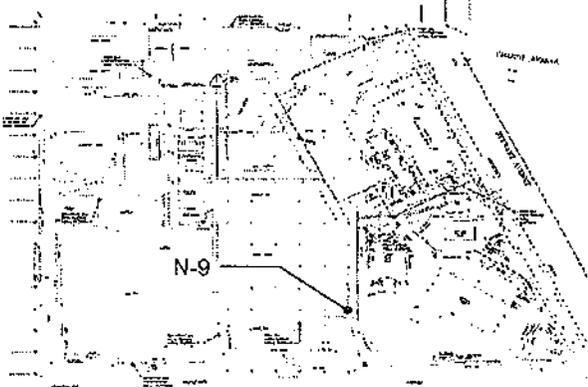


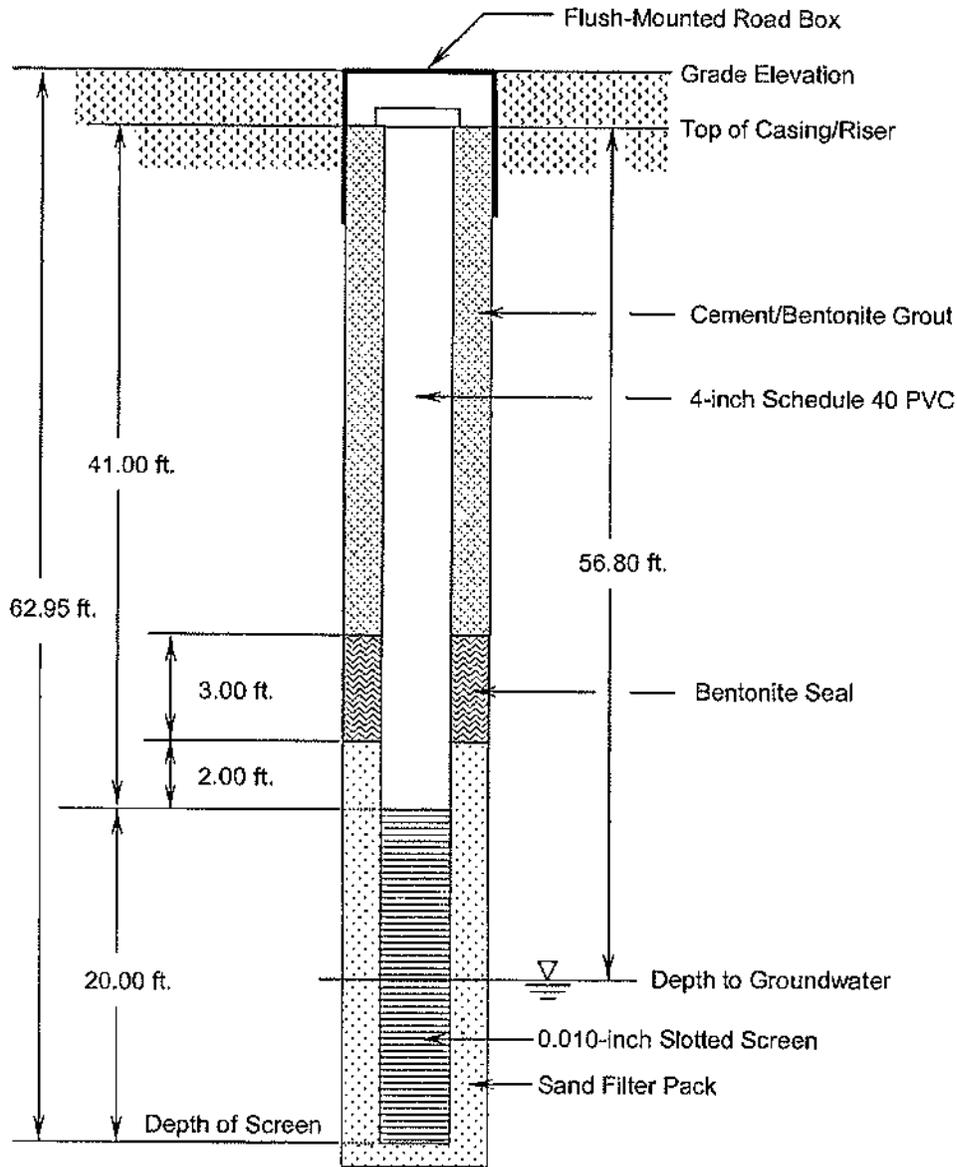
H2M GROUP



Boring # N-9	MW#	Page 1	of 1
PROJECT: Bethpage Park, Construction Area			
JOB # TOBY 0402			
LOGGED BY: CJF	PRJ. MNGR.:	PRL	
DRILLING CONTRACTOR: Universal Testing & Inspection Services			
DRILL METHOD: HSA			
DRILLER:			
Borehole diameter/drill bit type:	total depth	60'	
	elevation		
HAMMER WT:	DROP:		
START TIME:	DATE: 5/27/05		
COMPLETION TIME:	DATE: 5/27/05		
BACKFILL TIME:	DATE:		

Sample Depth	Advance (ft)	Recovered (ft)	Soil Description Unified Soil Classification System	Notes	Casing depth:
					Screen depth:
0-2	2'	1'	0'-1' Gray SP	PID (0'-2'): 0.0	
			1'-1'6" Yellowish Tan SP		
			1'6"-2' Brown SM		
2-4	2'	2'	2'-2'6" Concrete	PID (2'-4'): 0.0	
			2'6"-3' Black SW		
			3'-3'6" Gray SW		
			3'6"-4' Dark tan SW		
4-6	2'	1'	4'-6' Loose SP (some fill)	PID (4'-6'): 0.0	
6-8	2'	6"	6'-6'6" Loose SP, fill?	PID (6'-8'): 0.0	
8-10	2'	1'6"	8'-8'6" Brown SP	PID (8'-10'): 16 * BD	
			8'6"-9'6" Yellowish tan SP, drill cuttings		
10-12	2'	1'6"	10'-12' Black SP, medium	PID (10'-12'): 54	
18-20	2'	1'6"	18'-19' Dark brown, slight sheen	PID (18'-20'): 9	
			19'-20' Tan, no odor, slight sheen		
28-30	2'	1'6"	28'-30' Tan, slight sheen	PID (28'-30'): 1.9	
38-40	2'	2'	38'-39' Tan/light brown, slight sheen	PID (38'-40'): 0.0	
			39'-40' White sand		
48-50	2'	2'	48'-50' Brown, sandy SP	PID (48'-50'): 0.0	
58'-60'	2'	2'	58'-60' Light brown SP, sandy	PID (58'-60'): > 2000	

