



MEMORANDUM

TO: T. H. Baylis Chemical Site File

FROM: Gayle Gleichauf, Roy F. Weston, Inc., Technical Assistance Team (TAT) 99

DATE: November 6, 1992

RE: Data Review For Special Analytical Services, T.H. Baylis site
TDD #01-9208-L1, PCS #0319 (Contract #68-WO-0036)
Analytical Support Services, TDD #01-9210-48A, PCS #4068, M0102

Samples were collected from the T.H. Baylis Chemical site in Warwick, Rhode Island on September 10, 1992 by Technical Assistance Team (TAT) members Paul Styspeck and Thomas Saccoccio working with Site Investigator (SI) Mary Ellen Stanton under TDD #01-9208-04, PCS #1969. The samples were hand delivered by TAT to R.I. Analytical in Warwick, Rhode Island on September 10, 1992 at 1735 hours. A copy of the chain-of-custody record is attached.

Two liquid drum samples and three solid drum samples were collected for pH analysis, and one liquid drum sample was collected for total cyanide analysis. The methods for analysis were as follows:

- pH by SW846 Method 9045 and a duplicate.
- Total cyanide by SW846 Method 9010 or 9012 and a matrix spike/duplicate pair.

Two copies of the analytical results were delivered to TAT on October 26, 1992. The supporting raw data for the cyanide analysis was not included. TAT requested the missing data, which were delivered to TAT on October 28, 1992. The data package deliverables were then complete, 34 days late.

The data review was based on the OSWER Directive 9360.4-01, (Interim Final - April 1990), *Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan and Data Validation Procedures*, EPA/540/G-90/004. The attached tables, which have been separated by parameter, summarize the analytical data. No qualifiers were made during the data review process.



pH ANALYSES

Two liquid drum samples (EPA sample numbers 02344 and 02345) and three solid drum samples (EPA sample numbers 02339, 02340, and 02343) were analyzed for pH by SW846 Method 9045.

Sample Holding Times

All samples were analyzed immediately upon receipt by the laboratory. Ideally, pH is measured in the field, but in the absence of field pH meters, SI Stanton delivered the samples to a local laboratory for immediate analysis the same day that they were collected. Because the matrix of the samples was drum waste, the pH was not anticipated to have changed significantly in the time between collection and analysis.

Initial and Continuing Calibration Verification

Calibration buffers at pH 4, 7 and 10 were analyzed with the drum samples. The measured values were accurate to the true values, indicating good linearity and accuracy of the calibration.

Duplicate Sample

One of the solid samples was analyzed in duplicate. Duplicate results were within 0.04 pH units of the original results, indicating good precision and reliability of the results.

Blanks

There are no blanks associated with pH measurements.

Overall Assessment of the Data

The overall quality of the analytical data was good. All data is acceptable as received from the laboratory, and no qualification of the data was necessary.

Table 1, located at the end of the memorandum, shows the results of the pH analyses.

TOTAL CYANIDE ANALYSES

One solid drum sample (EPA sample number 02342) and a matrix spike/duplicate pair was analyzed for total cyanide by SW846 Method 9010.

Sample Holding Times

All samples were analyzed within required holding times. Specifically, all samples were distilled and analyzed within 14 days of collection.

Initial and Continuing Calibration Verification

A six point calibration curve was prepared for total cyanide. The laboratory utilized the curve in the logarithmic format as percent transmittance vs. concentration. When converted to the linear absorbance vs. concentration format, the correlation coefficient was 0.995, indicating acceptable linearity (or logarithmic fit as percent transmittance). The recovery of the calibration check sample was 100%, indicating good linearity and accuracy of the calibration.

Laboratory Control Sample (LCS)

An LCS sample (WP-24-2) was analyzed to confirm the accuracy of the total cyanide analysis. The total cyanide value determined by the laboratory was 87% of the true value. Good accuracy is indicated.

Matrix Spike Sample

The recovery for the matrix spike sample was reported as 112% and met the required criteria. This result indicates that the cyanide results are expected to be accurate and are not biased high or low.

Duplicate Sample

The duplicate sample results were found to be within 12% relative percent difference of each other. Agreement between the results suggests that the analyses are accurate.

Blank Sample

A blank analysis was not performed on the date of these analyses. Blank data from an analysis performed two days previous were included in the raw data. Although blanks should be analyzed each day, with each sample set, the data from the previous analyses indicated that the blank was free from interferences and contained less than the required detection limit of cyanide. It is likely that the analyses performed for this set of samples was also free from interferences and contamination.

Overall Assessment of the Data

The overall quality of the analytical data was acceptable as reported from the laboratory, and no qualification of the data was necessary.

Table 2, located at the end of the memorandum, shows the results of the total cyanide analyses.

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TABLE 1

**SUMMARY OF ANALYTICAL DATA
pH ANALYSIS
T.H. BAYLIS CHEMICAL SITE**

pH

SAMPLE NUMBER	02339	02340	02343	02344	02345
SAMPLE PHASE	solid*	solid*	solid*	liquid	liquid
SAMPLE STATION	D001	D002	D005	^D006	D007
pH	13.5	9.5	<1	<1	8.5

* Solid samples were analyzed by measuring the pH of a 1:1 suspension of the sample and 0.01 M CaCl₂ (aq).

NOTE: Only those samples for which the analyte was detected and/or the results qualified according to the data validation criteria in OSWER Directive 9360.4-01, April 1990, Interim Final, have been included in this summary for the convenience of the reader.

All data reported by the laboratory can be found in the analytical data package subcontracted under TDD #01-9208-L1, PCS #0319.

4068tb1.wk1(4068)

TABLE 2

SUMMARY OF ANALYTICAL DATA TOTAL CYANIDE ANALYSIS T.H. BAYLIS CHEMICAL SITE

TOTAL CYANIDE in mg/L (ppm)

SAMPLE NUMBER	02342
SAMPLE STATION	D004
TOTAL CYANIDE	1700

NOTE: Only those samples for which the analyte was detected and/or the results qualified according to the data validation criteria in OSWER Directive 9360.4-01, April 1990, Interim Final, have been included in this summary for the convenience of the reader.

All data reported by the laboratory can be found in the analytical data package subcontracted under TDD #01-9208-L1, PCS #0319.

4068tb2.wk1 (4068)

CHAIN OF CUSTODY RECORD

PROJ. NO.:		PROJECT NAME: TDD # 01-9208-2 P 08 PCS # 1975			NO. OF CONTAINERS	PH-EPA Method # 9045 PH-Duplicate - EPACMS CN-EPA Method # 9010 Cu - MS / Dyp-EPA 8060	REMARKS				
SAMPLERS: (Signature) Paul Stappick, Tom Dececcis											
STA. NO. Yr	DATE	TIME	COMP.	GRAB	STATION LOCATION						
D001	9/1/92	1430		X	Drum	1-125ml	X				EPA # 02339
D002		1440		X		2-125ml	X	X			EPA # 02340
D004		1500		X		2-1L		X	X		EPA # 02342
D005		1510		X		1-125ml	X				EPA # 02343
D006		1520		X		1-125ml	X				EPA # 02344
D007		1530		X		1-125ml	X				EPA # 02345
					Paul Stappick						
					9/10/92						
Relinquished by: (Signature) Paul Stappick		Date / Time 9/1/92 17:35		Received by: (Signature) Michael Price		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)	
Relinquished by: (Signature)		Date / Time 9/10/92 17:35		Received for Laboratory by: (Signature) Michael Price		Date / Time 9/10/92 17:35		Remarks RI. Analytic 41 Illinois Ave. Warwick, RI 02888			