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## Maine DEP Response to public comments on the July 10, 2015 edition of the Supplemental Guidance for Vapor Intrusion of Chlorinated Solvents and Other Persistent Chemicals

Revision of December 3, 2015  
Staff Contact: David Wright

1. COMMENT: How do Responsible Parties know whether their site fits the 10 or fewer inhabitable buildings at risk and is subject to the DEP Vapor Intrusion (VI) Guidance versus EPA VI Guidance?

RESPONSE: The first thing to note is that DEP’s guidance supplements the EPA guidance, rather than replaces it. One of the main differences between the EPA guidance and the DEP supplemental guidance is that the public outreach recommendations in the DEP guidance are scaled back and more intimate than for larger sites. It works best for small sites to keep the communications one-on-one with property owners and the Town. However, when a site may be large, it is important to identify all interested parties, and provide them with as much information as possible, as early as possible, to avoid future complications.

At the Beal’s Linen Dry-cleaning site in Auburn, DEP took a hybrid approach. DEP initially undertook broad outreach akin to the EPA guidance, alerting any interested persons in the area, since the early information indicated the potential for widespread problems. Then as the investigation progressed, we determined that only 2 to 3 buildings were actually impacted, and we were able to scale back the public outreach.

To date DEP has been involved in Vapor Intrusion (VI) investigations of approximately 45 drycleaner sites. All of these sites have fit the 10 or fewer buildings. The only VI sites that could have tripped the 10 or more buildings threshold are the Beal’s site described above, a couple of Superfund Sites<sup>1</sup>, and a couple of large RCRA 2020 list sites<sup>2</sup>. For the Superfund and RCRA 2020 sites, we used the existing outreach protocols

<sup>1</sup> The National Priorities List of sites for Maine can be obtained from EPA-Region I’s website “Waste Site Cleanup & Reuse in New England” at:

[http://yosemite.epa.gov/r1/npl\\_pad.nsf/SearchAllSitesByName?SearchView&Query=%20FIELD%20FS\\_State%20CONTAINS%20Maine%20AND%20%20FIELD%20FS\\_SiteType\\_Disp%20CONTAINS%20%22Long%20Term/National%20Priorities%20List%20\(NPL%22&SearchMax=1000&SearchWv=0&SearchFuzzy=0&count=30&start=1&SearchOrder=4&target=top](http://yosemite.epa.gov/r1/npl_pad.nsf/SearchAllSitesByName?SearchView&Query=%20FIELD%20FS_State%20CONTAINS%20Maine%20AND%20%20FIELD%20FS_SiteType_Disp%20CONTAINS%20%22Long%20Term/National%20Priorities%20List%20(NPL%22&SearchMax=1000&SearchWv=0&SearchFuzzy=0&count=30&start=1&SearchOrder=4&target=top)

<sup>2</sup> EPA’s list of RCRA Corrective Action Sites in Maine can be obtained from EPA-Region I’s website “Waste Site Cleanup & Reuse in New England” at:

[http://yosemite.epa.gov/r1/npl\\_pad.nsf/SearchAllSitesByName?SearchView&Query=%20FIELD%20FS\\_State%20](http://yosemite.epa.gov/r1/npl_pad.nsf/SearchAllSitesByName?SearchView&Query=%20FIELD%20FS_State%20)

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for that site, which parallel EPA's VI guidance. So it is fair to say that the rebuttable presumption is that the Maine Guidance will apply to all VI sites in Maine. A foot note to this effect was added to the guidance based on this comment.

2. COMMENT: What is DEP's expectation for a "typical" VI assessment? How many and what frequency of soil gas and subslab samples are necessary so that a consultant can offer a reasonable budget to his client? Can scenarios be made available that represent the "typical" VI assessment?

RESPONSE: A second major difference between the EPA VI Guidance approach and the approach most of the recent investigations at smaller Maine VI sites is the length and breadth of the investigation. DEP has learned that we can focus on one or two major sampling events, with limited follow-up sampling. That is because DEP has found at Maine's small sites that there may be an order of magnitude change due to temporal variation, rather than the 3 orders of magnitude change witnessed at the large EPA research sites employing continuous monitoring. Maine DEP has seen seasonal variation at small sites, but typically the variation is all above or all below the risk guideline, rather than bouncing below and above the guideline. So DEP believes that we can often rely on a single soil gas / subslab / basement / indoor air sampling event to get 80% of the information about a site, which is usually enough to make an informed decision regarding necessary mitigation. EPA's approach starts with more media, including bedrock, and advocates multiple sample events, quarterly over several years, to determine if there is a VI risk. This is appropriate for large sites (more than 10 impacted buildings). However, most of Maine's VI problems with persistent compounds stem from dry-cleaning sites. Generally at these sites we find unacceptable risk in the old dry-cleaning building and co-located structures, or in buildings built on the location of the former drycleaner. A handful have impacted off-site buildings, up to 3 or 4 houses, usually from migration of soil gas along preferential pathways, but on occasion from a groundwater plume that acts as a secondary source.