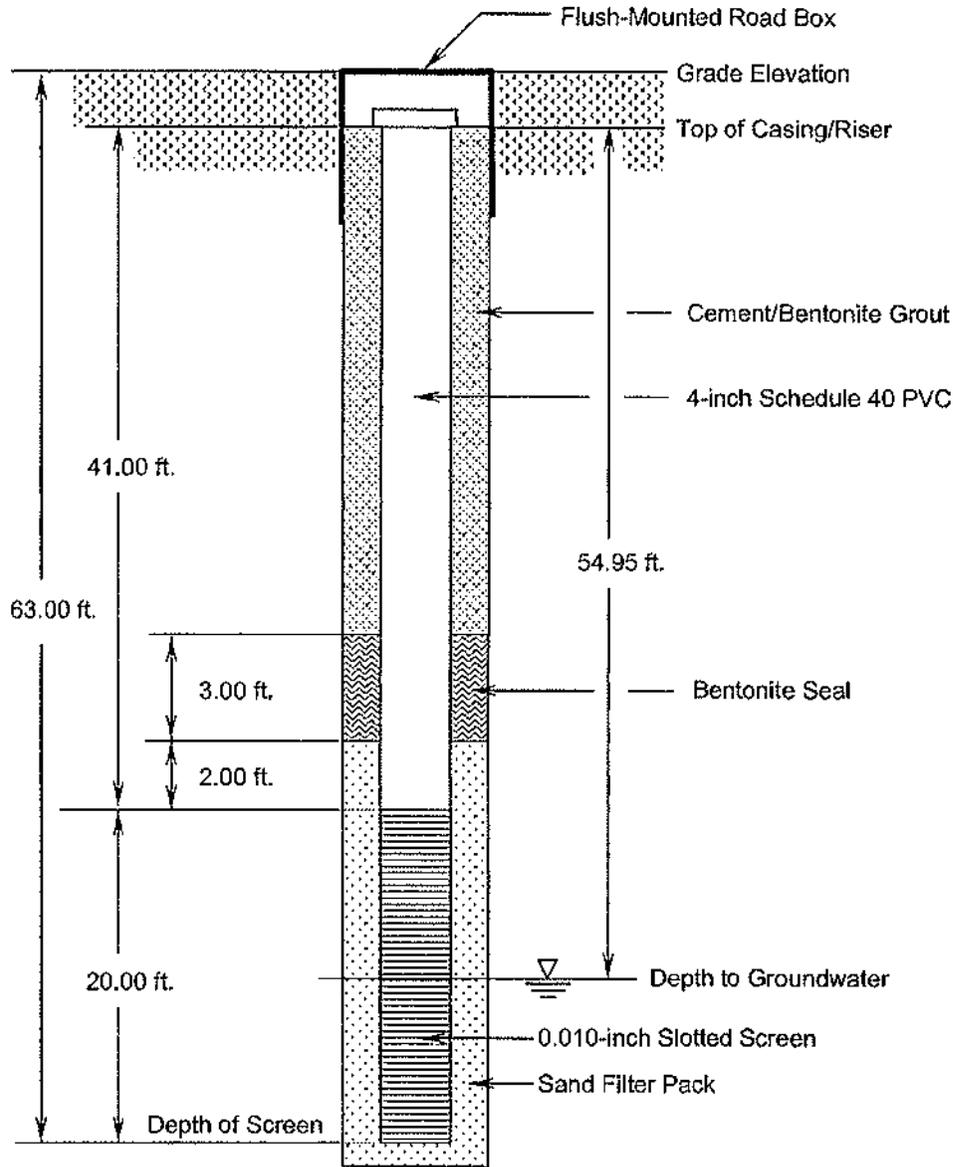
**MONITORING WELL CAMW-1
CONSTRUCTION DIAGRAM**
Installed: June 27, 2005



**TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK**

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**MONITORING WELL CAMW-2
CONSTRUCTION DIAGRAM**
Installed: June 22, 2005

