Soil Standards Stakeholder Process

Background – PAHs and Metals

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Rayna Laiosa – CCNJ/SRIN

John Brennan – CIANJ

Background PAHs & Metals

- Due to past industrial and human activities, as well as natural background, PAHs and metals are detected in the environment at concentrations well above the residential and non-residential standards and/or migration to groundwater screening level.
- Very common to detect “background” levels of PAHs and metals in soils

Background PAHs & Metals

- Often times PAHs and metals identified are unrelated to a discharge associated with operations of the site
- Burden on the Responsible Party and LSRP to prove contaminants are at background levels

Sometimes it is difficult to categorize the soil as Historic Fill and/or DAP

MADEP Background Levels of PAHs and Metals

Contaminant	NJDEP Draft Residential (ppm)	NJDEP Draft Migration to Groundwater (ppm)	MADEP [1]"Natural Soil" (ppm)	MADEP Concentration in Soil Containing Coal Ash or Wood Ash associated with Fill Material or other material consistent with MADEP regulatory definition of background (ppm)
Arsenic	19	19	**20**	**20**
Beryllium	160	0.7	**0.4**	**0.9**
Benzo(a)anthracene	0.20	0.71	**2**	**9**
Benzo(a)pyrene	0.20	NA	**2**	**7**
Benzo(b)fluoranthene	0.20	NA	**2**	**8**
Indeno(1,2,3-cd)pyrene	0.20	NA	**1**	**3**
Manganese	1900	NA	**300**	**300**

[1] Technical Update Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil Table 1 MADEP Identified Background Levels in Soil, May 23, 2002

MADEP is utilizing the 90th percentile value for each of the contaminants

Implications of Current & Draft Proposed PAHs and Metals

- Difficult to beneficially reuse soil from non-contaminated sites for off-site use
- Difficult to beneficially reuse concrete on-site/off-site
- Unable to locate or use clean fill material to remediate site
- Limited landfill space
- Remediating parties are often required to conduct detailed studies to demonstrate whether the soil in question fits the definition of historic fill and/or DAP.
- Slows the remedial process and causes redundant sampling and inefficiencies

Recommendations

- Develop background standards for PAHs and metals that are most associated with DAP & Historic Fill
  - Suggested methods:
  - Use NJDEP's existing HazSite Database to map background and existing PAHs and metals
  - Develop background level for PAHs and metals similar to the methodology utilized for Arsenic (Ambient Levels of Metals in NJ Soils May 2003) or MADEP methodology