Data Validation Services

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January 10, 2013

Lynette Mokry
EA Science and Technology
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Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Sediment and Surface Soil Samples
Chemtech SDG Nos. D4608 and D4664

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by Chemtech, that pertain to samples collected between 10/18/12 and 10/24/12 at the Former Lackawanna Incinerator site. Twenty six soil samples and two field duplicates were processed for TCL volatiles, TCL semivolatiles, TCL Pesticides, TCL PCBs, and TAL metals/cyanide by USEPA SW846 6000/7000/8000/9000 methods. Ten of the samples and one field duplicate were also processed for Total Organic Carbon by the Lloyd Kahn methodology.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Preparation/Method/Trip Blanks
* Laboratory Control Samples (LCSs)
* Instrumental Tunes
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c).

In summary, most sample results are usable either as reported, or with minor qualification or edit to non-detection. The results for 1,4-dioxane are not usable in the samples due to poor response inherent with the methodology. Many of the metals results are qualified as estimated due to apparent matrix effects.

Copies of the sample identification summaries and the laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Chain-of-Custody/Sample Receipt

The relinquish entries were not present on either of the two custody forms associated with the samples collected 10/24/12.

Blind Field Duplicate

Blind field duplicate evaluations were performed on SD-07B and SS-12. Correlations meet validation guidelines, with the exceptions of those for copper (56%RPD) and silver (>±CRDL) in SS-12. These elements also produced outlying accuracy and precision with that matrix (discussed later in this report). Results for those two analytes in the samples reported in SDG D4664 have been qualified as estimated in value.

Data Package Deliverables

The sample report forms list incorrect reporting limits concentrations in the "Conc" field for undetected organic analytes. Those values should have been the same as those in the "LOQ/CRQL" field (two fold higher). The electronic table to which the qualifiers were applied have the correct values in the reporting limit field.

Volatile Analyses by EPA 8260C

Many of the samples exhibit low response of internal standard d4-1,4-dichlorobenzene on repeated analysis. The results for the eight analytes that are quantitatively associated with that internal standard have been qualified as estimated in those samples. The initial analyses are used, as they show better responses. The affected samples are SS-01, SS-05, SS-08, SS-09, SS-11, SS-15, SS-16, SS-17, and all samples reported in SDG D4608 (the SDs) except SD-06A.

Matrix spikes of SD-07B and SS-14 show acceptable recoveries and correlations.

Laboratory Control Samples (LCSs) show recoveries that are within the laboratory acceptance ranges, with the exception of that for 1,2,3-trichlorobenzene (75%) in the LCS associated with SD-07B. The result for that compound in the sample is qualified as estimated in value, and may have a low bias.

Surrogate recoveries are within required ranges. Blanks show no contamination, and instrument tunes meet protocol requirements.

The results for 1,4-dioxane are rejected due to very poor instrument response that is typical of that analyte. The other calibration standard responses are acceptable.

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag. TICs were not reported on the electronic deliverable, and therefore edits were not performed.

TCL Semivolatiles by EPA 8270D

Several analytes produced elevated recoveries in the LCSs. Detected results for those compounds in the associated project samples have been qualified as estimated. The affected analytes are benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, and acenaphthene.

Surrogate and internal standard recoveries are within required ranges. Blanks show no contamination, and instrument tunes meet protocol requirements.

Matrix spikes of SD-07B and SS-14 show acceptable recoveries and correlations.

Calibration standards showed acceptable responses, with the exception of those for 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol (RRFs below 0.05 in the lowest calibration standards) in the calibration standards associated with samples reported in D4608. The results of those two compounds have been qualified as estimated in those samples.

Many of the surface soil samples were analyzed at tenfold or twenty fold initial dilution due to what the laboratory described as "bad matrices." This resulted in proportionally elevated reporting limits for those samples, most of which show no or low level detections. The limits are therefore above those of the low level, but below those of the medium level. The end users of the data should be aware that the elevated limits may be above concentrations of concern. The sample chromatograms do not show responses that warrant the degrees of dilution.

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag.

TICs reported with the laboratory "A" and/or "B" flags are processing artifacts, and should be disregarded and removed as sample components.

The identifications of the TICs reported at 8.65' and 22.26' in SD-Duplicate, at 12.58 in SD-07B', and 16.8' in SD-04, should be edited to unknown.

TICs were not reported on the electronic deliverable, and therefore edits were not performed.

TCL Pesticide and TCL PCB Analyses by EPA 8081A and EPA 8082

Some of the reported pesticide detections exhibit elevated dual column quantitative correlations, indicating matrix interferences that may result in elevated quantitative values. Those results have been qualified estimated in value.

Both surrogate DCB recoveries are below the acceptance range for the following samples, results for which are qualified as estimated in the project samples: SS-05, SS-06, SS-07, SS-08, SS-10, SS-11, SS-12, SS-13, SS-14, SS-16, SS-17, SS-18, and SS-Duplicate. It is noted that those samples produced much higher recoveries in the pesticide fraction.

Due to chromatographic responses that appear to be within the analyte elution ranges, the results for heptachlor, b-BHC, and d-BHC in SD-04 have been qualified as estimated in value.

Matrix spikes of SD-07B and SS-14 show recoveries and correlations of the pesticides and Aroclors 1016 and 1260 that are within the laboratory acceptance ranges.

The pesticide calibration standards associated with samples reported in SDG D4664 show non-compliant elevated responses for several analytes. The calibration standards in the reanalysis sequence show elevated responses (43%D to 52%D) for 4,4'-DDT. Therefore, detected results for that compound in SS-8, SS-9, and SS-11 are qualified as estimated. The reanalyses are to be used.

The Aroclor 1016/1260 calibration standards show elevated responses for some congeners (up to 69%D). Detected results for Aroclors in the associated samples, which are all those reported in SDG D4664 except SS-01, SS-02, SS-05, SS-06, and SS-07, are therefore qualified as estimated.

The laboratory should have processed continuing calibration verification standards for all Aroclor mixtures that were detected in the samples.

Pesticide surrogate recoveries are within recommended ranges. Blanks show no contamination.

TAL Metals Analyses by EPA 6010B and 7470/7471

The matrix spike and duplicate evaluations for SD-07B shows low recoveries for antimony (39% and 40%). The results for that element in the samples reported in SDG D4608 are therefore qualified as estimated in value.

The following analytes produced outlying recoveries and/or correlations in the matrix spikes of SS-14, and results are qualified as estimated in the samples reported in SDG D4664: antimony (20% and 10%; 70%RPD), cadmium (212% and 194%), cobalt (170% and 168%), nickel (252% and 253%), potassium (179% and 297%), silver (53%; 51%RPD), and thallium (136% and 138%).

The serial dilution evaluation of SS-14 shows elevated correlations (12%D to 39%D) for numerous elements, detected results for which are qualified as estimated in the samples reported in SDG D4664: barium, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, potassium, and sodium.

The following analytes produced elevated serial dilution correlations (11%D to 21%D) in SD-07B, and the detected results for those elements in the samples reported in SDG D4608 are therefore qualified as estimated in value: barium, calcium, chromium, copper, iron, magnesium, manganese, potassium, sodium,and zinc. These should have been flagged as "E" on the report forms and the QC summary Form 9. Potassium and sodium should have been mentioned in the laboratory case narrative.

Calibration standard responses are compliant, and blanks show no contamination above the reporting limits.

Total Cyanide and Total Organic Carbon by EPA 9012 and Lloyd Kahn

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

Matrix spike/duplicate evaluations of total cyanide in SS-14 and SD-07B show acceptable accuracy and precision.

The matrix spike evaluation for TOC in SD-07B is not applicable due to the relatively high concentration of that analyte in the parent sample. The duplicate correlation was acceptable.

Total Organic Carbon (TOC) values are above the linear range of instrument, and have therefore been qualified as estimated in value. The samples were processed at additional dilution, in order to bring responses into range, but were still out of range.

The derivation of the TOC sample results cannot be performed with the data provided, in that raw response data are provided for the initial calibration standards, but final calculated results only are provided for the samples and QC. Full validation would require submission of more specific instrument output.

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

Very truly yours,

Judy Harry

Att.

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and CASE NARRATIVES

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SD-05A	D4608-01	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-05B	D4608-02	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-06A	D4608-03	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-06B	D4608-04	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-07A	D4608-05	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-07B	D4608-06	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-03	D4608-07	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-04	D4608-08	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-06FP	D4608-09	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-07B	D4608-10	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-DUPLICATE	D4608-13	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
TRIPBLANK	D4608-14	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SS-01	D4664-01	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-02	D4664-02	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-05	D4664-03	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-06	D4664-04	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-07	D4664-05	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-08	D4664-06	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-09	D4664-07	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-10	D4664-08	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-11	D4664-09	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-12	D4664-10	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-13	D4664-11	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-14	D4664-12	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-15	D4664-15	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-16	D4664-16	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-17	D4664-17	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-18	D4664-18	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SS-DUPLICATE	D4664-19	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_F were done using GC column RTX-VMS, which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by Supelco, VOCARB 3000, Tekmar 2000 Concentrator.The analysis performed on instrument MSVOA_G were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by OI Analytical, OI #10 Trap , OI Eclipse 4660 Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260C.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements except for 915206-SD-05A, 915206-SD-05ARE, 915206-SD-05B, 915206-SD-05BRE, 915206-SD-06B, 915206-SD-06BRE, 915206-SD-07A, 915206-SD-07ARE, 915206-SD-07B, 915206-SD-07BRE, 915206-SD-03, 915206-SD-03RE, 915206-SD-04, 915206-SD-04RE, 915206-SD-06FP, 915206-SD-06FPRE, 915206-SD-07BMSD, 915206-SD-DUPLICATE and 915206-SD-DUPLICATERE.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD {D4608-12MSD} with File ID: VF035749.D recoveries met the acceptable requirements except for Isopropylbenzene[146%] .
The RPD for {D4608-12MSD} with File ID: VF035749.D recoveries met criteria except for 1,2,3-Trichlorobenzene[24%], 1,2,4-Trichlorobenzene[27%], 2-Butanone[35%], 2-Hexanone[22%], 4-Methyl-2-Pentanone[28%], Acetone[22%] and Bromoform[21%] .
The Blank Spike for {VF1023SBS01} with File ID: VF035746.D met requirements for all samples except for 1,2,3-Trichlorobenzene[75%] .

The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 15% in the Initial Calibration (Method 82G101512W.M) for Toluene-d8 ,4-Bromofluorobenzene and Bromoform these compounds are passing on Linear regression, The %RSD is greater than 15% in the Initial Calibration (Method 82G101512W.M) for Chloroethane, 2-Hexanone these compounds are passing on Quadratic regression .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Additional Comments:
Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: SVOC-TCL BNA -20

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for SVOC-TCL BNA -20.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_E using GC Column RXI-5 SILMS which is 30 meters, 0.25 mm ID, 0.50 um df, Catalog # 13638-124.The samples were analyzed on instrument BNA_F using GC Column RTX-5 SILMS which is 20 meters, 0.18 mm ID, 0.36 um df, Catalog # 42704.The analysis of SVOC-TCL BNA -20 was based on method 8270D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD for {D4608-12MSD} with File ID: BE079541.D recoveries met criteria except for 4-Chloroaniline[24%] .
The Blank Spike for {PB66451BS} with File ID: BF059066.D met requirements for all samples except for 2,2-oxybis(1-Chloropropane)[106%], 2,4,6-Trichlorophenol[106%], 2-Nitroaniline[106%], 4-Chlorophenyl-phenylether[106%], Acenaphthene[106%], Acenaphthylene[106%], Benzo(a)pyrene[112%], Benzo(b)fluoranthene[106%], Benzo(g,h,i)perylene[106%], Benzo(k)fluoranthene[106%], Dibenzofuran[106%], Diethylphthalate[106%], Fluorene[106%], Hexachlorobutadiene[112%], Hexachlorocyclopentadiene[170%] and Hexachloroethane[100%] but in this sequence there is no samples were analyzed .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.