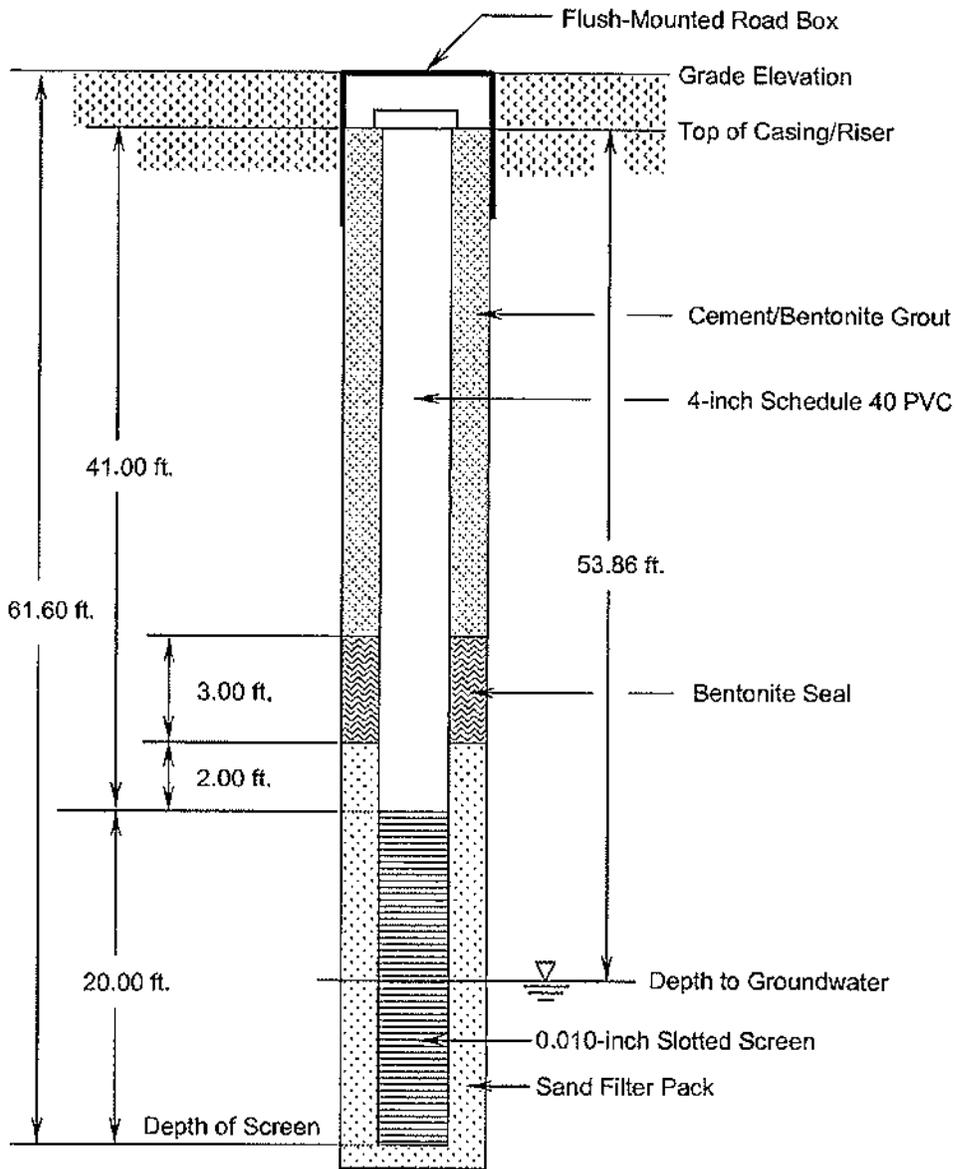


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**MONITORING WELL CAMW-3
CONSTRUCTION DIAGRAM**
Installed: June 23, 2005

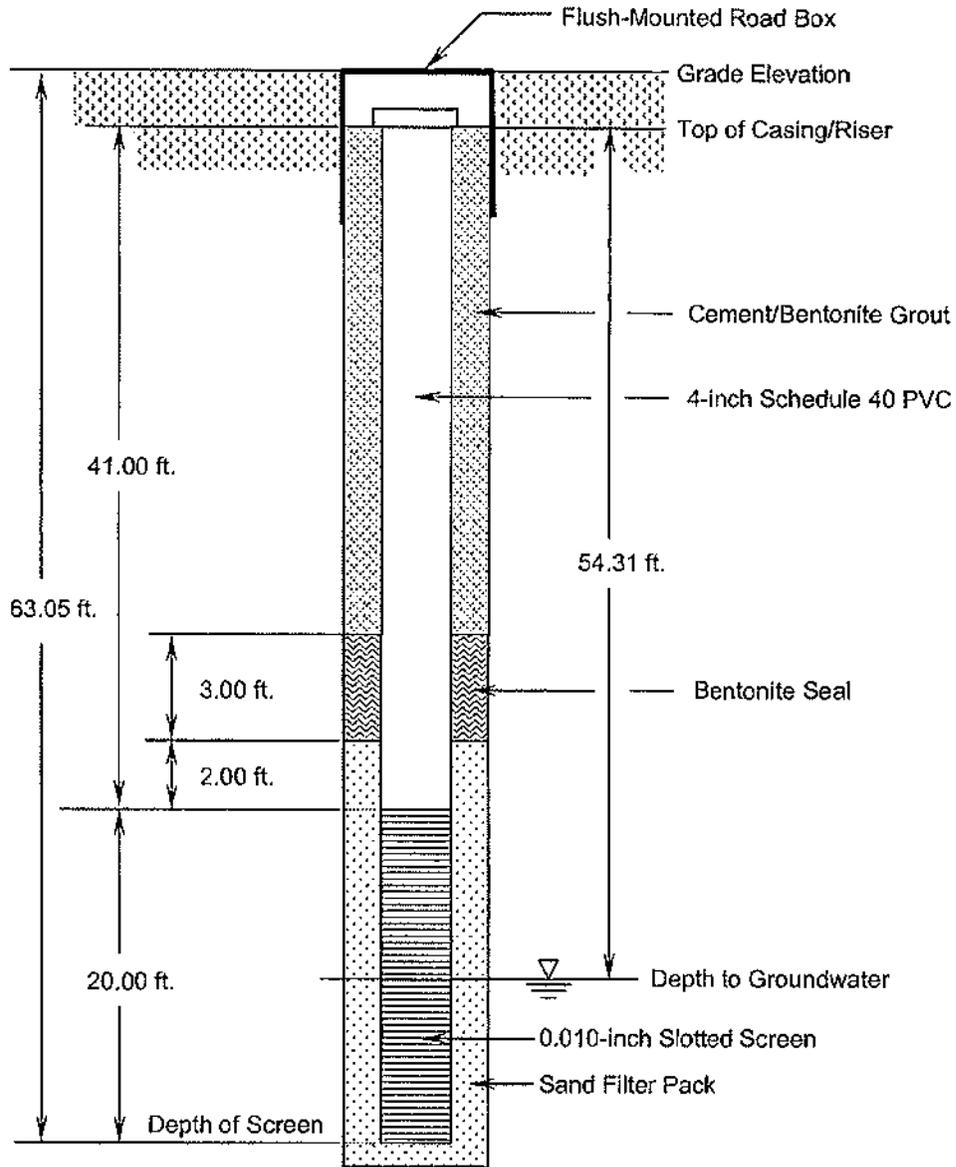


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**MONITORING WELL CAMW-4
CONSTRUCTION DIAGRAM
Installed: June 24, 2005**



**TOWN OF OYSTER BAY
BETHPAGE COMMUNITY PARK
BETHPAGE, NEW YORK**

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Data Validation Services

120 Cobble Creek Road P. O. Box 208

North Creek, N. Y. 12853

Phone 518-251-4429

Facsimile 518-251-4428

September 23, 2005

Paul Lageraen
H2M Group
575 Broad Hollow Rd.
Melville, NY 11747

RE: Data Usability Summary Report for Town of Oyster Bay, Bethpage site
H2M Laboratories SDG Nos. TOB001 through TOB010 and TOB046
STL SDG Nos. 107767 and 107941

Dear Mr. Lageraen:

Review has been completed for the data packages generated by H2M Laboratories that pertain to samples collected 5/26/05 through 7/13/05 at the Town of Oyster Bethpage site. One hundred and thirty seven soil samples and nine blind field duplicates were analyzed for TCL PCBs and RCRA metals. Thirty-nine soil samples, four aqueous samples, and one aqueous blind field duplicate were processed for TCL volatiles, TCL semivolatiles, TCL PCBs, TAL metals/CN, and hexavalent chromium. Twenty-four air samples were analyzed for volatiles by USEPA method TO-15. Laboratory analytical methodologies utilized for the soil and aqueous samples are those of the NYSDEC ASP/SW846. Sample matrix spikes, and equipment and trip blanks were also processed.

