

**Attachment 1**  
**LSPA Comments on Historic Fill/Anthropogenic Background DRAFT Technical Update 2016**  
**July 14, 2016**

Provided below are the LSP Association’s (LSPA’s) comments on the above-named draft technical update. Page numbers refer to the Public Comment Draft made available electronically in pdf. Every effort has been made to state the issue of concern, provide a specific example wherever possible and propose suggested language changes where appropriate.

Historic Fill/Anthropogenic Background DRAFT Technical Update		
Page No.	Section	Comment
<b>1</b>	<b>Background</b>	The second sentence states that background is a condition of No Significant Risk. The LSPA suggests that it is more accurate that background constituents are not subject to 21E and therefore eliminated from risk characterization. Therefore we suggest that MassDEP eliminate the following portion of the 2 <sup>nd</sup> sentence “By Definition, Background is a condition of No Significant Risk and”.
<b>1</b>	<b>Purpose</b>	Suggest clarifying the differences between “OHM” and the words “chemicals” and “contamination”, unless they are being used interchangeably. If the latter, suggest using only one term and using it consistently. To clarify, this sentence can be simplified as: “Since certain OHM found in Anthropogenic Background may also be eligible for reporting exemption or associated with another regulated release, it is important to conduct due diligence to evaluate the source of the OHM using readily available lines of evidence.”
<b>2</b>	<b>Historic Fill Considerations</b>	The LSPA is concerned about the language at the end of the first paragraph that refers to “sub areas” and “significant horizons.” These types of sites/fill materials are typically very heterogeneous. Assessment of small pockets of fill in a large property is typically not justified from a risk/cost benefit perspective. This section might be an opportunity for MassDEP to provide a rule of thumb or general guideline to help clarify what is meant by “primarily” in the definition of Historic Fill. The LSPA suggests that “primarily” be interpreted as > 50%.

2	<b>Historic Fill Considerations</b>	The last paragraph of this section contains the only mention of groundwater in the document. It mentions that OHM in groundwater at levels of concern is addressed in later sections, but it isn't. LSPA members report seeing incidences of groundwater reportable concentration exceedances in wells installed in fill. The LSPA requests that MassDEP acknowledge this potential condition and include language in this technical update to address such scenarios. The LSPA recommends that, in this technical update, MassDEP allow for the possibility that a technical justification may be presented to attribute groundwater issues to Historic Fill conditions.
2	<b>Metals (et al.)</b>	The technical update includes several statements about concentrations of certain analytes that are not likely to be present at concentrations in fill that trigger risk thresholds including beryllium, cadmium, copper, nickel, zinc. The LSPA recommends that consideration be made that, due to the small aliquot of sample analyzed, the potential for high or low concentration bias exists in any one sample. The LSPA feels strongly that multiple lines of evidence should be able to overrule individual data points that are inconsistent with the conceptual site model.
3	<b>Lead</b>	From the Guidance: "A thorough site history indicating that no other source(s) of lead at the property is contributing significantly to the observed conditions is a critical component to determine Historic Fill." The preceding comment appears to set an unreasonably high standard and restriction for making a case that the presence of lead is attributable to Historic Fill at a property that may have included a commercial or industrial use potentially associated with lead. (i.e. any use that could potentially be associated with lead then eliminates the property from consideration for Historic Fill designation). The LSPA believes that, as in preceding sections, use of the property and potential sources should be noted and discussed, but multiple lines of evidence and consistency with the conceptual site model should be able to be provided to support a Historic Fill designation.
3	<b>Hydrocarbons</b>	This paragraph includes broad statements assuming consistent degradation of VPH and EPH compounds independent of initial concentrations and deposition environment. The LSPA suggests that the paragraph be edited to acknowledge that site specific information and conditions need to be evaluated in making these determinations to avoid biasing a review of a submittal.
4 and 9	<b>Coal Ash</b>	This section states that lead is typically less than 200 mg/kg in coal ash. Table 1 on page 9 seems to contradict this by listing that the background concentration of lead in soil containing coal ash or wood ash (associated with fill material) is 600 mg/kg.