The %RSD is greater than 15% in the Initial Calibration (Method 8270-BE101112.M) for 4,6-Dinitro-2-methylphenol and Pentachlorophenol Benzoic Acid , 4-Nitrophenol these compounds are passing on Linear regression 2,4-Dinitrophenol this compound is passing on Quadratic regression .
The %RSD is greater than 15% in the Initial Calibration (Method 8270-BF101612.M) for 2,4-Dinitrophenol , 4,6-Dinitro-2-methylphenol these compounds are passing on Linear regression .
The Continuous Calibration File ID BE079530.D met the requirements except for Hexachlorocyclopentadiene and 2,4-Dinitrophenol .The Continuous Calibration File ID BF059064.D met the requirements except for 3,3-Dichlorobenzidine but it is not present in the associated samples .
The Tuning criteria met requirements.

E. Additional Comments:
Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: PCB

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_B. The front column is Rtx-CLPesticides which is 30 meters, 0.32 mm ID, 0.32 um df, Catalog # 11141. The rear column is RTX-CLPestII which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog # 11324.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration File ID PB003701.D, PB003714.D, PB003716.D, met the requirements except for Decachlorobiphenyl in first column .The Continuous Calibration File IDPB003735.D met the requirements except for Decachlorobiphenyl in both column and AR1260 (peak 5) in second column. The Continuous Calibration File ID PB003741.D met the requirements except for AR1016 (peak 3) and AR1260 (peak 5) in second column but it is passing in first column. The samples have no hit for these compounds.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: Pesticide-TCL

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for Pesticide-TCL.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_D. The front column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 7HM-G017-11 . The rear column is ZBMR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalog # 7HM-G016-17.The analysis of Pesticide-TCLs was based on method 8081B and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS {D4608-11MS} with File ID: PD013822.D recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements .
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

915206-SD-07BL CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for Mercury,Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils). The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike(915206-SD-07BS) analysis met criteria for all samples except for Antimony.
The Matrix Spike Duplicate(915206-SD-07BSD) analysis met criteria for all samples except for Antimony.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution(915206-SD-07BL) met criteria for all samples except for Barium, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Nickel and Zinc.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4608
Test Name: Cyanide,TOC

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 10/19/2012.
1 Water sample was received on 10/19/2012.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20, TOC, VOC-TCLVOA-10 and VOC-TCLVOA-10. This data package contains results for Cyanide,TOC.

C. Analytical Techniques:
The analysis of Cyanide was based on method 9012B and The analysis of TOC was based on method Lloyd Kahn.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Samples 915206-SD-05A, 915206-SD-05B, 915206-SD-06A, 915206-SD-06B, 915206-SD-07A, 915206-SD-07B, 915206-SD-03, 915206-SD-04, 915206-SD-06FP and 915206-SD-DUPLICATE were diluted for TOC due to high concentrations.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:
Samples are over range and Dilutions are also OR for the TOC. no further dilution reported.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_F were done using GC column RTX-VMS, which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by Supelco, VOCARB 3000, Tekmar 2000 Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260C.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements except for 915206-SS-01, 915206-SS-01RE, 915206-SS-05, 915206-SS-05RE, 915206-SS-08, 915206-SS-08RE, 915206-SS-09, 915206-SS-09RE, 915206-SS-11, 915206-SS-11RE, 915206-SS-14MSD, 915206-SS-15, 915206-SS-15RE, 915206-SS-16, 915206-SS-16RE, 915206-SS-17 and 915206-SS-17RE.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD {D4664-14MSD} with File ID: VF035787.D recoveries met the acceptable requirements except for 1,1,2,2-Tetrachloroethane[185%] and Isopropylbenzene[185%] .
The RPD for {D4664-14MSD} with File ID: VF035787.D recoveries met criteria except for 1,1,2,2-Tetrachloroethane[43%], 1,2,3-Trichlorobenzene[34%], 1,2,4-Trichlorobenzene[30%], 1,2-Dibromo-3-Chloropropane[29%] and Isopropylbenzene[33%].
The Blank Spike for {VF1025SBS01} with File ID: VF035783.D met requirements for all samples except for 2-Hexanone[140%] but it was not detected in Samples.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration File ID VF035781.D met the requirements except for 2-Butanone,4-Methyl-2-Pentanone,1,1,2,2-Tetrachloroethane and 2-Hexanone but they were not detected in Samples.

The Tuning criteria met requirements.

E. Additional Comments:

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: SVOC-TCL BNA -20

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for SVOC-TCL BNA -20.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column RTX-5 SILMS which is 20 meters, 0.18 mm ID, 0.36 um df, Catalog # 42704.The samples were analyzed on instrument BNA_G using GC Column RXI-5 SILMS which is 30 meters, 0.25 mm ID, 0.50 um df, Catalog # 13638-124.The analysis of SVOC-TCL BNA -20 was based on method 8270D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for PB66592BL [Terphenyl-d14 - 127%] and PB66592BLRE [Terphenyl-d14 - 124%].
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD for {D4664-14MSD} with File ID: BF059166.D recoveries met criteria except for 2,4-Dinitrophenol[26%], 3,3-Dichlorobenzidine[23%], 4-Chloroaniline[37%], bis(2-Ethylhexyl)phthalate[21%], Fluoranthene[25%], Hexachlorocyclopentadiene[30%], Phenanthrene[21%] and Pyrene[21%] .
The Blank Spike for {PB66592BS} with File ID: BF059161.D met requirements for all samples except for 2,4,6-Trichlorophenol[112%], Phenol[106%], bis(2-Chloroethyl)ether[106 %], 2-Chlorophenol[112%],2-Methylphenol[118%],2,2-oxybis(1-Chloropropane)[106 %], 3+4-Methylphenols[112 %],N-Nitroso-di-n-propylamine[118%],Hexachloroethane[100%], Hexachlorocyclopentadiene[148%],2,4,6-Trichlorophenol[112%],Acenaphthene[1125], Benzo(b)fluoranthene[106%],Benzo(k)fluoranthene[106%],Benzo(a)pyrene[112%], Benzo(g,h,i)perylene[106%].
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.

The %RSD is greater than 15% in the Initial Calibration (Method 8270-BF101612.M) for 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol these compounds are passing on Linear regression.
The %RSD is greater than 15% in the Initial Calibration (Method 8270-BG110612.M) for Terphenyl-d14, 2,4-Dinitrophenol these compounds are passing on Quadratic regression.
The Continuous Calibration met the requirements.
The Tuning criteria met requirements.
Samples 915206-SS-01, 915206-SS-05, 915206-SS-07, 915206-SS-11, 915206-SS-12, 915206-SS-13, 915206-SS-15, 915206-SS-16, 915206-SS-17 and 915206-SS-DUPLICATE were diluted due to bad matrices.
Sample 915206-SS-09 was diluted due to high concentration.

E. Additional Comments:
Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: Pesticide-TCL

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for Pesticide-TCL.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_D. The front column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 7HM-G017-11 . The rear column is ZBMR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalog # 7HM-G016-17.The analysis of Pesticide-TCLs was based on method 8081B and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration File ID PD014046.D met the requirements except for Heptachlor,4,4-DDE,Endosulfan II,4,4-DDD,Endosulfan Sulfate,Endrin ketone and Decachlorobiphenyl are failing in first column but passing in second column.
The Continuous Calibration File ID PD014062.D met the requirements except for Heptachlor,Endosulfan I,Dieldrin,4,4-DDE,Endrin,Endosulfan II, Endosulfan Sulfate,Methoxychlor,Endrin ketone,Endrin aldehyde and Decachlorobiphenyl are failing in first column but passing in second column while 4,4-DDD is failing in both columns.
Due to the bad sample matrix interferences, CCAL showed high recoveries in the first column. and associate samples have the hits so those samples were reanalyzed to confirm the results.

F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: PCB

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_C. The front column is RTX-CLPest which is 30 meters, 0.32 mm ID, 0.5 um df,Catalog # 11139. The rear column is RTX-CLPestII which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog # 11324.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for 915206-SS-01 [Decachlorobiphenyl(2) - 44%], 915206-SS-02 [Decachlorobiphenyl(2) - 41%], 915206-SS-05 [Decachlorobiphenyl(1) - 46%, Decachlorobiphenyl(2) - 33%], 915206-SS-06 [Decachlorobiphenyl(1) - 33%, Decachlorobiphenyl(2) - 19%], 915206-SS-07 [Decachlorobiphenyl(1) - 43%, Decachlorobiphenyl(2) - 30%], 915206-SS-08 [Decachlorobiphenyl(1) - 55%, Decachlorobiphenyl(2) - 36%], 915206-SS-10 [Decachlorobiphenyl(1) - 39%, Decachlorobiphenyl(2) - 29%], 915206-SS-11 [Decachlorobiphenyl(1) - 41%, Decachlorobiphenyl(2) - 28%], 915206-SS-12 [Decachlorobiphenyl(1) - 43%, Decachlorobiphenyl(2) - 27%], 915206-SS-13 [Decachlorobiphenyl(1) - 38%, Decachlorobiphenyl(2) - 28%], 915206-SS-14 [Decachlorobiphenyl(1) - 54%, Decachlorobiphenyl(2) - 40%], 915206-SS-14MS [Decachlorobiphenyl(2) - 46%], 915206-SS-14MSD [Decachlorobiphenyl(2) - 45%], 915206-SS-15 [Decachlorobiphenyl(2) - 45%], 915206-SS-16 [Decachlorobiphenyl(1) - 57%, Decachlorobiphenyl(2) - 37%], 915206-SS-17 [Decachlorobiphenyl(1) - 57%, Decachlorobiphenyl(2) - 40%], 915206-SS-18 [Decachlorobiphenyl(1) - 40%, Decachlorobiphenyl(2) - 25%], 915206-SS-DUPLICATE [Decachlorobiphenyl(1) - 53% and Decachlorobiphenyl(2) - 33%].
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .

The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration File ID PC010984.D met the requirements except for Aroclor-1260(Peak04,05) and Decachlorobiphenyl are failing in 2nd column but passing in 1st column.The Continuous Calibration File ID PC010996.D met the requirements except for Aroclor-1260(Peak01,03,04 and 05) and Decachlorobiphenyl are failing in second column but passing in first column.The Continuous Calibration File ID PC011008.D met the requirements except for Aroclor-1016(Peak05),Aroclor-1260(All Peaks) and Decachlorobiphenyl are failing in second column but passing in first column.The Continuous Calibration File ID PC011014.D met the requirements except for Aroclor-1260(Peak004,05) and Decachlorobiphenyl are failing in second column but passing in first column and the samples have no hit for these compounds.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

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CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for Mercury,Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils). The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Samples 915206-SS-09 was diluted due to high concentrations for Mercury, 915206-SS-14 was diluted due to high concentration for Iron.
The Blank Spike met requirements for all samples.
The Duplicate (915206-SS-14D)analysis met criteria for all samples except for Nickel.
The Duplicate (915206-SS-14SD)analysis met criteria for all samples except for Antimony, and Silver.
The Matrix Spike(915206-SS-14S) analysis met criteria for all samples except for Antimony, Cadmium, Cobalt, Nickel, Potassium, Silver and Thallium.
The Matrix Spike Duplicate (915206-SS-14SD)analysis met criteria for all samples except for Antimony, Cadmium, Cobalt, Nickel, Potassium, Thallium .
The Matrix Spike Duplicate (915206-SS-14SD)analysis met criteria for all samples except for Antimony, Cadmium, Cobalt, Nickel, Potassium, Thallium .
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (915206-SS-14L)met criteria for all samples except for Barium, Cadmium, Calcium, Chromium, Copper, Lead, Magnesium, Manganese,Mercury and Iron.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

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CHEMTECH

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # D4664
Test Name: Cyanide

A. Number of Samples and Date of Receipt:
19 Solid samples were received on 10/25/2012.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL, PCB, Pesticide-TCL, SVOC-TCL BNA -20 and VOC-TCLVOA-10. This data package contains results for Cyanide.