The data packages submitted contained full deliverables for validation, but this usability report is generated from review of the summary form information, with review of sample raw data, and limited review of associated QC raw data. Full validation has not been performed. However, the reported summary forms have been reviewed for application of validation qualifiers, per the USEPA Region 2 validation SOPs and the USEPA National Functional Guidelines for Data Review, as affects the usability of the sample data. The following items were reviewed:

- * Laboratory Narrative Discussion
- * Case Narratives
- * Custody Documentation
- * Holding Times
- * Surrogate and Internal Standard Recoveries
- * Matrix Spike Recoveries/Duplicate Correlations
- * Preparation/Calibration Blanks
- * Control Spike/Laboratory Control Samples
- * Instrumental Tunes and IDLs
- * Calibration/CRI/CRA Standards
- * ICP Interference Check Standards
- * ICP Serial Dilution Correlations
- * Method Compliance
- * Sample Result Verification

Those items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR review level.

In summary, samples were processed in compliance with protocol, and most results are usable as reported, or with minor edit or qualification of results as estimated. The exception is that semivolatile acids (phenolics) are not usable in several of the soil samples due to an apparent matrix effect. Recollection of material at those locations is not likely to improve the data for those compounds. Some of the pesticide/PCB reporting limits (in samples with high Aroclor concentrations) are elevated.

Copies of the NYSDEC Sample Identification and Analytical Requirement Summary Forms are attached to this text, and should be reviewed in conjunction with this report. Included with this report are red-ink edited sample report forms that represent final qualified samples results.

The following text discusses quality issues of concern.

General

Blind field duplicate correlation was performed on the following samples: M6(8-10), N9(8-10), N6(2-4), N5(2-4), L7(8-10), K7(8-10), I9(2-4), I11(4-6), N7(28-30), and CAMW4. All results fall within acceptable limits, with the following exceptions, results for which are qualified as estimated in the parent and duplicate.

- arsenic, barium, and lead, (all $>\pm 2\text{XCRDL}$) in N6(2-4)
- Aroclor 1242 ($>\pm 2\text{XCRDL}$) in N5(2-4)
- arsenic and barium (both $>\pm 2\text{XCRDL}$) in I9(2-4)

The field blank FB-8 shows contamination above CRDL for chromium. Therefore, chromium detections in samples I7(0-2), I7(2-4), I7(6-8), I9(2-4), I9(4-6), and J8(8-10) are considered external contamination, and results are edited to non-detection at the originally reported concentrations. The iron concentrations shown in that blank and other field blanks are well below those of the associated samples, and no validation action is required.

The field blank associated with the aqueous samples show low concentrations of several analytes. The following element detections are within validation action level in the associated samples, and have been edited to reflect non-detection at the originally reported concentrations.

- aluminum in all aqueous samples except CAMW5
- chromium, iron, and zinc in all aqueous samples

TCL Volatiles by EPA8260B

The method blanks show consistent low levels of methylene chloride at concentrations similar to those in the project samples. Therefore, the sample detections of that compound are to be disregarded as sample components, and are edited to reflect non-detection ("U") at the CRDL, or the originally reported concentration, whichever is greater.

Results for sample analytes initially reported with the "E" flag are to be derived from the dilution ("-DL") analyses of the samples. All other results can be derived from the initial analyses.

The result for ethylbenzene in I10(4-6) is qualified as tentative in identification and estimated in value ("NJ") due to poor mass spectral match.

Calibrations standards showed responses within guidelines, with the exception of methylene chloride (26%D) in the standard associated with samples reported in SDG TOB007, results for which are qualified estimated ("UJ" or "J").

Matrix spikes of M9(4-6), M5(0-2), N9(10-12), N6(0-2), N5(0-2), L7(0-2), K7(6-8), I10(2-4), I11(6-8), J9(6-8), and CAMW3 show acceptable accuracy and precision.

Tentatively Identified Compounds (TICs) flagged as "B" by the laboratory, or identified as siloxanes are considered external contamination (indicated by presence in associated blanks), and results should be rejected as sample components.

TCL Semivolatile Analyses by EPA8270C

Samples K-6(2-4), J8(0-2), and I12(6-8) exhibited recoveries for acid surrogate 2,4,6-tribromophenol below 10% in repeated extractions, indicating that results for phenolics in those samples be rejected, and are not usable. L4(0-2) showed only 5% recovery from the initial extraction, but acceptable in the re-extraction. Because that re-extraction was performed beyond allowable holding time, the results for the phenolics are usable, but qualified as estimated.

Due to low response for internal standard d12-perylene, results for the six associated analytes are qualified as estimated in N7(0-2). The matrix spikes of the sample show similar variance, indicating a matrix effect.

The soil method blank of 5/28/05 shows contamination of diethyl phthalate. Therefore, the detection of that analyte in associated sample M5(0-2) is considered external contamination, and is edited to reflect nondetection ("U").