4	<b>Arochlor PCBs</b>	<p>This appears to be overly restrictive and eliminates the presence of PCBs as Historic Fill. For reasons noted above (aliquot size and potential high sample bias) and uncertainty in a process generating a fill material composition (building materials have been known to include PCBs), a fill material sample could include PCBs at a concentration of concern. The LSPA believes that multiple lines of evidence should be considered in these evaluations, not an exclusion by compound.</p>
4	<b>Arochlor PCBs</b>	<p>There is inconsistency and lack of clarity in this document regarding low concentrations of PCBs as a potential component within Historic Fill.</p> <p>This section states “Absent a release, it is unlikely that PCBs would be present in “Historic Fill” at concentrations which consistently and/or significantly exceed 1 mg/kg. The USEPA (1990) considers PCB’s at concentrations between 0.1 and 1.0 mg/kg to be background”</p> <p>Under the “Site Assessment” section, page 4 end of first paragraph, it states “Soil containing ... polychlorinated biphenyls... is not Historic Fill.”</p> <p>Table 2 of the document is also inconsistent, where under the column “Historic Fill”, PCBs are identified as “No”, but the comments state “Unlikely that PCBs would be present in ”Historic Fill” at concentrations which consistently and/or significantly exceed 1 mg/kg. Background – PCBs between 0.1 and 1.0 mg/kg (USEPA – 1990).”</p> <p>The LSPA agrees that concentrations less than 1.0 mg/kg (which is less than MassDEP Reportable Concentration, Method 1 S-1 standard, and the most conservative TSCA Residential Cleanup Standard) may possibly be attributable to background, and therefore may potentially be found in Historic Fill, provided there is no other evidence that the concentrations are attributable to a release condition at the Site.</p> <p>The LSPA is concerned about opportunities for misinterpretation and requests that MassDEP clarify. The PCB entry in Table 2 could also be changed from “NO” to “Possibly.”</p>
4	<b>Site Assessment</b>	<p>In paragraph 2, the source of Table 1 should be referenced for continuity: 2002 Technical Update</p>

		entitled “Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil”
5	<b>Subsurface Investigations</b>	The LSPA recommends that this section state that delineation of fill to depths more than 15 feet below ground surface is typically unnecessary. It is not relevant to risk or worth the expense to go any deeper than 15 feet below ground surface in any delineation attempt.
5	<b>Subsurface Investigations</b>	From Guidance: “Excavations/borings should be extended at least two feet into presumed native soils or until bedrock/refusal is met.” This may be necessary in some locations, but may be excessive in others. The level of effort outlined in this section needs to be determined by the LSP and responsible party, and include consideration of the incremental risk and the cost feasibility. Therefore, setting this as the default guidance standard could impose unnecessary additional field work effort. The LSPA recommends this revision: “The depth of excavations/borings may extend at least two feet into presumed native souls or until bedrock/refusal is met. In other cases, this may not be necessary. The sampling and analytical program for each site will need to be designed to be representative and characteristic of site conditions.”
5	<b>Subsurface Investigations</b>	The Guidance states that at a minimum the MCP 14 metals and PAH analysis should be conducted. However, if these are not a concern for the property or the fill material, then additional effort to sample and analyze for these seems unnecessary. If, based on multiple lines of evidence, the site-specific fill assessment is only concerned with determining the extent of lead paint chips in soil, then this should be sufficient to characterize the fill material extent. If the fill is characterized by an indicator compound, even if other compounds are all present as documented by previous sampling, then the need to continuously collect additional samples for a wide array of analyses is not necessary.
6	<b>Subsurface Investigations</b>	XRF – Please spell out at first use.
6	<b>Data Compilation</b>	This section should acknowledge that some data within an Historic Fill analysis may exceed the 90 <sup>th</sup> percentile, by definition, concentrations presented in Table 1. The reference to the Table-1 90 <sup>th</sup> percentile values being considered a maximum, “not to exceed concentration” should be removed. The subsequent sentences do a good job of explaining that additional effort to present a valid data set may be required if values exceed this 90 <sup>th</sup> percentile.
6	<b>Data Compilation</b>	Please clarify that the values within Table 1 that are relevant for a Historic Fill evaluation are the “Concentration in Soil Containing Coal Ash or Wood Ash Associated with Fill Material”. This is

		not currently identified in the document.
<b>6</b>	<b>Data Compilation</b>	<p>This draft technical update relies on the Table 1 values, and identifies the values as “not to exceed” concentrations. The document also includes a “Table 2 Historic Fill Evaluation Criteria.” Table 2 is not referenced anywhere in the document narrative. Table 2 identifies possible Historic Fill characteristics and then presents criteria to assist with evaluating whether or not the fill material can be characterized as Historic Fill, including values for some compounds.</p> <p>The LSPA requests that MassDEP discuss Table 2 within the narrative of the technical update, likely under this Data Compilation section, and how/when MassDEP will be using Table 1 and Table 2. For example, as currently written, if a maximum concentration exceeds Table 1 levels, the document states that additional data is warranted. However, the maximum concentration may be well within a Table 2 value. Therefore, it seems reasonable to assume that MassDEP recommends that additional data is not needed. We request that MassDEP more explicitly explain the interplay between the two tables.</p> <p>As another example, Table 1 shows that arsenic concentrations in both natural soil and as “fill material” are 20 mg/kg. Table 2 of this document suggests a concentration range of &lt;100 mg/kg for evaluating arsenic in Historic Fill. It is unclear what the takeaway is here regarding how MassDEP will use these two tables and how LSPs should interpret them. The LSPA requests that MassDEP include an example or two along these lines in the technical update.</p>
<b>6</b>	<b>Data Compilation</b>	<p>The LSPA recommends that MassDEP not consider the Table 1 values as only “not to exceed” concentrations. We agree with MassDEP that including summary statistics as part of a Historic Fill evaluation (ie, range, min, max, average, median, etc.), can provide useful information about site conditions. However, suggesting that comparison to Table 1 be based on “not to exceed”, MassDEP is limiting the statistical evaluation to a maximum concentration comparison. Since MassDEP is acknowledging the value of additional data set statistics, Table 1 levels should not be viewed solely as “not to exceed” concentrations.</p>
<b>6</b>	<b>Data Compilation</b>	<p>The document states that “If contaminant concentrations in the Fill fall outside of those values, a higher level of effort, including additional data, would be warranted in order to provide a statistically valid data set”. Is “additional data” in this case referring to additional sampling and</p>