C. Analytical Techniques:
The analysis of Cyanide was based on method 9012B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.

E. Additional Comments:
CCV05 is failing for Cyanide and the associate sample has less than reporting limit ,so the sample was not re-analyzed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

February 2, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Boring, Surface Water, and Groundwater Samples

Chemtech SDG Nos. D4685, D4690, D4714, D4715, D4759, and D4968

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by Chemtech, that pertain to samples collected between 10/25/12 and 10/2411/29/12 at the Former Lackawanna Incinerator site. Seventeen soil samples, nine aqueous samples, five soil field duplicates, and two aqueous field duplicates were processed for TCL volatiles, TCL semivolatiles, TCL Pesticides, TCL PCBs, and TAL metals by USEPA SW846 6000/7000/8000 methods. All of those except two of the soil samples were also processed for total cyanide by EPA 9012, and one of the soil samples was also processed for Total Organic Carbon (TOC) by the Lloyd Kahn methodology. The aqueous samples and the duplicates were also processed for eight wet chemistry parameters and total hardness. Fifty four other soil samples were processed for TCL semivolatiles and TAL metals.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Preparation/Method/Trip Blanks
* Laboratory Control Samples (LCSs)

* Instrumental Tunes
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c).

In summary, most sample results are usable either as reported, or with minor qualification or edit to non-detection. The following exceptions are noted:

- 1,4-dioxane results are not usable in the samples due to poor response inherent with the methodology
- results for two phenolic analytes in one soil sample are not usable due to apparent matrix effect.
- the pesticide results for a field duplicate are rejected; however those of the parent sample are not
- detected values for some of the metals are edited to non-detection at elevated reporting limits due to presence in the associated rinse blank

Additionally, many of the metals results are qualified as estimated due to apparent matrix effects.

Copies of the laboratory sample identification summaries (Forms S-1) and the laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Chain-of-Custody/Sample Receipt

Samples collected on Friday, 10/26/12 were shipped for overnight delivery. Although delivery was attempted twice, delivery was not made because -the laboratory was closed due to storm conditions. The sample coolers were stored in the Federal Express warehouse facility until they could be delivered five days after collection. The laboratory attests that the temperatures at receipt were 5°C, with ice and water present. Technical preparation and analysis holding times were met, so no qualification to the data is indicated.

Blind Field Duplicates

Blind field duplicate evaluations were performed on SB14(0-2), SB05(2-4), SB18(0-2), SB12A(0-2), SB11(4-6), SW-04, and MW-08. Correlations meet validation guidelines, with the following exceptions, results of which have been qualified as estimated in value in the indicated parent samples and their respective duplicates:

- aluminum, barium, cadmium, chromium, magnesium, sodium, vanadium, and zinc (57%RPD to 234%RPD) in SB14(0-2)
- cadmium, chromium, copper, iron, lead, magnesium, nickel, potassium, zinc (56%RPD to 100%RPD), and silver (>2X±CRDL) in SB05(2-4)

- styrene, pyrene, benzo(b)fluoranthene, fluoranthene, (all >2X±CRDL), and arsenic, cobalt, mercury (53%RPD to 169%RPD) in SB18(0-2)
- cadmium, chromium copper, lead, manganese, sodium, and zinc (67%RPD to 126%RPD), and Aroclor 1254 and thallium (both >2X±CRDL) in SB12A(0-2)
- calcium, copper, lead, magnesium, potassium, and sodium (62%RPD to 158%RPD), and mercury (>2X±CRDL) in SB11(4-6)
- sodium (108%RPD) in SW-04
- acetone (>±CRDL) and aluminum (37%RPD) in MW-08

Data Package Deliverables

The sample report forms list incorrect reporting limits concentrations in the "Conc" field for undetected organic analytes. Those values should have been the same as those in the "LOQ/CRQL" field (two fold higher). The electronic table to which the qualifiers were applied has the correct values in the reporting limit field.

The attached laboratory Form S-1 for SDG D4685 was incorrect, and has been manually edited to reflect actual required analyses. The Form S-1 was not included in the data package D4714.

The laboratory does not properly flag report Forms 1 or QC summary Forms 8 to reflect the elements with associated outlying ICP serial dilution correlations.

Many of the laboratory case narratives do not accurately discuss outlying parameters such as serial dilution correlations and calibration standard responses. The metals narrative for SDG D4759 only discusses one of the two pair of matrix spikes processed.

The organic "B" flag was not always applied to sample results where applicable.

Other omissions are noted within the specific analytical sections below.

Volatile Analyses by EPA 8260C

Several of the samples exhibit low response of internal standard d4-1,4-dichlorobenzene on repeated analysis. The results for the eight analytes that are quantitatively associated with that internal standard have been qualified as estimated in those samples. The initial analyses are used, as they show better responses. The affected samples are SB09(2-4), SB18(0-2), and Duplicate 02A.

SB09(0-2) and Duplicate 04 show outlying responses for two internal standards, and results for the fifteen associated analytes have therefore been qualified as estimated in those samples. The initial analyes were used.

Sample SB13(20-22) showed low response for all four internal standards on the first analysis, and low response for three of the internal standards on the reanalysis. The reanalysis is used, with results for target analytes associated with the outlying internal standards qualified as estimated in value.

The result for acetone in Duplicate 04 is qualified as tentative in identification and estimated in value due to poor mass spectral quality.

Matrix spikes of SB13(0-4), SB14(0-2), SB05(2-4), SB12A(0-2), SB-18(0-2), SB11(4-6), and MW-07 show acceptable recoveries and correlations, with the following exceptions, results for which are qualified as estimated in the parent sample:

- tetrachloroethene (172% and 222%) in SB13(0-4)
- methylcyclohexane, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene (35% to 43%) in SB-18(0-2)

Laboratory Control Samples (LCSs) show recoveries that are within the laboratory acceptance ranges. Surrogate recoveries are within required ranges. Instrument tunes meet protocol requirements.

Due to presence in the associated method blanks, detected results for methylene chloride in the samples reported in SDG D4685, D4690, D4714, D4715, and D4759 are edited to reflect non-detection.

The results for 1,4-dioxane are rejected due to very poor instrument response that is typical of that analyte.

The other calibration standards show acceptable responses, with the exception of those for the following, results for which are qualified as estimated in the indicated samples:

- bromoform, methyl acetate, carbon tetrachloride (23%RSD to 42%RSD) in the aqueous samples reported in SDG D4759

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag. TICs were not reported on the electronic deliverable, and therefore edits were not performed.

TCL Semivolatiles by EPA 8270D

Several analytes produced non-compliant elevated recoveries (up to 118%) in the LCSs. Detected results for the specifically associated compounds in the project samples have been qualified as estimated. The affected analytes are anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, 2-methylnaphthalene, and fluoranthene.

Results for analytes initially reported with the "E" flag are derived from the dilution analyses of the samples, thereby reflecting responses within the established linear range of the instrument.

The results for 3+4-dimethylphenol in SB13(20-22) and acetophenone in SB08(6-8) are qualified as tentative in identification and estimated in value due to poor mass spectral quality.

The laboratory acceptance ranges for two of the acid aqueous surrogates are identical and atypically generous, at 10% to 130%. The actual sample surrogate recoveries are reasonable, and no qualification is made.

Internal standard recoveries are within required ranges. Blanks show no contamination, and instrument tunes meet protocol requirements.

The matrix spikes of SB13(0-4) show recoveries below 10% for 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol, and results for those two compounds in that parent sample are therefore rejected.

Hexachlorocyclopentadiene produced recoveries below 10% in the matrix spikes of SB18(0-2), and the non-detected result for that analyte is therefore rejected in the parent sample. Fluoranthene, pyrene, and benzo(b)fluoranthene produced low recoveries (-5% to 25%) in both of those spikes, and the low level detections of those compounds in the parent sample have been qualified as estimated in value. All except five of the target anaytes showed elevated duplicate correlations in those spikes. The recoveries of the surrogate standards in those spikes show similar variance, indicating an extract specific anomaly.

Matrix spikes of SB14(0-2), SB-05(2-4), SB12A(0-2), SB11(4-6), and MW-07 show acceptable recoveries and correlations.

The LCS associated with the samples reported in D4715 initially showed eighteen outlying recoveries. That same LCS extract was reanalyzed a day later, with the project samples, and showed only one elevated recovery (for an analyte not detected in the samples). No qualification is made.

2,4-Dinitrophenol (RRFs below 0.05 in the lowest calibration standards and/or outlying linearity) in the calibration standards associated with samples reported in D4685. The results of those that compound have been qualified as estimated in those samples.

The response (RRF) for 2,4-dinitrophenol in the lowest concentration calibration standard associated with the groundwater samples was below 0.01, and therefore not usable. The reporting limit for that compound in those samples has been edited upward from 10 ug/L to 25 ug/L.

Other calibration standards showed acceptable responses.

Some of the soil samples were analyzed at initial dilution. This resulted in proportionally elevated reporting limits for analytes not detected in those samples.

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag.

TICs reported with the laboratory "A" and/or "B" flags are processing artifacts, and should be disregarded and removed as sample components. Some of the TICs were not properly flagged as "B" when applicable.

TICs reported in the aqueous groundwater samples include two at 7.2' and 18.4', which are also detected in the associated method and rinse blanks. They are ID'd as being various isomers of DDD or DDT. These are not actual sample components, and should be removed from the TIC listings.

The identifications of the following TICs should be edited to "unknown":

- that reported at 5.28' in SB09(6-8)
- "octadecane" in SB08(6-8)
- "tetradecane" in SB18(0-2) and Duplicate 04

TICs were not reported on the electronic deliverable, and therefore edits were not performed.

The semivolatile internal standard summary Form 8 was not included in the data package for SDG D4968. The raw data were reviewed and found to be acceptable.

TCL Pesticide and TCL PCB Analyses by EPA 8081A and EPA 8082

The laboratory aqueous pesticide surrogate acceptance ranges are atypically generous, at 10% to 172% and 10% to 102%.

Due to a low chromatographic response that appears to be within the analyte elution range, the non-detected result for methoxychlor in SB15(0-2) has been qualified as estimated in value.

Matrix spikes of pesticides in SB13(0-4), SB14(0-2), SB-05(2-4), SB18(0-2), SB11(4-6), and MW-07, and of Aroclors 1016 and 1260 in SB14(0-2), SB12A(0-2), SB-18(0-2), SB-05(2-4), SDB11(4-6), and MW-07 show recoveries and correlations that are within the laboratory acceptance ranges.

Due to low calibration verification standard responses (40%D to 84%D) on both analytical columns, the results for heptachlor, endrin, 4,4-DDT, methoxychlor, and endrin ketone in the samples reported in SDG D4715 are qualified as estimated in value. The initial analyses are used. Many other pesticide calibration standards show non-compliant elevated recoveries. Associated sample results report no detection, and are therefore not affected.