Calibrations standards showed acceptable responses, or slightly outlying elevated responses not affecting the usability of the sample results, with the exception that results for the following, results of which are qualified as estimated in the associated, indicated samples:

- bis-2-chloroethyl ether (37%D and 38%D) in the soils reported in SDGs TOB001, TOB002, TOB003, TOB004, TOB009, TOB010 and in all field blanks
- 2,4-dinitrophenol (30%D) in soil samples in SDGs TOB001, TOB002, TOB003, TOB007,
- 2,4-dinitrophenol and 4,6-dinitro-3-methylphenol (46%D to 60%D) in K4(8-10), K5(4-6), K5(8-10), and N6(0-2)
- 2,2'-oxybis(1-chloropropane), 2-nitroaniline, n-nitrosodi-n-propylamine, and nitrobenzene in K6(6-8), K6(8-10), and in soil samples in TOB006,
- 2-nitroaniline (26%D) in the soils in TOB005
- di-n-octylphthalate in the aqueous field samples

Matrix spikes of M8(4-6), M5(0-2), N9(10-12), and CAMW3 produced acceptable accuracy and precision.

The matrix spikes of N5(0-2), L7(0-2), K7(6-8), and I11(6-8) show acceptable recoveries, with the exception of those for pentachlorophenol, which failed to recover. The results for that compound in the parent samples are therefore rejected, and not usable.

The matrix spikes of I10(2-4) show acceptable recoveries, with the exception of that for pentachlorophenol (97% and 11%). The result for that compound in the parent sample is therefore qualified as estimated.

The matrix spikes of J9(6-8) show acceptable recoveries, with the exception of that for pentachlorophenol (15% and 11%). The result for that compound in the parent sample is therefore qualified as estimated.

The matrix spike of N6(0-2) shows acceptable recoveries, with the exception of that for pentachlorophenol (15%). The result for that compound in the parent sample is therefore qualified as estimated. The spiked duplicate (MSD) of this sample was an anomalous failed extract (2 surrogate recoveries below 10%, and several spike compound recovery failures). That MSD was not used in the evaluation.

Due to low recoveries (42%, below 47% limit) in the associated fortified blank, the results for 4,6-dinitro-2-methylphenol are qualified as estimated, with a low bias in the soil samples reported in SDGs TOB004, TOB005, TOB006, and TOB007

Tentatively Identified Compounds (TICs) flagged as "B", "X", or "A" by the laboratory are considered external contamination (indicated by presence in associated blanks), and results should be rejected as sample components. Additionally, the TIC identified as "Erucylamide" (which is a poor match) appears in samples and field blanks. That TIC is also rejected in the samples. The TICs identified as chlorinated biphenyls have also been removed from the sample TIC lists, as they are target analytes reported in the PCB fraction.

TCL PCB Analyses by EPA8082

Due to elevated surrogate standard DCB recoveries (162% to 209%), detections reported for Aroclors in samples I8(4-6) and I8(2-4) are qualified as estimated.

Reporting limits for non-detected Aroclor mixtures that were reported with the "X" flag are qualified as estimated, with a possible low bias, due to responses from other mixtures present in the sample that may mask those detections.

Aroclor results flagged as "Z" by the laboratory are qualified as estimated due to matrix interferences.

Results for sample analytes initially reported with the "E" flag are to be derived from the dilution ("-DL") analyses of the samples.

Due to interferences from the high PCB constituency of samples N9(2-4), C4(4-6), and N9(0-2) only the dilution analyses are to be used. This results in elevated reporting limits for non-detected Aroclor mixtures.

The result for Aroclor 1260 in K8(2-4) is qualified as estimated in value ("J") due to poor dual column correlation (75%D) and pattern match.

The result for Aroclor 1260 in K5(0-2) is qualified as tentative in identification and estimated in value ("NJ") due to poor dual column correlation (118%D) and pattern match. This sample had other Aroclor constituents.

The sample Aroclor 1242 detections show a weathered pattern, and the laboratory therefore worked to optimize the quantitative accuracy. Although not qualified, these values may have a bias.

Matrix spikes of Aroclors 1016 and 1260 in M9 (4-6), M5(0-2), N9(10-12), N6(0-2), N5(0-2), L7(0-2), K7(6-8), I10(2-4), I11(6-8), J9(6-8), and CAMW3 show acceptable recoveries and duplicate correlations. In some cases, the sample concentrations of Aroclor 1242 are too high to accurately evaluate the spiked Aroclor 1016 recoveries (due to similarity in pattern).

RCRA and TAL Metals/CN by 6010B, 7470, and 7471

Sample matrix spike recovery/duplicate correlation values were within validation guidelines for M9 (4-6) and CAMW3. The following validation action outliers were observed in soil matrix spike recoveries and laboratory duplicate correlations. Results for the indicated analytes are qualified estimated in all samples associated with the spike and duplicate:

<u>Sample Spiked</u>	<u>Analyte</u>	<u>Rec Outlier</u>	<u>Dup Outlier</u>	<u>Associated Samples</u>
M5(0-2)	Manganese	165%		TOB002
N9(10-12)	Arsenic	40	102%RPD	TOB003
	Copper	365		"
N6(0-2)	antimony	41		TOB004
	Chromium	126		"
	Lead	66		"
N5(0-2)	antimony	48		TOB005
L7(0-2)	antimony	54		TOB006
	Lead	150		"
	Manganese	- 5		"
K7(6-8)	antimony	59		TOB007
	Chromium	70		"
	Lead	52		"
	Manganese	66		"
I10(2-4)	antimony	56		TOB008
	Cadmium	55		"
	Chromium	- 22		"
	Calcium		164%RPD	"
I11(6-8)	antimony	71		TOB009
	Manganese	130		"
	Selenium	42		"
J9(6-8)	antimony	57		TOB010
	Selenium	155		

ICP serial dilution correlation evaluations were performed on M9 (4-6), M5(0-2), N9(10-12), N6(0-2), N5(0-2), L7(0-2), K7(6-8), I10(2-4), I11(6-8), J9(6-8), and CAMW3. Results for the following sample analytes are qualified estimated due to outlying correlations:

- potassium in samples in SDGs TOB001, TOB003, and the aqueous samples
- potassium and zinc in samples in TOB004 and TOB005
- aluminum, barium, calcium, chromium, iron, magnesium, manganese, and zinc in TOB006 (it is noted that the serial dilution of L7(0-2) was processed twice, and results used from a different analysis sequence than that of the parent sample).
- zinc in samples in SDG TOB007
- calcium in samples in SDG TOB009

Due to low recoveries of CRI/CRA standards, results for cyanide (64%) in the samples in SDGs TOB003 and TOB008 are qualified estimated, with a low bias, on the attached forms. No corrective laboratory action is required for CRI/CRA results.

