Department of Natural Resources and Environmental Control (DNREC)
Remediation Section
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DNREC- Remediation Section Guidance for Analytical Data Usability Assessment for Programs Under Hazardous Substance Cleanup Act (HSCA)

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1.0 Purpose

The purpose of this document is to provide guidance for analytical data usability assessments for programs under Hazardous Substance Cleanup Act (HSCA). The Department of Natural Resources and Environmental Control's (DNREC) Remediation Section (formerly SIRS) determined several years ago that analytical data for HSCA programs including Voluntary Cleanup Program (VCP) and Brownfields projects would not require full 3rd party data validation as long as the analysis was performed by a Hazardous Substance Cleanup Act (HSCA) approved laboratory. The list of HSCA approved labs can be obtained at this link:
http://www.dnrec.delaware.gov/dwhs/SIRB/Documents/HSCA%20Approved%20Labs.pdf
However, the analytical results would require a data usability assessment to ensure that HSCA requirements and the site-specific Data Quality Objectives (DQOs) were met. This assessment would follow the same procedures as outlined in The National Functional Guidelines for full validation: https://www.epa.gov/clp/superfund-clp-national-functional-guidelines-data-review except only as they relate to any non-conformance items listed in the laboratory Case Narrative.

2.0 Requirements for Data Usability Assessment

2.1 The individual(s) responsible for performing the data usability assessment shall be trained in full data validation but will only apply a small fraction of time and effort compared to a full validation. This person shall be qualified to make decisions pertaining to the usability of the data.

2.2 All data must comply with HSCA requirements as spelled out in the HSCA Standard Operating Procedures for Chemical Analytical Programs (SOPCAP). Method requirements do not supersede HSCA requirements and will only apply if there is no relevant HSCA requirement.

2.3 If the lab reports data in error or fails to recognize a non-conformance and it is discovered during the assessment, the data reviewer must be prepared to determine if the error resulted in unusable results. The laboratory should be notified of their error by the party that contracted with the lab. If the lab fails to address the issue, DNREC should be notified.

2.4 There are too many possible non-conformance items to list within this guidance, but all items will have a relevant section within the HSCA SOPCAP or the National Functional Guidelines. The DNREC Remediation Section Chemist should be notified if there are any questions.

3.0 Critical Aspects of Data Usability Assessment

A critical aspect of data usability assessment is to include text indicating how any non-conformance items affected the site DQOs. Below are two examples:

The Laboratory Control Standard (LCS) recoveries were outside control limits high but no targeted compounds were found in the sample. **Therefore, this non-conformance had no effect on data usability for the affected samples.**

The LCS recoveries for many of the targeted compounds were less than 20% with lower control limits of at least 70% indicating a low bias for this analytical run. All the associated samples contained targeted compound detections near or above screening levels. The laboratory failed to re-extract and re-run the samples per HSCA protocol. **Therefore, because of the uncertainty in the results, it is our recommendation that these locations should be re-sampled and analyzed to obtain usable data.**

The above examples illustrate best case and worst-case scenarios. The most critical observation will be if/when a non-conformance item should result in the rejection of data. This is a rare occurrence, but it is why the person reviewing the data must be trained in the requirements within the National Functional Guidelines and the HSCA SOPCAP. There can be multiple examples in between that result in data usability or qualification **but the key point is to provide justification for the decision**.

4.0 Other items to consider for Data Usability Assessment

4.1 Matrix Spikes/Matrix Spike Duplicates (MS/MSDs) will often fail to meet laboratory control limits. This indicates a matrix effect on the instruments ability to recover spike compounds but should not be considered as evidence of a system failure (except for Antimony, see 4.3 below), as long as the LCS recoveries are within control limits, the affected results will be usable. Remediation decisions regarding sites should consider this and other factors.

4.2 Relative Percent Difference (RPD) values can be outside the control limits while the Duplicate percent recoveries are in control. This situation results from a laboratory establishing their Spike control limits with a wide acceptance range, which is allowed but needs to be noted by the qualified data usability evaluator.

Samples are allowed, per the HSCA SOPCAP, to have a limited number of surrogates out of control. The data reviewer must be familiar with the HSCA SOPCAP guidance regarding surrogates.

4.3 Antimony can precipitate out of solution during the digestion process while performing Environmental Protection Agency (EPA) methods 6010 and 6020. At least one of the MS/MSD recoveries

must be >/= to 35% for the results to be usable. If the results are < 35%, the samples will need to be digested by the “Hot Acid Digestion” method to obtain usable data.

4.4 Non-conformance items that would otherwise result in some sort of corrective action or additional analytical work may in fact not require that additional step if other site contaminants are already driving a remedial decision and the acquisition of additional data would have no effect on that decision. If a recommendation that corrective action or additional work is not needed, then a detailed justification should be provided in the report submitted to DNREC-RS for review and approval.