A response that appears to be sulfur interference was observed in the PCB analyses in the samples reported in SDG D4685. The response dwarfed all other responses in the chromatograms, prohibiting independent verification of the reported results. The verification of reported non-detections were made from the pesticide analyses of the samples, which did not show the same interferences.

The chromatograms for the pesticide analyses of SB09(2-4), SB12A0-2), SB18(0-2), and Duplicate 04 show numerous responses (some of which are from the Aroclor 1254 in some of those samples). The analysts determined that none of the responses meet the criteria for being reported as pesticide detections. Because unedited integration/retention time raw data are not (required or) provided, independent evaluation of those results is not possible. Full validation would require resubmission of integration and retention time data.

The chromatograms for the PCB analyses of SB08(2-4), SB18(0-2), Duplicate 04, and SD-01 are not scaled to ASP requirements, and the background baseline and interferent responses are so high that the surrogate standard responses in those samples are dwarfed, as would be any Aroclor responses. Full validation would require resubmission of properly scaled chromatograms so that the analyst interpretation can be confirmed. Some of the baseline responses in the associated calibration standards, although not nearly as high as those in the samples, are higher than those allowed by the NYS. This indicates that instrument maintenance should be performed.

The pesticide and PCB background baseline response for sample Duplicate 05 was so high as to prohibit usable evaluation; sample target analyte responses would be masked. Therefore, results for pesticides and PCBs in that duplicate are rejected. The background for the parent sample was not as bad; those pesticide and PCB results are therefore qualified as estimated.

The laboratory should have processed continuing calibration verification standards for all Aroclor mixtures that were detected in the samples. Because they did not, detected results for Aroclor 1254 in the samples reported in SDG 4714 and D4715 have been qualified as estimated in value.

TAL Metals and Total Hardness Analyses by EPA 6010B and 7470/7471

Total hardness results were misreported by the laboratory as being twice the actual. The concentration factor of two produced by the digestion process was apparently not incorporated into the calculation. Those results have been corrected on the qualified EDD.

Results for analytes initially reported with the "OR" flag are derived from the dilution analyses of the samples, thereby reflecting responses within the established linear range of the instrument.

The rinse blank associated with the aqueous samples collected 11/28/12 shows concentrations above the reporting limit for several analytes, and the rinse blank associated with aqueous samples collected 11/29/12 shows a concentration of zinc above the reporting limit. Detected associated sample results within five-fold of those concentrations have been edited to reflect non-detection. This results in elevated reporting limits, some of which are at levels that may not provide usable data. These should be considered by the end-users of the data. The affected analytes include aluminum, chromium, copper, iron, nickel, and zinc.

The groundwater samples MW-04, MW-06, and MW-08 were submitted for laboratory filtered metals. Due to the delayed preservation (after filtration at the laboratory), all results for the dissolved metals in those samples have been qualified as estimated.

Both of the matrix spikes of SB13(0-4) show low recoveries for antimony (38% and 39%) and chromium (72% and 73%), and elevated recoveries (309% and 244%) for aluminum. The results for those elements in the samples reported in SDG D4685 are therefore qualified as estimated in value. The validation protocol acceptance ranges of 75% to 125% are used for the matrix accuracy evaluation.

Both of the matrix spikes of SB05(2-4) show outlying recoveries for antimony (both 32%) and copper (111% and 168%). The results for those elements in the samples reported in SDG D4714 are therefore qualified as estimated in value.

The following analytes produced outlying recoveries (32% to 71%) in both of the matrix spikes of SB14(0-2), and results are qualified as estimated in the samples reported in SDG D4690: antimony, arsenic, barium, beryllium, chromium, copper, selenium, silver, and vanadium.

The following analytes produced outlying recoveries (36% to 74%) in both of the matrix spikes of SB11(4-6), and results are qualified as estimated in the samples reported in SDG D4759: antimony, arsenic, barium, chromium, potassium, selenium, and silver.

Two sets of matrix spikes were performed in SDG D4715, for parent samples SB18(0-2) and SB12(0-2). Those for the former show outlying recoveries for antimony, arsenic, beryllium, chromium, potassium, selenium, silver, and vanadium (40% to 64%); those for the latter show outlying recoveries for antimony, chromium, copper, and vanadium (antimony low at 34%, other three at 135% to 502%). Per validation guidelines, results for all nine elements are qualified as estimated in the samples reported in that SDG.

The matrix spikes of MW-07 show outlying recoveries for antimony, arsenic, barium, cadmium, copper, lead, selenium, thallium, and vanadium (65% to 75%). The results for those elements have been qualified as estimated in the samples reported in SDG D4968. The post-digest spikes reported for these elements were all between 17% and 39%.

The matrix spikes of SW-04 show outlying recoveries for potassium (126% and 131%). The results for that element in the aqueous samples reported in SDG D4759 are qualified as estimated.

The post digest spikes for SB11(4-6) and SW-04 (both reported in SDG D4759) were apparently not spiked, as they did not recover. The lack of recoveries were reported on the summary forms, but not mentioned in the laboratory case narrative. Qualification is made based on the pre-digestion spikes of these samples (noted above).

Laboratory duplicate correlations were acceptable.

The serial dilution evaluation of SB05(2-4) shows elevated correlations (15%D and 12%D) for copper and manganese, detected results for which are qualified as estimated in the samples reported in SDG D4714.

Two serial dilution evaluations were performed in SDG D4715, for parent samples SB18(0-2) and SB12(0-2). Those for the former show outlying correlations for aluminum, arsenic, barium, calcium, chromium, copper, magnesium, manganese, potassium, sodium, and vanadium (11%D to 37%D); those for the latter show outlying recoveries for arsenic, cadmium, calcium, copper, iron, lead, manganese, nickel, and zinc (17%D to 57%D). Per validation guidelines, results for all detected elements in the samples except for those for mercury, cobalt, and thallium are qualified as estimated in the samples reported in that SDG.

The following analytes produced elevated serial dilution correlations in SB13(0-4) (25%D to 38%D) and SB14(0-2) (32%D to 68%D), and the detected results for those elements in the samples reported in SDGs D4685 and D4690 are therefore qualified as estimated in value: aluminum, barium, calcium, chromium, copper, manganese, magnesium, potassium, and sodium.

The following analytes produced elevated serial dilution correlations in SB11(4-6) (11%D to 18%D), and the detected results for those elements in the soil samples reported in SDG D4759 are therefore qualified as estimated in value: aluminum, copper, lead, manganese, magnesium, nickel, and sodium.

MW-07 shows outlying serial dilution correlations for aluminum, chromium, manganese, and potassium (13%D to 44%), and detected results for those analytes are qualified as estimated in the groundwater samples.

Sodium produced a very poor, elevated serial dilution correlation (135%D) in SW-04, and results for that element are therefore qualified as estimated in the samples reported in SDG D4759.

Sodium was processed at dilution in SW-04 and SW-Duplicate due to initial responses above the linear range of the instrument. Significant inconsistencies were observed not only with the field duplicate evaluation, but also between the initial and dilution analyses of those samples, the serial

dilution evaluation (135%D), and the matrix spike concentrations as compared to the parent sample. The reasons for those variations, unusual with the aqueous matrix, cannot be resolved with review of the raw data.

Total and dissolved concentrations correlate well, with the exception of that for sodium in MW-04. The results for sodium are qualified as estimated in both the filtered and unfiltered fractions of that sample.

Calibration standard responses are compliant.

The spike added concentrations on the matrix spike summary Forms 5A in D4685 and D4690 are not adjusted for matrix digestion weights or solids content.

Total Cyanide, Alkalinity, BOD, COD, Nitrate, Nitrite, Sulfate, Sulfide, and Total Organic Carbon

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

Results for chloride and sulfate initially reported with the "OR" flag are derived from the dilution analyses of the samples, thereby reflecting responses within the established linear range of the instrument.

The Total Organic Carbon value, even at further dilution, was above the linear range of instrument, and has therefore been qualified as estimated in value.

Matrix spike/duplicate evaluations of total cyanide in SB13(0-4), SB14(0-2), SB05(2-4), SB12A(0-2), SB11(4-6), SW-04, and MW-07 show acceptable accuracy and precision.

Cyanide produced low recoveries (53% and 57%) in the matrix spikes of SB18(0-2), and the result for that analyte in the parent sample is therefore qualified as estimated in value.

Matrix spike/duplicate evaluations were performed for various of the analytes on MW-02A, MW-03A, MW-05, and MW-07, with all recoveries and correlations within recommended limits.

The derivation of the TOC sample results cannot be performed with the data provided, in that raw response data are provided for the initial calibration standards, but final calculated results only are provided for the samples and QC. Full validation would require submission of more specific instrument output.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB13(0-4)	D4685-01	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(4-8)	D4685-04	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(8-10)	D4685-05	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(10-12)	D4685-06	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(12-14)	D4685-07	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(16-18)	D4685-08	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(20-22)	D4685-09	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB13(23-25)	D4685-10	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB-DUPLICATE-1	D4685-11	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB16(8-10)	D4685-12	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB16(10-12)	D4685-13	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB16(12-14)	D4685-14	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB16(14-16)	D4685-15	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB15(0-2)	D4685-16	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB15(2-4)	D4685-17	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB15(4-6)	D4685-18	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB15(6-8)	D4685-19	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB15(8-10)	D4685-20	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB17(0-2)	D4685-21	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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915206-SB14(0-2)	D4690-01	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB14(2-4)	D4690-04		8270D			6010B, 7471A	Chemtech -SOP
915206-SB14(4-6)	D4690-05		8270D			6010B, 7471A	Chemtech -SOP
915206-SB14(6-8)	D4690-06		8270D			6010B, 7471A	Chemtech -SOP
915206-SB14(8-10)	D4690-07		8270D			6010B, 7471A	Chemtech -SOP
915206-SB14(10-12)	D4690-08		8270D			6010B, 7471A	Chemtech -SOP
915206-SB16(0-2)	D4690-09		8270D			6010B, 7471A	Chemtech -SOP
915206-SB16(2-4)	D4690-10		8270D			6010B, 7471A	Chemtech -SOP
915206-SB16(4-6)	D4690-11		8270D			6010B, 7471A	Chemtech -SOP
915206-SB16(6-8)	D4690-12		8270D			6010B, 7471A	Chemtech -SOP
915206-SB17(2-4)	D4690-13	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB17(4-6)	D4690-14		8270D			6010B, 7471A	Chemtech -SOP
915206-SB17(6-8)	D4690-15		8270D			6010B, 7471A	Chemtech -SOP
915206-SB17(8-10)	D4690-16		8270D			6010B, 7471A	Chemtech -SOP
915206-SB17(10-12)	D4690-17		8270D			6010B, 7471A	Chemtech -SOP
915206-SB12(8-10)	D4690-18		8270D			6010B, 7471A	Chemtech -SOP
915206-SB12(12-14)	D4690-19		8270D			6010B, 7471A	Chemtech -SOP
915206-SB12(14-16)	D4690-20		8270D			6010B, 7471A	Chemtech -SOP

915206-SB12(16-18)	D4690-21		8270D			6010B, 7471A	Chemtech -SOP
915206-SB12(18-20)	D4690-22		8270D			6010B, 7471A	Chemtech -SOP