Volatile Analyses by EPA TO-15

Results for sample analytes initially reported with the "E" flag are to be derived from the dilution ("-DL") analyses of the samples. Additionally results for 1,3-butadiene in D1-8-10 and D1-58-60 are also edited to be derived from the dilution due to initial interferences.

The result for dichlorodifluoromethane in H13 10 is very slightly above the linear range of the instrument, and therefore is qualified as estimated. The degree of bias is not expected to be great.

Samples D1-58-60 and E3-8-10 exhibited one or more elevated internal standard responses. Results for associated **detected** compounds in those samples are qualified as estimated ("J"),

The LCSs show several outlying recoveries. Results for those analytes in associated samples are qualified as estimated. They are the following:

- hexachlorobutadiene (47% to 62%) in E3-8-10 and E5-8-10
- 1,3,5-trimethylbenzene (140%) in D1-8-10 and D1-58-60
- 1,1-dichloroethene (64% and 45%) and 1,3-butadiene (40%) in E5-8-10
- 1,2,4-trichlorobenzene (37% to 66%) and hexachlorocyclobutadiene (46% to 65%) in all samples
 - reported in SDG 107941
- dichlorodifluoromethane in H13 19, E11 10, and H13 52

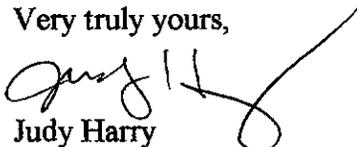
Wet Chemistry Analyses-Cr+6 by SW7196

Review was conducted for method compliance, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable unless noted specifically within this text.

The matrix spike and duplicate of M9 (4-6), M5(0-2), N9(10-12), N6(0-2), N5(0-2), L7(0-2), K7(6-8), I10(2-4), I11(6-8), J9(6-8), and CAMW3 show acceptable accuracy and precision.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Very truly yours,


Judy Harry

Att

VALIDATION QUALIFIER DEFINITIONS

DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the national qualifiers assigned to results in the data review process. If the Regions choose to use additional qualifiers, a complete explanation of those qualifiers should accompany the data review.

- U** - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J** - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- N** - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- NJ** - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ** - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R** - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Nancy J. Potak
1796 Craftsbury Road
Greensboro, Vermont 05841

Phone (802) 533-9206
Fax (802) 533-9206
email: npotak@vtlink.net

September 19, 2005

Paul R. Lageraen, P.E.
H2M
575 Broad Hollow Road
Melville, NY 11747-5076

Re: **Town of Oyster Bay – Bethpage Community Park SDG: TOB030**

Dear Paul,

Enclosed are the data validations for the town of Oyster Bay - Bethpage Community Park.

Please do not hesitate to contact me if you should have any questions concerning these reports.

Sincerely,


Nancy J. Potak

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Town of Oyster Bay / Bethpage Community Park
Project TOBY 04-02

PCB Analyses NYSDEC Method 95-3

Samples Collected: June 15, 2005

Samples Received: June 15th & 16th, 2005

Sample Delivery Group: TOB030

Laboratory Reference Numbers:

E9 (0-2)	0506481-001
E9 (2-4)	0506481-002
E9 (4-6)	0506481-003
E9 (6-8)	0506481-004
E9 (6-8) MS	0506481-004 MS
E9 (6-8) MSD	0506481-004 MSD
E9 (8-10)	0506481-005
E9	0506481-006
G7 (0-2)	0506481-007
G7 (2-4)	0506481-008
G7 (4-6)	0506481-009
G7 (8-10)	0506481-010
FB30	0506481-011
J1 (0-2)	0506530-001
J1 (2-4)	0506530-002
J1 (4-6)	0506530-003
J1 (6-8)	0506530-004
J1 (8-10)	0506530-005
J1 (18-20)	0506530-006
J1 (28-30)	0506530-007
J1 (38-40)	0506530-008
J1 (48-50)	0506530-009
J1 (58-60)	0506530-010
J1	0506530-011

Soil samples were received for analyses of the PCB TCL analyte list by the NYS DEC ASP protocols. A complete analytical validation was performed based upon the US EPA Region II data validation protocols and following parameters:

- * - Data Completeness
- * - Holding Times
- * - Laboratory Blanks
- * - Field Blanks
 - Surrogate Recoveries
- * - Surrogate Retention Times
- * - Matrix Spike / Matrix Spike Duplicate
- * - Blank Spike
- * - Initial Calibration
- * - Continuing Calibration
- * - Method Blanks
- * - Compound Identification

* - Indicates that all criteria were met for this parameter.

DATA VALIDATION SUMMARY

Note: All of the following are observations and comments. The laboratory is not required to provide a written response to any of the following comments.

The Aroclor patterns of these samples were often complex, but clearly Aroclor 1242 predominated in most of the samples. The Aroclor 1242 was often severely weathered resulting in a pattern that did not always agree with the Aroclor 1242 standard. Aroclors 1254 and 1260 were also present in some of the samples.

A detailed explanation of the laboratory's quantitations is included at the end of this report. No significant deviations from the laboratory reported results were found during the validation.

All of the Aroclors in this sample delivery group were clearly above or below the 1,000 ug/kg clean up criteria.

The laboratory's case narrative states:

All soil samples were cleaned up with concentrated sulfuric acid and were subjected to sulfur cleanup with TBA.

Since this SDG comprised 21 soil samples, one of the samples was extracted in another preparation batch. An additional lab fortified blank (LFB) and method blank for batch 13964 is included in the package.

Sample E9 (6-8) was analyzed as the matrix spike/matrix spike duplicate (MS/MSD).

In four samples, surrogate recovery for DCB is biased high on one column due to unresolved interferences.

TCX recovery is also high on one column in one sample due to matrix interference. In one other sample, TCX is not detected on one column because it is masked by a large interfering compound.

Eight samples exceeded the calibration range for PCBs and were reanalyzed at a dilution. Both sets of data are reported.

In dilutions of 1:10 and above, no surrogate recoveries are reported, because the surrogate spike is diluted out.

Positives are reported to the practical detection limit of ½ of the reporting limit.

In samples with positive Aroclors, low levels of other Aroclors could be masked due to the overlap of patterns. These other Aroclors are flagged with the qualifier X.

