samples were collected below 7.5 feet before or after treatment to characterize soils in the zone in which LNAPL had been observed in the wells.

RAPS 40.0191(2)(b) and (c) were cited in the NOAF for lack of representative soil characterization data within the LNAPL zone to support the risk characterization for the Permanent Solution. Headspace screening data from soil in that interval was used to estimate an exposure point concentration based on Total Petroleum Hydrocarbon (TPH) measurements in a soil sample elsewhere on the site. RAPS

40.0191(2)(a) was cited for not following the *MADEP VPH/EPH Approach* guidance because TPH analysis, rather than VPH analysis, was used to characterize soils with headspace screening values greater than 100 ppmv.

- ▶ RAPS TAKEAWAY #4A: OHM concentrations should be measured in media within treatment zones after remedy implementation to represent the Site conditions in support of a Permanent Solution.
- ▶ RAPS TAKEAWAY #4B: According to VPH/EPH guidance, headspace screening data >100 ppmv for a petroleum release is an indication that VPH analysis must be conducted for site characterization.

Site 5: IRA Status Report - Chlorinated solvent vapors were detected in residential dwellings at concentrations greater than the Indoor Air Threshold Value (TVr), creating a Critical Exposure Pathway (CEP). The Department issued an Interim Deadline Letter (IDL) requiring the PRP to submit a Revised Immediate Response Action (IRA) Plan describing CEP response actions. Instead, an IRA Status Report was submitted by the deadline making the point that there was no Imminent Hazard posed in the residences and therefore urgent response actions were not required. RAPS 40.0191(2)(a) was cited for failure to follow guidance for timely response actions to address CEP conditions as stated in the Vapor Intrusion Guidance and in the IDL.

- ▶ RAPS TAKEAWAY #5: Vapor intrusion guidance establishes that, to the extent feasible, timely response actions to mitigate CEP exposures are a priority even when they do not pose a significant risk.