CHEMTECH 284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

Cover Page

Order ID : D4714

Project ID : LACKAWANNA INCINERATOR

Client : EA Engineering Science & Technology

Lab Sample Number	Client Sample Number
D4714-01	915206-SB-07(0-2)
D4714-02	915206-SB-07(2-4)
D4714-03	915206-SB-07(4-6)
D4714-04	915206-SB-07(6-8)
D4714-05	915206-SB-06(0-2)
D4714-06	915206-SB-06(2-4)
D4714-07	915206-SB-06(4-6)
D4714-08	915206-SB-06(6-8)
D4714-09	915206-SB-05(0-2)
D4714-10	915206-SB-05(2-4)
D4714-11	D4714-10MS
D4714-12	D4714-10MSD
D4714-13	915206-SB-05(4-6)
D4714-14	915206-SB-05(6-8)
D4714-15	915206-SB-DUPLICATE03
D4714-16	915206-SB-10(0-2)
D4714-17	915206-SB-10(2-4)
D4714-18	915206-SB-10(4-6)
D4714-19	915206-SB-10(6-8)
D4714-20	915206-SB-09(0-2)
D4714-21	915206-SB-09(2-4)

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : Mildred V Reyes

Mildred V. Reyes, QA/QC Supervisor
2012.11.21 14:35:15 -05'00'

Date: 11/21/2012

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-09(4-6)	D4715-01		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-09(6-8)	D4715-02		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-08(0-2)	D4715-03		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-08(2-4)	D4715-04	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB-08(4-6)	D4715-05		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-08(6-8)	D4715-06		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-18(0-2)	D4715-07	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB-18(2-4)	D4715-10		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-18(8-10)	D4715-11		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-18(10-12)	D4715-12		8270D			6010B, 7471A	Chemtech -SOP
915206-DUPLICATE04	D4715-13	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SB-12A(0-2)	D4715-14	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-DUPLICATE02A	D4715-17	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP
915206-SD-03	D4715-18	8260C	8270D		8081B, 8082A	6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-11(0-2)	D4759-01		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-11(2-4)	D4759-02		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-11(4-6)	D4759-03	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-DUPLICATE05	D4759-06	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(6-8)	D4759-07	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(8-10)	D4759-08	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(10-12)	D4759-09	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(12-14)	D4759-10	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(14-16)	D4759-11	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SB-11(16-18)	D4759-12	8260C	8270D		8081B, 8082A	6010B, 7471A	Chemtech -SOP, 9012B
915206-SW-04	D4759-13	8260C, 8260-Low	8270D		8081B, 8082A	6010B, 7471A, 7470A	Chemtech -SOP, 9012B
915206-SW-03	D4759-14	8260C, 8260-Low	8270D		8081B, 8082A	6010B, 7471A, 7470A	Chemtech -SOP, 9012B
915206-SW-DUPLICATE	D4759-15	8260C, 8260-Low	8270D		8081B, 8082A	6010B, 7471A, 7470A	Chemtech -SOP, 9012B

CHEMTECH

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-MW-03A	D4968-01	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-04	D4968-02	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-06	D4968-03	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-07	D4968-04	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
TRIPBLANK	D4968-07	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-RB1	D4968-08	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-04	D4968-09	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-06	D4968-10	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-02A	D4968-11	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-05	D4968-12	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-08	D4968-13	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-DUPLICATE	D4968-14	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-RB2	D4968-15	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
TRIPBLANK	D4968-16	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D
915206-MW-08	D4968-17	8260-Low	8270D		8081B, 8082A	6010B, 7470A, SM2340C	300, 300.0, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D

Data Validation Services

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February 16, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Samples
HamptonClarke-Veritech SDG Nos. AC69070 and AC69114

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by HamptonClarke-Veritech, that pertain to soil samples collected between 10/29/12 and 11/06/12 at the Former Lackawanna Incinerator site. Four samples and three field duplicates were processed for TCL volatiles, TCL semivolatiles, TCL Pesticides, TCL PCBs, TAL metals, and total cyanide. One additional sample was processed for soil TCL semivolatiles, TCL Pesticides, TCL PCBs, TAL metals, and total cyanide. Eighteen other samples were processed for TCL semivolatiles and TAL metals. Field, trip, and matrix spikes were also processedThe analytical methodologies are those of the USEPA SW846 6000/7000/8000/9000.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Preparation/Method/Trip Blanks
* Laboratory Control Samples (LCSs)
* Instrumental Tunes
* Calibration Standards

* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c).

In summary, most sample results are usable either as reported, or with minor qualification or edit to non-detection, thus meeting completeness requirements. The following exception is that the 1,4-dioxane results are not usable in the samples due to poor response inherent with the methodology.

Additionally, the following observations are made:

- many of the metals results are qualified as estimated due to an apparent non-homogeneous matrix. Accuracy and precision data for the other analytes are generally good.
- "chlordane" was reported, rather than target analytes a-chlordane and g-chlordane
- Some of the Tentatively Identified Compounds are overly characterized, and should have been reported as unknowns

The laboratory reported sample weights of only one significant figure ("i.e. 0.5 g" or "30 g") for all fraction preparations. Weighing to only one significant figure reduces the accuracy of the final reported values, which are subsequently reported as too many significant figures (sometimes as many as three). The actual weights should be recorded and used in the sample calculations. No qualification is made, but this should be considered during the evaluation of the results by the end-users of the data.

Copies of the laboratory sample identification summaries (Forms S-1) and the laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Data Package Deliverables

No resubmissions were requested of the laboratory. All required raw data were provided in the data packages. Omissions on summary Form entries are noted in the following sections.

Chain-of-Custody/Sample Receipt

The collection dates of the field duplicates reported in SDG 2110701 were not entered onto the custody, but were provided after laboratory receipt.

Blind Field Duplicates

Blind field duplicate evaluations were performed on MW-06(0-2), MW-07(2-4), and MW-08 (0-2). The total cyanide field duplicate of MW-06(0-2) shows grossly different results from the parent sample (150 mg/kg in the parent and 8.5 mg/kg in the field duplicate). The parent sample value

matches that of the matrix spikes of the sample very well; those three analyses were processed at twenty-five fold dilution, and the field duplicate was noted as being processed undiluted. The response at the instrument level of the field duplicate matches that of the parent and spikes; that field duplicate may have been processed at dilution but not noted as such. The results for total cyanide in that parent sample and its duplicate have been qualified as estimated in value.

Other correlations meet validation guidelines, with the following exceptions, results of which have been qualified as estimated in value in the indicated parent samples and their respective duplicates:

- 2-butanone (>±CRDL), calcium (78%RPD), and lead (80%RPD) in MW-06(0-2)
- bis(2-ethylhexyl)phthalate (>±CRDL), total cyanide (62%RPD), antimony (>±CRDL), barium (102%RPD), cadmium (>±CRDL), magnesium (62%RPD), silver (>±CRDL), and lead (52%RPD) in MW-07(2-4)
- bis(2-ethylhexyl)phthalate (>±CRDL), chrysene (>±CRDL), antimony (>±CRDL), and copper (142%RPD) in MW-08(0-2)

Volatile Analyses by EPA 8260C

MW-07(2-4) exhibits low responses of internal standards on repeated analysis. The results for the analytes that are quantitatively associated with internal standard fluorobenzene (response of 48%, below the 50% required limit) have been qualified as estimated in that sample. The initial analysis is used.

Matrix spikes of MW-08(0-2) of the sixteen analytes that underwent the evaluation show acceptable accuracy and precision. Those for MW-06(0-2) also show recoveries and duplicate correlations that are within validation guidelines, with the exception of the recovery for 1,2,3-trichlorobenzene (38% and 32%); the result for that compound in the parent sample has been qualified as estimated in value, with a probable low bias.

The matrix spikes of MW-07(2-4) show an elevated duplicate correlation for chlorobenzene (68%RPD), and outlying duplicate correlations and one low recovery each for 1,2-dichlorobenzene and 1,4-dichorobenzene (recoveries of 45% and 26%; duplicate correlations of 61%RPD and 93%RPD, respectively). Low biases are expected.

It is noted that although all target analytes were spiked into the matrix spikes and LCSs, the laboratory evaluated only sixteen of them. Additionally, the laboratory acceptance ranges (of 50% to 130%; except 20% to 130% for vinyl chloride) are more generous than those required of the analytical protocol (which are to have been determined by the laboratory historical data, and 70% to 130% in the interim).

Laboratory Control Samples (LCSs) show recoveries that are within the laboratory acceptance ranges. Surrogate recoveries are within required ranges. Instrument tunes meet protocol requirements. Blanks show no contamination affecting sample reported results.

All of the results for 1,4-dioxane are rejected due to very poor instrument response that is typical of that analyte.

The other calibration standards show acceptable responses, with the exception of those for the following, results for which are qualified as estimated in the indicated samples:

- trichlorofluoromethane, 2-hexanone, 1,4-dichlorobenzene (29%D to 39%D) in MW-07(2-4)
- 2-hexanone, bromoform, and 1,1,2,2-tetrachloroethane (23%D to 27%D) in MW-08(0-2), MW-DUPLICATE 02, and MW-DUPLICATE 03
- cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,2-dibromo-3-chloropropane (23% to 29%) in MW-02A(2-3)
- 2-hexanone, trans-1,3-dichloropropene, and 1,1,2,2-tetrachloroethane (23% to 25%) in MW-6(0-2) and MW-DUPLICATE 01
- 2-butanone, 2-hexanone, 4-methyl-2-pentanone, and 1,2,3-trichorobenzene (23% to 34%) in the field and trip blanks reported in SDG AC69114
- 2-hexanone, 4-methyl-2-pentanone, and 1,1,2,2-tetrachloroethane (22% to 38%) in the field and trip blanks of 10/29/12
- methyl acetate, 2-butanone, 2-hexanone, 4-methyl-2-pentanone, trans-1,3-dichloropropene, 1,2-dibromo-3-chloropropane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, and 1,1,2,2-tetrachloroethane (24% to 40%) in the field and trip blanks of 11/01/12

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag.

TCL Semivolatiles by EPA 8270D

The result for dibenzofuran in MW-04(0-2) qualified as tentative in identification and estimated in value due to poor mass spectral quality.

Surrogate and internal standard recoveries are within required ranges. Blanks show no contamination, and instrument tunes meet protocol requirements.

Matrix spikes of MW-07(2-4) and MW-08(0-2) show acceptable recoveries and correlations. The matrix spikes of MW-06(0-2) show outlying recoveries for pentachlorophenol (41% and 0%), and results for that compound in the parent sample is therefore as estimated, with a probable low bias.

It is noted that although all target analytes were spiked into the matrix spikes and LCSs, the laboratory evaluated only sixteen of them. Additionally, the laboratory acceptance ranges (of 50% to 130% for fourteen of the analyes, and 40% to 130% for two of them) are more generous than those required of the analytical protocol (which are to have been determined by the laboratory historical data, and 70% to 130% in the interim).

The calibration standards show acceptable responses, with the exception of those for hexachloro-cyclopentadiene (24%D to 44%D) in those associated with MW-05(2-3), MW-04(0-2), MW-07(0-2), and the field blank reported in SDG AC69070. The results for that compound in those samples are qualified as estimated, with a probable low bias.

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag. TICs reported with the laboratory "A" and/or "B" flags are processing artifacts, and are disregarded and removed as sample components.

The TIC identifications were made and assigned by the software (using a quality of fit limit), apparently without the analyst interpretation. Therefore, some of the TICs are over-characterized; the sample component spectra do not match those of the standard very well, and should be edited to "unknown". Full validation would require review and re-reporting of those identifications by the laboratory.

TCL Pesticide and TCL PCB Analyses by EPA 8081A and EPA 8082

The laboratory reported chlordane (based on multiple responses), rather than the TCL analytes a-chlordane and g-chlordane.