The qualifier "Z" is used for AS1254 in presence of higher levels of AR1242 to indicate that the result for AR1254 is biased high due to the overlap of patterns.

Samples which were flagged with the "Z and "X" qualifiers by the laboratory were flagged with the "J" qualifier during the data validation to note that they are estimated values.

Holding Times

The data were validated against the EPA Region II Technical Holding Times: Water and soil samples for PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

All extractions and analyses were performed within the required holding times.

Surrogate Recoveries

The laboratory's case narrative states:

In four samples, surrogate recovery for DCB is biased high on one column due to unresolved interferences.

TCX recovery is also high on one column in one sample due to matrix interference. In one other sample, TCX is not detected on one column because it is masked by a large interfering compound.

All surrogate recoveries were within the required quality control limits of 30% - 150% with the following exceptions:

Sample	TCX 1	TCX 2	DCB 1	DCB 2
J1 (2-4)				181%
J1 (18-20)	591%			192%
J1 (4-6)				163%
G7 (8-10)		0%		191%

The high recovery of TCX 1 in sample J1 (18-20) is due to the presence of an interfering peak. This sample had to be reanalyzed at a 10X dilution due to high concentrations of Aroclors 1242 and 1254. Similar surrogate recoveries were obtained in the 10X dilution.

Aroclors 1242, 1254 and 1260 were present in sample G7 (8-10) at concentrations above the linear range. The data were reported from a 500X dilution and the missing TCX in the undiluted analysis does not affect the end use of the data. The data for the undiluted analysis were flagged with the "R" qualifier.

The data for the samples J1 (2-4) and J1 (4-6) were not qualified since only one surrogate on each column was above the quality assurance limit. The high recoveries were due to interferences.

Matrix Spike

Sample E9 (6-8) (Lab. #: 0506481-004) was used as the matrix spike and matrix spike duplicate. All recoveries and RPDs were within the required quality assurance limits.

Aroclor 1016 and Aroclor 1260 were added as the spiking compounds at a concentration of 170 ug/kg.

Blank Spike

Two blank spikes were analyzed with this sample delivery group. All blank spike recoveries were within the required limits.

Initial Calibrations

No problems were found with the initial calibration. All %RSDs were less than 30%.

Continuing Calibrations

All of the percent differences in the continuing calibrations were less than 25% with the following exceptions:

The percent differences of two of the five Aroclor 1260 peaks in both the CLP and CLP2 columns were above 25% in the continuing calibration standards analyzed on 6/27 at 12:24 and 17:20 (only one peak was above 25% in CLP2 at 17:20).

The data for the associated samples, J1 and J1DL were not qualified since the mean recovery was less than 25%.

Surrogate Retention Times

All surrogate retention times were within the required limits for both surrogates and on both columns.

Method Blanks

No problems were detected with any of the method blanks.

Calibration Blanks

No problems were detected with the calibration blanks associated with this sample delivery group.

Field Blank

None of the target compounds were detected the field blank.

Sample Results

The data were qualified on the basis of the percent difference of the concentrations on the two columns:

<u>% Difference</u>	<u>Qualifier</u>
0 - 25%	None
25 - 70%	"JP"
70 - 100%	"JNP"
> 100%	"RP"
100 - 200% (Interference detected)*	"JNP"

All of the percent differences in this sample delivery group were less than 70%. Percent differences greater than 25% were flagged with the "JP" qualifier. This did not affect the end use of the data since all of the affected samples were either much higher or lower than the 1,000 ug/kg clean up limit.

No other problems were detected with the sample data.

H2M PROCEDURE FOR IDENTIFICATION/QUANTITATION OF AROCLORS

The following is an explanation of our procedure for identification / quantification of PCBs as it applies to the TOB project. It also offers a clarification, why no AR1248 identifications can be found on the integrations, even though certainly many peaks present in the samples are contained in the pattern of AR1248.

The difficulty in analyzing samples for aroclor mixes, is the presence of other interfering compounds, but more so the mutual interference of the aroclors with each other. This is primarily due to the overlap of their patterns. Weathering of the PCBs presents another problem.

The greatest difficulty lies in distinguishing aroclors **AR1232, AR1242, AR1016 and AR1248**. These aroclors are not only overlapping, but are basically "coeluting". **They contain almost the same congeners, and the only distinction is the ratio of the congeners, e.g. the earliest congeners**

are very low in the AR1248, some late congeners are practically missing in AR1016, etc. The distinction becomes even more difficult, if the sample also contains AR1254, which is interfering with the late congeners, or if the ratio of the congeners is altered by weathering. Computer identifications are of very little help to determine, which of the four aroclors is present. The identification is based on the evaluation of the analyst, who will use **pattern recognition**, which is basically a **comparison of peak ratios**.

These four "coeluting" aroclors cannot be reported simultaneously. If a mix of any two (or more) of these aroclors were present in a sample, only the largest of the four aroclors could be identified. The lower levels of the other aroclors would be **masked** (that means could not be found), because the same congeners are present. These congeners of the other masked aroclor would contribute to the quantity reported for the large identified aroclor, and its quantity is included in the quantity of the reported aroclor. Potentially masked aroclors are reported with the qualifier "X" in the sample reports.

The overlap of the four "coeluting" aroclors with AR 1254 is significant, but AR1254 can be identified and quantified in the presence of one of these earlier eluting four aroclors. There is less of an overlap of the four "coeluters" with AR1260, where the patterns are easily distinguishable, and the early portion of the "coeluters" barely interferes with the late portion of the AR1260 pattern and vice versa. If, however, very high concentrations of one of the early aroclors were found, the tail of the pattern would still be high enough to mask low levels of AR1254 and even AR1260. In those cases these aroclors will also be reported with the qualifier "X".

Due to the fact that the four early eluting aroclors share the same congeners, in several cases the same congener is used as a quantification peak in more than one aroclor. The computer could not give more than one identification and one quantification for one peak. The sample file is therefore processed with more than one method to quantify the different aroclors. The most practical way of quantification is to **combine the aroclors that were identified by the analyst in one method**, so that the quantities for these aroclors can be determined from one integram. If the analyst identified AR1242, AR1254, and AR1260, the method that is used for the integration will only report these three aroclors. The computer printout with this method will therefore not identify or quantify AR1232, AR1248, and AR1016, which cannot be analyzed next to AR1242. This does not mean that the analyst has not evaluated the chromatogram for the presence of these other aroclors. This was done as the first step, before a determination was made, which of the four coeluting aroclors was to be quantified.

