Findings from Review of Fiscal Year 2019 NOAFs
Related to Downgradient Property Status

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In fiscal year 2019 (FY19) there were four Massachusetts Department of Environmental Protection (MassDEP) Notices of Audit Findings (NOAFs) related to Downgradient Property Status (DPS) filings. All four NOAFs cited one or more violations of the Massachusetts Contingency Plan (MCP) requirements for asserting DPS (and thus were also Notices of Noncompliance), and in three of the four cases MassDEP required either the termination or revision of the DPS submittal. This is consistent with FY18, in which four DPS submittals were likewise audited and all four were likewise found to be non-compliant. Moreover, as in FY18, the most common violation cited in the FY19 DPS NOAFs was the failure to adequately demonstrate that the criterion for asserting DPS set forth at 310 CMR 40.0183(2)(b) had not been met—particularly by failing to rule out an on-site source for the groundwater contamination found at the site. This violation was cited in three of the four NOAFs (not surprisingly, those that required termination or revision of the DPS submittals), and in each of those cases the failure to rule out an on-site source for the groundwater contamination at the site was either the sole reason why MassDEP concluded that the requirement at 310 CMR 40.0183(2)(b) had not been met or it was the first reason cited.

- In the first NOAF reviewed, MassDEP noted that available data indicated that releases of chlorinated volatile organic compounds (CVOCs), the constituents of concern for this particular DPS submittal, had occurred at the subject property in the past, having been detected in an oil/water separator, in the outfall for the separator, and in a recovery well located downgradient of several potential source areas. According to MassDEP, this information indicated that the criterion at 310 CMR 40.0183(2)(b) was not satisfied. Secondly, MassDEP determined that the owner of the subject property had formerly owned a portion of the upgradient property that was identified in the DPS submittal as the most likely source for the CVOCs in groundwater at the subject property. As a result, the NOAF asserted that the owner of the subject property *"has a clear affiliation with a person who owned the property from which a portion of the [DPS] release originated,"* which is a violation of 310 CMR 40.0183(2)(d). Lastly, since MassDEP was of the opinion that the above information *"has been publicly or readily available to [the owner of the subject property] since 2001"* and is therefore *"information which [the owner has] had 'knowledge' of since that time,"* MassDEP also determined that the owner of the subject property was in violation of 310 CMR 40.0186(2), which requires that MassDEP be notified within 60 days of gaining knowledge that the DPS criteria at 310 CMR 40.0183(2) are no longer being met. MassDEP required termination of the DPS Submittal in this case.

- In the second NOAF, MassDEP determined that insufficient information had been provided to support a conclusion that all of the DPS criteria at 310 CMR 40.0183(2) had been met. The NOAF cited three specific shortcomings of the DPS submittal:

  (1) **Potential on-site sources of CVOCs had not been ruled out.** Although the subject site had historically been used for automobile sales/service/body work,

shoe manufacturing, furniture sales and finishing, and elevator manufacturing, a detailed evaluation of the historical use, storage, and disposal of CVOCs at the site was not provided in the DPS Submittal.

(2) **The groundwater flow direction had not been adequately defined.** The NOAF noted that while the DPS submittal reported a relatively flat groundwater surface with flow in a direction supporting DPS, previous reports for the site had indicated a wide range of flow directions, spanning almost 180 degrees.

(3) **The investigation that had been performed was inadequate.** More specifically, the NOAF concluded that the investigation was inadequate to demonstrate that CVOCs were migrating onto the subject site from an upgradient source, in that CVOCs were either not detected or were detected at only low levels in the upgradient-most portions of the subject site and on potentially upgradient properties.

Based on the foregoing, MassDEP required either the revision or termination of this DPS Submittal.

- In the third NOAF, MassDEP noted that based on its Level 1 technical screening audit of the Permanent Solution Statement (PSS) for the site (which included an assertion of DPS for some or all of the on-site contamination), the DPS portion of the PSS had failed to address the need to conduct an Immediate Response Action (IRA) as required by 310 CMR 40.0183(4)(f). This shortcoming was particularly significant because, as noted by MassDEP in the NOAF, OHM concentrations in groundwater *"within the footprint of the existing building"* at the site had increased to levels above GW-2 standards during the last groundwater sampling event completed prior to submittal of the PSS/DPS. Although MassDEP did not identify this finding as a shortcoming of the PSS (presumably because that particular OHM was attributable to migration from an upgradient property), the NOAF did state that *"provisions to conduct an IRA vapor intrusion assessment in the future are required to maintain DPS."* (Note: Continued evaluation of the need to conduct an IRA is not specifically listed at 310 CMR 40.0185 as one of the requirements for maintaining DPS, but in this case such evaluation appears to have been required for maintaining DPS because (1) as noted above, it is a requirement for asserting DPS; (2) it had been omitted from the DPS Submittal; and (3) MassDEP elected not to require retraction of the DPS submittal.)

- In the fourth and final DPS-related NOAF, MassDEP once again found that the criterion for asserting DPS found at 310 CMR 40.0183(2)(b) had not been met, and in this case MassDEP invalidated the DPS Submittal outright. The NOAF provided eight lines of evidence for invalidating the DPS Submittal, most of which were related to the historical use, storage, and handling (including on-site recycling) of certain OHM at the subject property, known or potential releases of that OHM at the property, and potential migration pathways by which the released OHM could have impacted environmental media at the property. In particular, the NOAF noted the following:

  (1) Years earlier, the primary OHM in question (trichloroethene [TCE]) had been detected in shallow soil on the outside of a containment area in which an aboveground TCE storage tank was located, indicating to MassDEP that *"there is*

evidence of surficial TCE releases at the site." Although the concentrations detected were below the RCs applicable at the time of sampling (1995) and they only marginally exceed the current RCs, MassDEP determined that additional response actions are necessary to assess the release, presumably because no samples had previously or since been collected below the containment area itself (which the NOAF noted exhibited cracks and leaked in the 1990s).

(2) TCE was detected at all four of the sub-slab soil gas sampling locations within the site building, but the highest concentrations were detected in the two samples collected from the location closest to the aforementioned TCE tank. For that reason and because (according to MassDEP) the TCE concentrations in groundwater at all four soil gas sampling locations were *"comparable,"* the NOAF concluded that the *"significantly elevated"* concentrations of TCE in soil gas near the TCE tank *"strongly suggests that a release or releases from the TCE tank have occurred and that additional response actions are necessary to address this release(s)."*

In addition to the foregoing, the NOAF noted that the groundwater contour map included in the DPS Submittal depicted groundwater flowing, in most places, from the subject property toward the adjacent property (identified in the DPS Submittal as the source of the CVOCs in groundwater at the subject property). The NOAF also noted that, although the groundwater contour map appeared to imply (using a dashed contour line) that groundwater flow was toward the subject property in the vicinity of the TCE tank, no groundwater elevation data was presented to support such an interpretation. MassDEP contrasted the single groundwater flow map provided in the DPS Submittal with the multiple groundwater flow maps produced in MCP submittals for the adjacent property, which the NOAF noted were based on *"more robust data,"* including wells at both properties and groundwater elevations measured during both high and low tides. Based on the latter, the NOAF concluded that *"the [subject property] is not completely downgradient."*