Due to poor dual column quantitative correlations, and subsequent potential for matrix interference contribution or false positives, the results for the following detections are qualified as indicated:

- 4,4'-DDT in MW08(0-2) and MW-DUPLICATE 03 as tentative in identification and estimated in value
- the detection of 4,4'-DDD in MW-02(2-3) edited to non-detection
- chlordane in MW-02(2-3) as estimated in value

The matrix spikes of pesticides in MW-07(2-4), MW-06(0-2), and MW-08(0-2) show recoveries and correlations that are within the laboratory acceptance ranges, with the exception of those for 4,4'-DDT in MW-08(0-2), which showed recoveries of 132% and 463%; 105%RPD. The analyte detection of this compound in that parent sample is already qualified as tentative in identification and estimated in value, suspect as an interferent.

Matrix spikes of Aroclors 1016 and 1260 in MW-07(2-4), MW-06(0-2), and MW-08(0-2) show recoveries and correlations that are within the laboratory acceptance ranges.

The laboratory acceptance ranges for about half of the analytes (of 60% to 130% and 10% to 130% for endrin aldehyde) are more generous than those required of the analytical protocol (which are to have been determined by the laboratory historical data, and 70% to 130% in the interim).

The laboratory should have processed continuing calibration verification standards for all Aroclor mixtures that were detected in the samples. Because they did not, detected results for Aroclors 1248 and 1254 in the samples have been qualified as estimated in value.

TAL Metals and Total Cyanide Analyses by EPA 6010B, 7470/7471, and 9012

Total cyanide matrix spike recovery evaluations on MW-06(0-2), MW-07(2-4), and MW-08(0-2) are not applicable due to the high concentration in the samples relative to the spike amount added. The duplicate correlation of those spikes on MW-08(0-2) was elevated (55%RPD), and the result for cyanide in that parent sample is therefore qualified as estimate in value.

Matrix spikes of the following samples show recoveries and duplicate correlations that are outside validation guidelines. Results for those elements in the associated samples (those in the same SDGs) are qualified as estimated in value:

SDG No.	Parent Sample	Element	%Recoveries	%RPD
AC69070	MW-06(0-2)	antimony	47 and 46	
		calcium	453 and 396	
		lead	-110 and -120	
		magnesium	129 and 127	
		manganese	661 and 783	63
		zinc	-88 and -44	71
AC69114	MW-07(2-4)	antimony	48 and 59	
		calcium	342 and 81	68
		chromium	210 and 98	51
		copper	649 and 75	91
		nickel	353 and 95	95
		iron		127
		lead		183
		manganese		111
AC69114	MW-08(0-2)	antimony	3 and 13	
		copper	331 and 424	
		magnesium	50 and 54	
		silver	57 and 51	
		copper		53
		lead		59; 88

The following serial dilution correlations were elevated, and detected results for those elements have been qualified estimated in the samples reported in the same SDGs as the parent samples:

- calcium, cobalt, and manganese (12%D to 20%D) in MW-06(0-2) –SDG AC69070
- potassium (12%D) in MW-07(2-4) –SDG AC69114
- manganese (17%D) in MW-08(0-2) –SDG AC69114

Calibration standard responses associated with the sample analyses are compliant.

The laboratory did not process low level standards. Therefore, accuracy of the instrumentation at concentrations near the reporting limits has not beenascertained.

The laboratory does not properly flag report Forms 1 to reflect the elements with associated outlying matrix spike, duplicate, or ICP serial dilution evaluations.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs
and
LABORATORY CASE NARRATIVES

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	Analytical Requirements					
		VOA GC/MS (Method #)	BNA GC/MS (Method #)	PCB GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-MW-02A (0-1)	AC69070-001	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-02A (2-3)	AC69070-002	8260B	8270C	8082	8081A	6010B/7471A	9012B
915206-MW-02A (6-7)	AC69070-003	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-02A (8-10)	AC69070-004	NA	8270C	NA	NA	6010B/7471A	NA
915206-FIELD BLANK 10/29/12	AC69070-005	8260B	8270C	8082	8081A	6010B/7470A	9012B
915206-TRIP BLANK 10/29/12	AC69070-006	8260B	NA	NA	NA	NA	NA
915206-MW-03A (0-2)	AC69070-007	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-03A (4-6)	AC69070-008	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-06 (0-2)	AC69070-009	8260B	8270C	8082	8081A	6010B/7471A	9012B
915206-MW-06 (0-2) MS	AC69070-010	8260B	8270C	8082	8081A	6010B/7471A	9012B
915206-MW-06 (0-2) MSD	AC69070-011	8260B	8270C	8082	8081A	6010B/7471A	9012B
915206-MW-DUPLICATE 01	AC69070-012	8260B	8270C	8082	8081A	6010B/7471A	9012B
915206-MW-06 (2-4)	AC69070-013	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-06 (4-6)	AC69070-014	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-05 (0-2)	AC69070-015	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-05 (2-3)	AC69070-016	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-05 (3-4)	AC69070-017	NA	8270C	NA	NA	6010B/7471A	NA
915206-MW-05 (4-6)	AC69070-018	NA	8270C	NA	NA	6010B/7471A	NA
915206-FIELD BLANK 11/1/12	AC69070-019	8260B	8270C	8082	8081A	6010B/7470A	9012B
915206-TRIP BLANK 11/1/12	AC69070-020	8260B	NA	NA	NA	NA	NA

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	Analytical Requirements					
		VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-MW-04(0-2)	AC69114-001	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-04(2-4)	AC69114-002	NA	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-04(4-6)	AC69114-003	NA	8270B	NA	NA	6010B/7471A	NA
915206-FIELD BLANK	AC69114-004	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-TRIP BLANK	AC69114-005	8260B	NA	NA	NA	NA	NA
915206-MW-07(0-2)	AC69114-006	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-07(2-4)	AC69114-007	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-07(2-4)MS	AC69114-008	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-07(4-6)	AC69114-009	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-07(6-8)	AC69114-010	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-08(0-2)	AC69114-011	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-08(0-2)MS	AC69114-012	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-DUPLICAE 03	AC69114-013	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-08(2-4)	AC69114-014	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-08(6-8)	AC69114-015	NA	8270B	NA	NA	6010B/7471A	NA
915206-MW-DUPLICATE 02	AC69114-016	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-07(2-4)MSD	AC69114-017	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B
915206-MW-08(0-2)MSD	AC69114-018	8260B	8270B	NA	8082/8081A	6010B/7471A	9012B

HCV Case Narrative

Client: EA Engineering, Science & Technology **HCV Project:** 2110206
Project: Lackawanna Incinerator

Hampton-Clarke/Veritech (HC·V) received the following samples on November 02, 2012:

Client ID	HCV Sample ID	Matrix	Analysis
915206-MW-02A (0-1)	AC69070-001	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-02A (2-3)	AC69070-002	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-02A (6-7)	AC69070-003	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-02A (8-10)	AC69070-004	Soil	BNA (8270C), Metals (6010B/7471A)
915206-FIELD BLANK 10/29/12	AC69070-005	Aqueous	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7470A), Cyanide (9012B)
915206-TRIP BLANK 10/29/12	AC69070-006	Aqueous	VO (8260B)
915206-MW-03A (0-2)	AC69070-007	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-03A (4-6)	AC69070-008	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-06 (0-2)	AC69070-009	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-06 (0-2) MS	AC69070-010	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-06 (0-2) MSD	AC69070-011	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-DUPLICATE 01	AC69070-012	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-06 (2-4)	AC69070-013	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-06 (4-6)	AC69070-014	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-05 (0-2)	AC69070-015	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-05 (2-3)	AC69070-016	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-05 (3-4)	AC69070-017	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-05 (4-6)	AC69070-018	Soil	BNA (8270C), Metals (6010B/7471A)
915206-FIELD BLANK 11/1/12	AC69070-019	Aqueous	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7470A), Cyanide (9012B)
915206-TRIP BLANK 11/1/12	AC69070-020	Aqueous	VO (8260B)

This case narrative is in the form of an exception report. Method specific and/or QA/QC anomalies related to this report only are detailed below.

Volatile Organic Analysis:

Methylene chloride was recovered in samples AC69070-002, 009, and 012 suggesting laboratory contamination.

The Matrix Spike Duplicate for batch 22646 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

Base Neutral/Acid Extractable Analysis:

Samples AC69070-002, 007, 009, 012, and 014 were analyzed at a dilution due to the nature of samples.

The Matrix Spike Duplicate and MS/MSD RPD for batch 20064 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

Samples AC69070-005, 019, WMB20060, and WMB30060 MS have a surrogate recovery outside QC limits, but the recovery is greater than 10%, therefore, no corrective action was necessary.

PCB Analysis:

Data conforms to method requirements.

Pesticide Analysis:

Sample AC69070-012 was analyzed at a 2X dilution due to high concentration of non-target analytes.

The Matrix Spike Duplicate for batch 20061 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

Sample AC69070-011 has a surrogate recovery outside QC limits.

The result reported for Chlordane in the sample AC69070-002 was calculated from the primary column due to the interference in the secondary column .

Metals Analysis:

The Matrix Spike, Matrix Spike Duplicate, and Post Spike for batch 18454 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary. Also, the RPDs between the QC sample and the Method Replicate and between the Matrix Spike and the Matrix Spike Duplicate had recoveries outside QC limits. The RPD criteria were met between the LCS/LCS Method Replicate. In addition, the serial dilution is outside QC limits for one or more analytes, suggesting matrix interference.

Wet Chemistry Analysis:

The Matrix Spike and Matrix Spike Duplicate for Cyanide for batch 1017 recovered outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Robin Cousineau
Quality Assurance Director

Or

Stanley Gilewicz
Laboratory Director

11/26/2012
Date

HCV Case Narrative

Client: EA Engineering, Science & Technology **HCV Project:** 2110701
Project: Lackawanna Incinerator

Hampton-Clarke/Veritech (HC·V) received the following samples on November 07, 2012:

Client ID	HCV Sample ID	Matrix	Analysis
915206-MW-04(0-2)	AC69114-001	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-04(2-4)	AC69114-002	Soil	BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-04(4-6)	AC69114-003	Soil	BNA (8270C), Metals (6010B/7471A)
915206-Field BLANK	AC69114-004	Aqueous	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-TRIP BLANK	AC69114-005	Aqueous	VO (8260B)
915206-MW-07(0-2)	AC69114-006	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-07(2-4)	AC69114-007	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-07(2-4)MS	AC69114-008	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-07(4-6)	AC69114-009	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-07(6-8)	AC69114-010	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-08(0-2)	AC69114-011	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-08(0-2)MS	AC69114-012	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-DUPLICAE 03	AC69114-013	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-08(2-4)	AC69114-014	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-08(6-8)	AC69114-015	Soil	BNA (8270C), Metals (6010B/7471A)
915206-MW-DUPLICATE 02	AC69114-016	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-07(2-4)MSD	AC69114-017	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)
915206-MW-08(0-2)MSD	AC69114-018	Soil	VO (8260B), BNA (8270C), PCB (8082), Pesticides (8081A), Metals (6010B/7471A), Cyanide (9012B)

This case narrative is in the form of an exception report. Method specific and/or QA/QC anomalies related to this report only are detailed below.

Volatile Organic Analysis:

Methylene chloride was recovered in sample AC69114-014 suggesting laboratory contamination.

The Matrix Spike and/or Matrix Spike Duplicate for batches 22651 and 22652 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary. The MS/MSD RPD had recoveries outside QC limits for batch 22651.

Sample AC69114-007 had one or more internal standard areas outside +100% / -50% window from most recent calibration verification standard. The sample was reanalyzed confirming internal standard area counts out due to matrix interference. The re-analysis is reported.

Base Neutral/Acid Extractable Analysis:

Data conforms to method requirements.

PCB Analysis:

Data conforms to method requirements.

Pesticide Analysis:

The Matrix Spike and/or Matrix Spike Duplicate for batches 20106 and 19966 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary. The MS/MSD RPD had recoveries outside QC limits for batch 20106.