In the samples of the TOB project, AR1242 was found. In the surface samples and those samples that are close to the surface this aroclor shows **severe weathering**: The early light congeners are depleted, which results in a distortion of the pattern with much higher later eluting congeners. As a result, the pattern resembles the AR1248 pattern very strongly. Without the knowledge of the depth of the samples and the comparison with deeper

levels, the aroclor could easily have been taken for AR1248. Only the ratio of some of the early congeners look more like AR1242, even in the surface samples. In order to properly quantify this weathered AR1242, the quantification peaks were specifically selected to provide an average that is representative of the quantity present. (Quantifying the weathered AR1242 as AR1248 would probably have resulted in a reasonable quantification of the PCBs present.)

AR1248 was not "overlooked", but the pattern was identified as weathered AR1242. In all samples containing more than two times the reporting limit of AR1242, AR1248 was reported with the qualifier "X" as potentially masked at a lower level. Any AR1248 that could be present would be included in the concentration reported for AR1242.

Nancy J. Potak
1796 Craftsbury Road
Greensboro, Vermont 05841

Phone (802) 533-9206
Fax (802) 533-9206
email: npotak@vtlink.net

September 19, 2005

Paul R. Lageraen, P.E.
H2M
575 Broad Hollow Road
Melville, NY 11747-5076

Re: **Town of Oyster Bay – Bethpage Community Park SDG: TOB032**

Dear Paul,

Enclosed are the data validations for the town of Oyster Bay - Bethpage Community Park.

Please do not hesitate to contact me if you should have any questions concerning these reports.

Sincerely,


Nancy J. Potak

SUMMARY OF THE ANALYTICAL DATA VALIDATION
For Town of Oyster Bay / Bethpage Community Park
Project TOBY 04-02

PCB Analyses NYSDEC Method 95-3

Samples Collected: June 16, 2005

Samples Received: June 16, 2005

Sample Delivery Group: TOB032

Laboratory Reference Numbers:

F10 (0-2)	056524-001
F10 (2-4)	056524-002
F10 (4-6)	056524-003
F10 (8-10)	056524-004
G8 (0-2)	056524-005
G8 (2-4)	056524-006
G8 (4-6)	056524-007
G8 (8-10)	056524-008
G9	056524-009
G9 (0-2)	056524-010
G9 (2-4)	056524-011
G9 (4-6)	056524-012
G9 (6-8)	056524-013
G9 (8-10)	056524-014
G9 (8-10) MS	056524-014 MS
G9 (8-10) MSD	056524-014 MSD
G10 (0-2)	056524-015
G10 (2-4)	056524-016
G10 (4-6)	056524-017
G10 (8-10)	056524-018
FB32	056524-019

Soil samples were received for analyses of the PCB TCL analyte list by the NYS DEC ASP protocols. A complete analytical validation was performed based upon the US EPA Region II data validation protocols and following parameters:

- * - Data Completeness
- * - Holding Times
- * - Laboratory Blanks
- * - Field Blanks
- * - Surrogate Recoveries
- * - Surrogate Retention Times
- * - Matrix Spike / Matrix Spike Duplicate
- * - Blank Spike
- * - Initial Calibration
- * - Continuing Calibration
- * - Method Blanks
- * - Compound Identification

* - Indicates that all criteria were met for this parameter.

DATA VALIDATION SUMMARY

Note: All of the following are observations and comments. The laboratory is not required to provide a written response to any of the following comments.

The Aroclor patterns of these samples were often complex, but clearly Aroclor 1242 predominated in most of the samples. The Aroclor 1242 was often severely weathered resulting in a pattern that did not always agree with the Aroclor 1242 standard. Aroclors 1254 and 1260 were also present in some of the samples.

A detailed explanation of the laboratory's quantitations is included at the end of this report. No significant deviations from the laboratory reported results were found during the validation.

All of the Aroclors in this sample delivery group were clearly either above or below the 1,000 ug/kg clean up criteria.

The laboratory's case narrative states:

All soil samples were cleaned up with concentrated sulfuric acid and were subjected to sulfur cleanup with TBA.

Sample G9 (8-10) was analyzed as the matrix spike/matrix spike duplicate (MS/MSD).

Four samples exceeded the calibration range for PCBs and were reanalyzed at a dilution. Both sets of data are reported.

Positives are reported to the practical detection limit of ½ of the reporting limit.

In samples with positive Aroclors, low levels of other Aroclors could be masked due to the overlap of patterns. These other Aroclors are flagged with the qualifier X.

The qualifier "Z" is used for AS1254 in presence of higher levels of AR1242 to indicate that the result for AR1254 is biased high due to the overlap of patterns.

Samples which were flagged with the "Z and "X" qualifiers by the laboratory were flagged with the "J" qualifier during the data validation to note that they are estimated values.

Holding Times

The data were validated against the EPA Region II Technical Holding Times: Water and soil samples for PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

All extractions and analyses were performed within the required holding times.

Surrogate Recoveries

All surrogate recoveries were within the required quality control limits of 30% - 150%

Matrix Spike

Sample G9 (8-10) (Lab. #: 056524-014) was used as the matrix spike and matrix spike duplicate. All recoveries and RPDs were within the required limits.

Aroclor 1016 and Aroclor 1260 were added as the spiking compounds at a concentration of 170 ug/kg.

Blank Spike / System Monitoring Spike

All blank spike recoveries were within the required limits.

Initial Calibrations

No problems were found with the initial calibration. All %RSDs were less than 30%.

Continuing Calibrations

No problems were found with any of the continuing calibrations.

Surrogate Retention Times

All surrogate retention times were within the required limits for both surrogates and on both columns.

Method Blanks

No problems were detected with any of the method blanks.

Calibration Blanks

No problems were detected with the calibration blanks associated with this sample delivery group.

Field Blank

None of the target compounds were detected the field blank.

Sample Results

The data were qualified on the basis of the percent difference of the concentrations on the two columns:

<u>% Difference</u>	<u>Qualifier</u>
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