		laboratory analytical results, or referring to “additional justification” as discussed in the following sentence? Exceeding a Table 1 value should not necessarily require additional sampling and analytical results. If the existing data set is representative and provides sufficient characterization of site conditions, additional sampling and analytical testing should not be required.
<b>6</b>	<b>Conceptual Site Model</b>	Please capitalize the first “a” in the paragraph.
<b>9</b>	<b>Table 1</b>	Please reference the source of this table as in previous sections: 2002 Technical Update entitled “Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil”
<b>9</b>	<b>Table 1</b>	Table 1 should be revised so that column 2 “Concentration In Soil Containing Coal Ash or Wood Ash Associated with Fill Material” is more accurately labeled. The LSPA recognizes that is how the 2002 Technical Update reads and this technical update should reference the 2002 Technical Update. The purpose of this most recent document however is the characterization and evaluation of Historic Fill as a part of Anthropogenic Fill. At this point we need to stop mixing the concepts of coal ash and wood ash and Historic Fill. This table is to be used for guidance for Historic Fill, not coal ash/wood ash exclusions from reporting. It is important to include the compounds and concentration data presented in Table 1, but we recommend MassDEP revise this column as “Concentrations consistent with Historic Fill.”
<b>10</b>	<b>Table 2</b>	The statement that Asbestos cannot be Historic Fill appears to be inconsistent with the intent and definition of Historic Fill. Asbestos use in building materials was pervasive. If you have a material that meets every other definition of Historic Fill, but yet contains some building material debris or some amount of asbestos, to indicate that this material can no longer be characterized as fill appears to be against the intent of the technical update.
<b>10</b>	<b>Table 2</b>	EPH, PAHs, Metals – see previous comments pertaining to pages 2 and 3 of the technical update where the LSPA notes that it believes multiple lines of evidence should be able to be provided to support a Historic Fill designation, rather than a “not to exceed” concentration.
<b>10</b>	<b>Table 2</b>	Regarding the entry for “Non-volatile PAHs (pervasive use)”: MassDEP makes a point to distinguish between pyrogenic and petrogenic PAHs, but doesn’t indicate if petrogenic PAHs are excluded. If one looks at Table 1, some of these petrogenic PAHs are considered consistent with wood or coal ash. The distinction between pyrogenic (ash) and petrogenic (hydrocarbon source) is confusing. Table 2 should state that if the concentrations are consistent with those of Table 1, it’s considered Historic Fill, regardless of its derivation.

10	<b>Lead</b>	Site history should not eliminate the potential to determine a material is Historic Fill. This is another example of where additional language from MassDEP would be beneficial in explaining how best to use Table 2 and its intent in including it in the Technical Update
10	<b>PCBs</b>	Instead of “No” the document should indicate “Possibly.” This better captures that concentrations exceeding 1 mg/kg are unlikely in Historic Fill, but that additional lines of evidence may be provided that could support Historic Fill designation. The written description does include that it is “unlikely” to consistently and/or significantly exceed, but allows for room that this could occur.
10	<b>*Note</b>	This captures some of the LSPA’s concerns from the preceding comments, and perhaps MassDEP will address them in revisions to the Technical Update. However, the table wording is too definitive to then only be caveated below. Again, the LSPA urges MassDEP to include narrative in the Technical Update to describe the interplay between Tables 1 and 2, and how MassDEP intends to use the tables. Perhaps, instead of “No” in some cases it is more appropriate and accurate to write: “Unlikely but additional assessment with multiple lines of evidence can be used to support determination.”
12	<b>Exemptions</b>	Last sentence of document “Table 1 provides a one-page summary of the Historic Fill criteria and approximate concentrations of OHM to be expected. This should reference Table 2, not Table 1.