Metals Analysis:

The Matrix Spike and/or Matrix Spike Duplicate in batches 18464 and 18465 had recoveries outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary. Also, the MS/MSD RPD and RPD between the QC sample and the Method Replicate had recoveries outside QC limits. The RPD criteria were met between the LCS/LCS Method Replicate. In addition, the serial dilution is outside QC limits for one or more analytes, suggesting matrix interference.

Wet Chemistry Analysis:

The Matrix Spike and Matrix Spike Duplicate for Cyanide in batch 1024 recovered outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

The Matrix Spike, Matrix Spike Duplicate, MS/MSD RPD and sample/sample DUP RPD for Cyanide in batch 1025 recovered outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

The Matrix Spike, Matrix Spike Duplicate and MS/MSD RPD for Cyanide in batch 1031 recovered outside QC limits. However, since the associated Method Blank and Laboratory Control Sample were within control, no corrective action was necessary.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Robin Cousineau
Quality Assurance Director

Or

Stanley Gilewicz
Laboratory Director

12/11/2012
Date

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

May 4, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Air Samples
Spectrum Mitkem SDG No. M330

Dear Ms. Mokrey:

Review has been completed for the data package generated by Spectrum Analytical Mitkem Laboratory that pertains to analysis of air samples collected 05/06/13 at the Former Lackawanna Incinerator site. Five 6- L summa canister air samples and two blind field duplicates were analyzed for volatile analytes by USEPA GC/MS method TO-15.

The data packages submitted by the laboratory contain full deliverables for validation, but this usability report is generated from review of the QC summary form information, with full review of sample raw data and limited review of associated QC raw data. Full validation has not been performed. However, the reported QC summary forms and sample raw data have been reviewed for application of validation qualifiers, with guidance from the 2006 USEPA Region II validation SOP HW-31, and in consideration of the specific requirements of the analytical methodology. The following items were reviewed:

* Data Completeness
* Case Narrative
* Custody Documentation
* Holding Times
* Surrogate Recoveries
* Internal Standard Recoveries
* Method Blanks
* Laboratory Duplicate Correlations
* Field Duplicate Correlations
* Laboratory Control Samples (LCSs)
* Instrumental Tunes
* Initial and Continuing Calibration Standards
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c).

In summary, sample processing was conducted in compliance with the analysis protocol. All sample reported results are usable, but reporting limits are to be edited upward to the Reporting Detection Limit (RDL), and some results are qualified as estimated in value or edited to non-detection. There is evidence of non-homogeneity in a sub-slab sample. No data are rejected.

Copies of the laboratory sample identification summary and case narrative are attached to this text. Also attached are sample report forms, with the recommended qualifiers and edits applied in red ink.

Sample Receipt

Sample 915206-OA-01 shows excessive residual vacuum (-18"Hg) and laboratory receipt. Therefore, results for that sample are qualified as estimated in value, with a possible low bias.

There are not final receipt entries on the subcontracted custody form.

Volatile Analyses by EPA TO-15

The laboratory report forms show incorrect reporting limits in the "Results" column. They should be RDL values, not MDL values. MDLs cannot be used for reporting limits, as they do not imply the ability to detect responses at those concentrations.

The following results are qualified as tentative in identification and estimated in value due to poor mass spectral quality:

- 2-butanone in 915206-SS-01
- 2-butanone, chloromethane, and n-butylbenzene in 915206-SS-02
- heptane in 915206-IA-01
- n-butylbenzene in 915206-SSDUP

The results for heptane in 915206-SS-01 and 915206-SSDUP are edited to non-detection due to very poor mass spectral quality.

Responses for ethanol in 915206-SS-01 and for methylene chloride in 915206-OA-01 exceed the instrument calibration ranges, and are therefore not accurate. The samples were reanalyzed at dilution, with subsequent in-range responses, but those data were not backed up in the data package. The initial analysis results are used, and qualified as estimated.

The analytical method and the validation guidelines utilize mean relative response factors (RRFs) and relative standard deviations (%RSD) in the initial calibration standard evaluations. The laboratory uses an alternate way of determining linearity (linear regression), such as the option available in the SW-846 methodologies. Based on the method and validation SOP, results for the following analytes, those with responses that exceed 30%RSD, have been qualified as estimated in value: all results for chloromethane, chloroethane, bromomethane, methylene chloride, and tetrahydrofuran (33%RSD to 55%RSD), and detected results for benzene (32%RSD).

The laboratory duplicate evaluations of 915206-SS-01 show good correlations.

The blind field duplicate evaluation of 915206-IA-01 shows acceptable correlations, with the exception of those for the following analytes, which all show correlations >±CRDL: 2-butanone, hexane, isopropyl alcohol, tetrahydrofuran, and trichloroethene. Results for those analytes have been qualified as estimated in the parent sample and its field duplicate.

The blind field duplicate evaluation of 915206-SS-01 shows numerous outlying correlations (above 50%RPD for concentrations above 5 X CRDL, and >±CRDL for those otherwise), some with variances exceeding an order of magnitude. Results for the following affected analytes have been qualified as estimated in the parent sample and its field duplicate: acetone, ethanol, methylene chloride, carbon disulfide, 1,1-dichloroethane, isopropyl alcohol, hexane, ethyl acetate, chloroform, benzene, trichloroethene, toluene, ethylbenzene, m,p-xylene, o-xylene, 1,3,5-trimethylbenzene, 4-ethyltoluene, and 1,2,4-trimethylbenzene. The field duplicate concentrations are higher than those of the parent sample, and this should be considered by the end-user of the data. It is noted that the laboratory duplicate evaluation of the parent sample, taken from the same canister, shows very good correlations.

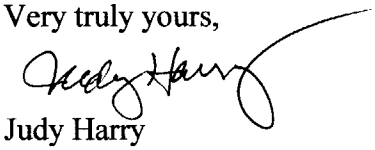
Continuing calibration verification responses are within validation guidelines.

Holding times were met, surrogate and internal standard recoveries are acceptable, and instrument tunes meet fragmentation requirements. Method blanks show no contamination.

Clean canister certification summaries were provided, and show no contamination.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,



Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs
and
LABORATORY CASE NARRATIVE

Report Date:
25-Mar-13 15:05

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
646 Camp Ave.
North Kingstown, RI 02852
Attn: Veronica Brizard

Project: Lackawanna
Project #: M0330

Laboratory ID	Client Sample ID	Container	Matrix	Date Sampled	Date Received
SB65906-01	915206-SS-01	Summa canister 6 liter	Air	12-Mar-13 08:15	12-Mar-13 21:00
SB65906-02	915206-SS-02	Summa canister 6 liter	Air	12-Mar-13 11:45	12-Mar-13 21:00
SB65906-03	915206-1A-01	Summa canister 6 liter	Air	12-Mar-13 08:06	12-Mar-13 21:00
SB65906-04	915206-1A-02	Summa canister 6 liter	Air	12-Mar-13 10:48	12-Mar-13 21:00
SB65906-05	915206-0A-01	Summa canister 6 liter	Air	12-Mar-13 12:07	12-Mar-13 21:00
SB65906-06	915206-SSDUP	Summa canister 6 liter	Air	12-Mar-13 00:00	12-Mar-13 21:00
SB65906-07	915206-1ADUP	Summa canister 6 liter	Air	12-Mar-13 00:00	12-Mar-13 21:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 32 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Samples are received and the pressure is recorded from the gauge on the canister. If a canister does not have a gauge, a vacuum gauge is attached to the valve and pressure is recorded. If the canister is below -10 psig, the can must be pressurized to 0 psig. Tedlar bags do not have the pressure recorded. The can pressure can be located within this report in the sample header information.

If a Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

EPA TO-15

Calibration:

1303044

Analyte quantified by quadratic equation type calibration.

Chloromethane
Propene

This affected the following samples:

1306450-BLK1
1306450-BS1
915206-0A-01
915206-1A-01
915206-1A-02
915206-1ADUP
915206-SS-01
915206-SS-02
915206-SSDUP
S303058-ICV1
S303063-CCV1

S302182-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

1,2,4-Trichlorobenzene (134%)
Benzyl chloride (133%)
Naphthalene (129%)

This affected the following samples:

1306443-BLK1
1306443-BS1
1306443-DUP1
S303130-CCV1

S303058-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

1,1,2-Trichloroethane (78%)
1,1,2-Trichlorotrifluoroethane (Freon 113) (78%)
1,1-Dichloroethane (76%)
1,2-Dibromoethane (EDB) (78%)
1,2-Dichloroethane (77%)
1,2-Dichloropropane (74%)
1,2-Dichlorotetrafluoroethane (Freon 114) (72%)
Carbon tetrachloride (77%)
Dibromochloromethane (79%)
Dichlorodifluoromethane (Freon12) (72%)

EPA TO-15

Calibration:

S303058-ICV1

This affected the following samples:

1306450-BLK1
1306450-BS1
915206-0A-01
915206-1A-01
915206-1A-02
915206-1ADUP
915206-SS-01
915206-SS-02
915206-SSDUP
S303063-CCV1

Samples:

S303130-CCV1

Analyte percent difference is outside individual acceptance criteria (30), but within overall method allowances.

Acrylonitrile (33.7%)
Chloroethane (32.2%)
Ethanol (31.7%)

This affected the following samples:

1306443-BLK1
1306443-BS1
1306443-DUP1
915206-SS-01

SB65906-01 *915206-SS-01*

This flag indicates the concentration for this analyte is an estimated value due to exceeding the calibration range or interferences resulting in a biased final concentration.

Ethanol

SB65906-05 *915206-0A-01*

Due to the low volume of sample collected it was necessary to pressurize the Summa can in laboratory prior to analysis which results in elevated reporting limits.

This flag indicates the concentration for this analyte is an estimated value due to exceeding the calibration range or interferences resulting in a biased final concentration.

Methylene chloride

SDG65906

SB65906 General Narrative

Spectrum Analytical, Inc. submits the enclosed data package for the site characterization of Lackawanna. Samples submitted for analysis by Spectrum Analytical, Inc.-- RI Division. Under this deliverable, analysis results are presented for seven Air samples submitted on March 12th, 2013.

The analyses were performed according to USEPA SW846 method analytical guidelines and other methods. In addition the analyses were performed according to criteria dictated by National Environmental Laboratory Accreditation Conference (NELAC) and in accordance with project contract requirements and chain of custody forms.

Observations and/or deviations observed for specific analyses can be found in the analysis narrative:

1. Overall Observations:

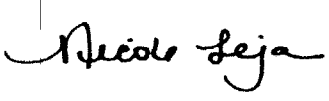
Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual Integrations are coded to provide the data reviewer justification for such action. The codes are labeled on corresponding raw data for GC/MS and GC analysis as follows:

- M1 peak tailing or fronting
- M2 peak co-elution
- M3 rising or failing baseline
- M4 retention time shift
- M5 miscellaneous - under this category, the justification is explained
- M6 software did not integrate peak
- M7 partial peak integration

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Scanned copies of logbook pages are included, with the originals are archived within the laboratory.

The pages in this report have been numbered consecutively, starting with the general narrative and ending with the page labeled as "Last Page of data Report".

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this electronic data package, has been authorized by the laboratory director as verified by the following signature.



Nicole Leja

Laboratory Director

Date: 03/27/2013

Judy Harry

From: Williams, Hilary [hwilliams@eaest.com]
Sent: Thursday, March 28, 2013 2:05 PM
To: Judy Harry (harry@frontiernet.net)
Cc: Mokry, Lynette
Subject: Lackawanna Incinerator Air Sampling EDD

Hi Judy,

We have received results from the air sampling event conducted at the Lackawanna site on March 11-12, 2013. I have put the electronic files on a CD that will be shipped out to you either today or tomorrow morning. For your reference, the duplicates are associated as follows:

- 915206-IA-DUP = 915206-IA-01
- 915206-SS-DUP = 915206-SS-01

Please let me know if you have any questions, or if you don't receive the CD.