So for the smaller sites, site characterization is important, but most information is gathered in the first day or two. EPA is overly prescriptive for small sites; we can get enough information within a shorter amount of time. Bedrock wells are not always necessary. The study should address possible exposure from groundwater, vapor and soil, based on a CSM and multiple lines of evidence, not just sample results.

We added language to section 4.3.5.4 "Number of Sample Events and Temporal Variation" to reflect these findings. However, it is beyond the scope of this guidance to define prescriptive sampling recommendations. DEP is considering a future publication to summarize the information gathered on all the sites to date in an effort to harmonize sampling requirements at similar sites. However, as we undertake this project it has become clear that there is no clear "typical site", since there is such a mix and match of major factors influencing VI potential such as the length of VOC use, release history, buildings on site or not, development setting, geology setting, integrity of sewer system, etc.

DEP also intends to follow-up this guidance with training for staff and consultants that includes case studies showing typical VI investigation approaches, likely in the spring of 2016.

3. COMMENT: NH has GWSL 2 Standards that serve as indicators of VI potential. Maine only has soil gas triggers. Can Maine add groundwater screening levels that would indicate when a VI study should be conducted?

RESPONSE: Sampling groundwater is usually done as part of a Phase II Environmental Site Assessment (ESA) or Remedial Investigation (RI), with soil samples being collected concurrently. When the site Contaminants of Potential Concern are persistent VOCs, Maine DEP recommends also collecting soil gas at the same time, since the marginal costs will be low. If for some reason you have groundwater results but not soil gas results, the groundwater attenuation factors in the EPA guidance can be used as one line of evidence in the Conceptual Site Model to determine how best to fill the VI data gap.

4. COMMENTS relating to section 3.4.2.

- a. Can analysis be tailored (reduced) based upon the particular Contaminants of Potential Concern (COPCs) for a site?
- b. Section 3.4.2 (Data Quality Objectives) states that, "...the DQOs must be set at analytical detection limits such that reporting limits are at least three-fold less than the indoor screening criteria in Table 2 of the RAGs." In the case of some analytes listed in Table 2, this requirement will only be achievable by selective ion monitoring (SIM) analysis, which is a special analytical technique and carries increased cost to the regulated community. For certain analytes listed in Table 2 of the RAGs, this requirement may not even be achievable by SIM or other special techniques. It would be helpful if this statement could be modified or some clarification provided, to make it clear that special analytical techniques will not be required by the department.
- c. Requiring the RLs to be 3 fold lower lowers the confidence in the reported concentrations. In addition, reporting RLs below the lowest calibration standard may require the laboratory under their Quality system to flag the data as estimated concentrations. Attached is our evaluation of our current ability to meet the RL's in Table 2 RAGs. For a number of the compounds SIM data would need to be reported. This would have the effect of reducing the quality of the data. Reporting by SIM reduces the target ions that are used to evaluate the presence of the target analyte. This may lead to false positives and negatives, while, increasing the cost of analysis. Even using SIM there are still compounds that currently we do not meet the residential indoor air screening values. Adding the 3 fold lower RL as a DQO increases that number significantly.

RESPONSE: In response to these comments, we have dropped the three-fold factor, and instead rely on the lab certification process to ensure accurate results. We have also added a paragraph noting that SIM analysis is usually required for indoor air in order to make an informed decision as to whether indoor air concentrations pose a risk or not. SIM reduces the number of analytes reported, but achieves the needed reporting limits for

the COPC that are typically of concern at Maine VI sites (See Maine VI guidance table 1). The lab should run full scan simultaneously with SIM to avoid false positives and negatives. We have also added language from the petroleum guidelines on how to handle cases where the COPC's risk-based remedial action guideline is below the Reporting Limit. Finally, we added a sentence recommending that when you are sampling an occupied space, you should have the sample canisters individually certified as clean. This takes time and adds additional cost, but avoids risk communication problems down the road.

5. COMMENT: Which type of sites/operations are associated with PFOAs and PFOS?

RESPONSE: It is beyond the scope of the RAGS to list the source and occurrence of Perfluorinated Compounds (PFCs). PFCs are emerging contaminants and information is quickly changing. EPA's fact sheet, "Emerging Contaminants – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)" (March 2014) is a good primer with references for more information, and is available on EPA's website at:

[http://www2.epa.gov/sites/production/files/2014-04/documents/factsheet\\_contaminant\\_pfos\\_pfoa\\_march2014.pdf](http://www2.epa.gov/sites/production/files/2014-04/documents/factsheet_contaminant_pfos_pfoa_march2014.pdf).