



CDM FEDERAL PROGRAMS CORPORATION

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PROJECT: ARCS II Contract No. 68-W9-0024
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SUBJECT: Draft Assessment of PRP Data Validation Activities
Virgin Island Chemical Site
St. Croix, U.S. Virgin Islands

Dear Ms. Henry:

CDM FEDERAL PROGRAMS CORPORATION (CDM Federal) has completed its evaluation of Harding Lawson's data validation of samples collected during the Virgin Island Chemical Remedial Investigation in St. Croix, Virgin Islands. This evaluation will be finalized and incorporated into the Final Oversight Summary Report.

If you have any questions concerning this letter report, please feel free to contact me at (212) 393-9634.

Sincerely,
CDM FEDERAL PROGRAMS CORPORATION

Pamela J. Philip
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Work Assignment Manager

cc: A. Devine, EPA
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**DRAFT DATA ASSESSMENT
OF
PRP DATA VALIDATION ACTIVITIES
VIRGIN ISLAND CHEMICAL SITE
ST. CROIX, VIRGIN ISLANDS**

Data collected during the Virgin Island Chemical Remedial Investigation and analyzed by Pace Laboratories was validated by Harding Lawson. CDM Federal reviewed the results of five groundwater and ten soil samples to ensure that the validation procedures utilized complied with Region II data validation protocols. The Region II data validation standard operating procedure (SOP) for organics was used as a reference guide during CDM Federal's assessment.

Harding Lawson's validation generally conformed to Region II protocols with no serious deviations noted that would effect the reported results. However, the following discrepancies were noted in the validated analytical results.

GROUNDWATER SAMPLES

Groundwater results for low level organics and pyridine were evaluated. A review of the validated data indicates the samples were appropriately validated. However, the following specific discrepancies were noted:

Volatile Organic Compounds:

During the initial calibration of 1/31/95, the analyte methylene chloride had percent relative standard deviation (%RSD) greater than 30%. All affected samples should have been qualified as estimated (J). However, samples MW0001, MW0003, MW0005, MW0101, RBGW02 and TB0216 which have positive methylene chloride results, were not qualified as estimated. It is noteworthy that analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibrations criteria (Page 15 of 51, SOP Low Concentration Water, Region II). Therefore, the analyte methylene chloride should have "UJ" qualifications (and not only "U" qualification) in the samples indicated above.

Semi-Volatile Organic Compounds:

The semi-volatile analytical results were appropriately validated. The only discrepancy is the target compound list (TCL) compound dimethylphenol which was listed as "TIC" and qualified "JN" instead of being rejected (R) in sample MW001.

Pesticides/PCB:

The analytical results for the pesticide/PCB fraction were appropriately validated. However, the following discrepancies were noted. Samples MW0001RE and MW0101RE which were previously

qualified as estimated "J" for holding time exceedance also have the surrogate (system monitoring compound) tetrachloro-m-xylene (TCX) recovery of zero. Region II Data Validation SOP calls for the rejection of nondetected analytes and the estimation of positive results (hits) when any system monitoring compound recovery is less than 10%. Therefore, all nondetected results in samples MW0001RE and MW0101RE should have been rejected.

The system monitoring compounds tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) recoveries are above and below the QC limit, respectively, in sample MW0003. The Region II Data Validation SOP calls for estimation of "hits" when both surrogates (TCX and DCB) recoveries are above QC limit and estimation of all results (nondetects and hits) when both surrogate recoveries are greater than 10% but below QC limit. This is a situation where professional judgement is utilized to estimate all results. Therefore, sample MW0003 should have been estimated.

The analytes beta-BHC and gamma-chlordane have percent difference (%D) that are both greater than 90%. Region II Data Validation SOP requires a rejection of a positive result when the %D > 90. Therefore, these two analytes should have been rejected in sample MW0001RE.

The analytes 4,4'-DDE, endosulfan sulfate, endrin ketone and endrin aldehyde should have been qualified "JN" for %D > 50 < 90 in sample MW0101RE as per Region II Data Validation SOP.

All positive analyte results which were flagged with a "P" qualifier by the laboratory should have the "P" flag crossed out after data validation qualifiers have been added.

For samples which were reanalyzed, the data reviewer should have indicated on the Form I, which sample the data user should use and cross out the one not to be used.

SOIL SAMPLES

Soil sample results for Target Compound List organics and pyridine were evaluated. A review of the validated analytical data for the ten soil samples indicated that the samples were appropriately validated. However, the following specific discrepancies were noted:

Volatile Organic Compounds:

The analyte xylene (total) exceeded the instrument calibration range in sample B16008 and has a result greater than five times the associated blank concentration. Therefore, the laboratory "B" qualifier should have been crossed out and xylene (total) qualified as estimated. Also, the laboratory "B" qualifier on xylene (total) in samples B10101, B12426, and acetone in sample F31415 should have been crossed out since the analyte concentrations are greater than five times the associated blank concentrations.

During the initial calibration of 2/2/95, Instrument F, methylene chloride had percent relative standard deviation (%RSD) greater than QC limit. All associated samples with positive methylene chloride results should have been qualified as estimated (J). Per Region II Data Validation SOP, all analytes qualified "U" because of blank contamination criteria are still considered hits during the calibration. Therefore, methylene chloride results should have been qualified as estimated (UJ) in samples B10001, B10101, B12426, C10001, C11618, C11820, C12022, D400001, D41416, and D42022.

During the continuing calibration of 2/9/95, the analyte 2-hexanone had percent difference (%D) greater than 90% (%D=102.6). Region II SOP for data validation calls for a rejection of nondetects when %D > 90. Therefore, a 2-hexanone result should have been rejected in sample B10001. Also, as per Region II Data Validation SOP, the analytes 2-butanone and 2-hexanone in samples C10001, C11618, C11820, C12022, D40001, D41416, and D42022 should have been rejected for %D > 90.

The "TIC" compound 1,1,2-trichloro-1,2,2-trifluoromethane (antifreeze) is a laboratory contaminant and should have been rejected in sample SB10001, B10101, B12426, C0001, F21820, and F30001.

Pesticide/PCB:

Both the matrix spike and matrix spike duplicate recoveries were outside QC limit for endrin. Region II Data Validation SOP calls for no action based on matrix spike data alone. However, using professional judgement, the matrix spike data may be qualified: if qualified, the qualification is limited to the matrix spike sample. Therefore, only sample F30001 should have been qualified for endrin recovery outside QC limits (all other samples in the SDG should not have been qualified for endrin). Moreover, endrin rejection in all samples is too strict a professional judgement call (the results should have been estimated).

Under compound identification, the results for endrin, endrin aldehyde, alpha-chlordane, and gamma-chlordane in sample F30001 should have been rejected for percent difference between the two columns being greater than 90%. Also, the laboratory "P" qualifier on the analytes indicated above should have been crossed out in sample F30001.

On page 7 of the data validation report, it was indicated that "the results in the above listed investigative samples were qualified as estimated (J)." Samples C10001, F21215 and F3001 were qualified for surrogate recoveries outside QC limits. Per Region II Data Validation SOP, the analytical results are qualified only when both surrogates are outside QC limits or when the recovery for any surrogate is below QC limits of 10% recovery. Therefore, samples indicated above should not have been qualified as estimated for surrogate QC failure.

There are two Form Is each for samples S00012 and S00127 due to reanalysis. Both samples were validated. There should have been an indication of which of the validated Form Is are to be used in accordance to Region II Data Validation SOP.