Thank you!
Hilary

Hilary Williams
Scientist II
EA Science & Technology
6712 Brooklawn Pky, Suite 104
Syracuse, NY 13211
hwilliams@eaest.com
(315) 431-4610 x 134

QUALIFIED SAMPLE RESULTS FORMS

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SS-01	M0330	Air	12-Mar-13 08:15	12-Mar-13
SB65906-01				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag		Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses												
Volatile Organics in Air		ppbv	Prepared 22-Mar-13 Dilution: 1					Can pressure: -1 Can ID: 5571				
64-17-5	~~Ethanol~~	~~6.33~~	~~0.500~~	~~11.94~~	~~0.94~~			~~EPA TO-15~~	~~22-Mar-13~~	~~KRL~~	~~1306443~~	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*110*		*70-130 %*				"	"	"	"	
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1					Can pressure: -1 Can ID: 5571				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U		"	21-Mar-13	"	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.38000**	0.10000	**1.88**	0.49			"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U	UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U		"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U		"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U		"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U	UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U	UJ	"	"	"	"	X
67-64-1	Acetone	**5.9900**	0.50000	**14.23**	1.19			"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.19000**	0.10000	**1.07**	0.56			"	"	"	"	X
64-17-5	Ethanol	**15.860**	0.50000	**29.90**	0.94	E	J	"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U		"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U		"	"	"	"	X
75-09-2	Methylene chloride	**0.85000**	0.10000	**2.95**	0.35		J	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U		"	"	"	"	X
75-15-0	Carbon disulfide	**0.47000**	0.50000	**1.46**	1.56	J	J	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U		"	"	"	"	X
75-34-3	1,1-Dichloroethane	**0.16000**	0.10000	**0.65**	0.40		J	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U		"	"	"	"	X
67-63-0	Isopropyl alcohol	**8.3400**	0.50000	**20.47**	1.23		J	"	"	"	"	X
78-93-3	2-Butanone (MEK)	**1.0600**	0.10000	**3.13**	0.29		NJ	"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U		"	"	"	"	X
110-54-3	Hexane	**7.9200**	0.50000	**27.92**	1.76		J	"	"	"	"	X
141-78-6	Ethyl acetate	**1.3500**	0.10000	**4.86**	0.36		J	"	"	"	"	
67-66-3	Chloroform	**1.5300**	0.10000	**7.45**	0.49		J	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.053000	0.10000	< 0.16	0.29	U	UJ	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U		"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U		"	"	"	"	X
71-43-2	Benzene	**0.27000**	0.10000	**0.86**	0.32		J	"	"	"	"	X
56-23-5	Carbon tetrachloride	**0.060000**	0.10000	**0.38**	0.63	J		"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U		"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U		"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U		"	"	"	"	X
79-01-6	Trichloroethene	**0.060000**	0.10000	**0.32**	0.54	J	J	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U		"	"	"	"	X
142-82-5	n-Heptane	< **0.14000**	~~0.10000~~ 0.14	< **0.57**	~~0.41~~ 0.57		U	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U		"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U		"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U		"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SS-01	M0330	Air	12-Mar-13 08:15	12-Mar-13
SB65906-01				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -1 Can ID: 5571				
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	EPA TO-15	21-Mar-13	krl	1306450	X
108-88-3	Toluene	**1.5700**	0.10000	**5.91**	0.38		J "	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X
127-18-4	Tetrachloroethene	< 0.061000	0.10000	< 0.41	0.68	U	"	"	"	"	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.34000**	0.10000	**1.47**	0.43		J "	"	"	"	X
179601-23-1	m,p-Xylene	**1.7100**	0.20000	**7.41**	0.87		J "	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	**0.55000**	0.10000	**2.38**	0.43		J "	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.20000**	0.10000	**0.98**	0.49		J "	"	"	"	X
622-96-8	4-Ethyltoluene	**0.26000**	0.10000	**1.28**	0.49		J "	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**1.1400**	0.10000	**5.60**	0.49		J "	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.056000	0.10000	< 0.31	0.55	U	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*97*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SS-02	M0330	Air	12-Mar-13 11:45	12-Mar-13
SB65906-02				

Air Quality Analyses

Volatile Organics in Air Low Level — ppbv — Prepared 21-Mar-13 — Dilution: 1 — Can pressure: -4 — Can ID: 7633

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.37000**	0.10000	**1.83**	0.49		"	"	"	"	X
74-87-3	Chloromethane	**0.49000**	0.10000	**1.01**	0.21		NJ "	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	UJ "	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U	UJ "	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U	UJ "	"	"	"	X
67-64-1	Acetone	**8.8400**	0.50000	**21.01**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.16000**	0.10000	**0.90**	0.56		"	"	"	"	X
64-17-5	Ethanol	**5.9300**	0.50000	**11.18**	0.94		"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	**3.5600**	0.10000	**12.36**	0.35		J "	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U	"	"	"	"	X
75-15-0	Carbon disulfide	**5.2900**	0.50000	**16.46**	1.56		"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	**0.22000**	0.10000	**0.89**	0.40		"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**1.9800**	0.50000	**4.86**	1.23		"	"	"	"	X
78-93-3	2-Butanone (MEK)	**1.4500**	0.10000	**4.28**	0.29		NJ "	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**3.4500**	0.50000	**12.16**	1.76		"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U	"	"	"	"	
67-66-3	Chloroform	**1.1200**	0.10000	**5.45**	0.49		"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.053000	0.10000	< 0.16	0.29	U	UJ "	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U	"	"	"	"	X
71-43-2	Benzene	**0.40000**	0.10000	**1.28**	0.32		J "	"	"	"	X
56-23-5	Carbon tetrachloride	< 0.043000	0.10000	< 0.27	0.63	U	"	"	"	"	X
110-82-7	Cyclohexane	**0.63000**	0.10000	**2.17**	0.34		"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	< 0.052000	0.10000	< 0.28	0.54	U	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	< 0.061000	0.10000	< 0.25	0.41	U	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**3.0700**	0.10000	**11.55**	0.38		"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SS-02	M0330	Air	12-Mar-13 11:45	12-Mar-13
SB65906-02				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -4 Can ID: 7633				
127-18-4	Tetrachloroethene	**0.21000**	0.10000	**1.42**	0.68		EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.77000**	0.10000	**3.34**	0.43		"	"	"	"	X
179601-23-1	m,p-Xylene	**3.8900**	0.20000	**16.86**	0.87		"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	**0.10000**	0.10000	**0.43**	0.43		"	"	"	"	X
95-47-6	o-Xylene	**1.4300**	0.10000	**6.20**	0.43		"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.52000**	0.10000	**2.56**	0.49		"	"	"	"	X
622-96-8	4-Ethyltoluene	**0.57000**	0.10000	**2.80**	0.49		"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**2.7900**	0.10000	**13.72**	0.49		"	"	"	"	X
91-20-3	Naphthalene	**0.59000**	0.50000	**3.09**	2.62		"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	**0.21000**	0.10000	**1.15**	0.55	NJ	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*101*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-01	M0330	Air	12-Mar-13 08:06	12-Mar-13
SB65906-03				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0263				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.38000**	0.10000	**1.88**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U UJ	"	"	"	"	X
67-64-1	Acetone	**2.9000**	0.50000	**6.89**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.19000**	0.10000	**1.07**	0.56		"	"	"	"	X
64-17-5	Ethanol	**3.7900**	0.50000	**7.15**	0.94		"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	**0.090000**	0.10000	**0.31**	0.35	J J	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U	"	"	"	"	X
75-15-0	Carbon disulfide	**0.10000**	0.50000	**0.31**	1.56	J	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 0.049000	0.10000	< 0.20	0.40	U	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**1.0300**	0.50000	**2.53**	1.23	J	"	"	"	"	X
78-93-3	2-Butanone (MEK)	**0.55000**	0.10000	**1.62**	0.29	J	"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**0.26000**	0.50000	**0.92**	1.76	J J	"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U	"	"	"	"	
67-66-3	Chloroform	< 0.045000	0.10000	< 0.22	0.49	U	"	"	"	"	X
109-99-9	Tetrahydrofuran	**1.0200**	0.10000	**3.01**	0.29	J	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U	"	"	"	"	X
71-43-2	Benzene	**0.15000**	0.10000	**0.48**	0.32	J	"	"	"	"	X
56-23-5	Carbon tetrachloride	**0.070000**	0.10000	**0.44**	0.63	J	"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	< 0.052000	0.10000	< 0.28	0.54	U J	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	**0.12000**	0.10000	**0.49**	0.41		"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**0.90000**	0.10000	**3.39**	0.38		"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-01	M0330	Air	12-Mar-13 08:06	12-Mar-13
SB65906-03				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0263				
127-18-4	Tetrachloroethene	< 0.061000	0.10000	< 0.41	0.68	U	EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.12000**	0.10000	**0.52**	0.43		"	"	"	"	X
179601-23-1	m,p-Xylene	**0.43000**	0.20000	**1.86**	0.87		"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	< 0.061000	0.10000	< 0.26	0.43	U	"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.13000**	0.10000	**0.64**	0.49		"	"	"	"	X
622-96-8	4-Ethyltoluene	**0.080000**	0.10000	**0.39**	0.49	J	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**0.31000**	0.10000	**1.52**	0.49		"	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.056000	0.10000	< 0.31	0.55	U	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*101*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-01	M0330	Air	12-Mar-13 08:06	12-Mar-13
SB65906-03				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0263				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.38000**	0.10000	**1.88**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U UJ	"	"	"	"	X
67-64-1	Acetone	**2.9000**	0.50000	**6.89**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.19000**	0.10000	**1.07**	0.56		"	"	"	"	X
64-17-5	Ethanol	**3.7900**	0.50000	**7.15**	0.94		"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	**0.090000**	0.10000	**0.31**	0.35	J J	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U	"	"	"	"	X
75-15-0	Carbon disulfide	**0.10000**	0.50000	**0.31**	1.56	J	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 0.049000	0.10000	< 0.20	0.40	U	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**1.0300**	0.50000	**2.53**	1.23		"	"	"	"	X
78-93-3	2-Butanone (MEK)	**0.55000**	0.10000	**1.62**	0.29		"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**0.26000**	0.50000	**0.92**	1.76	J	"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U	"	"	"	"	
67-66-3	Chloroform	< 0.045000	0.10000	< 0.22	0.49	U	"	"	"	"	X
109-99-9	Tetrahydrofuran	**1.0200**	0.10000	**3.01**	0.29	J	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U	"	"	"	"	X
71-43-2	Benzene	**0.15000**	0.10000	**0.48**	0.32	J	"	"	"	"	X
56-23-5	Carbon tetrachloride	**0.070000**	0.10000	**0.44**	0.63	J	"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	< 0.052000	0.10000	< 0.28	0.54	U	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	**0.12000**	0.10000	**0.49**	0.41		"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**0.90000**	0.10000	**3.39**	0.38		"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-01	M0330	Air	12-Mar-13 08:06	12-Mar-13
SB65906-03				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0263				
127-18-4	Tetrachloroethene	< 0.061000	0.10000	< 0.41	0.68	U	EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.12000**	0.10000	**0.52**	0.43		"	"	"	"	X
179601-23-1	m,p-Xylene	**0.43000**	0.20000	**1.86**	0.87		"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	< 0.061000	0.10000	< 0.26	0.43	U	"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.13000**	0.10000	**0.64**	0.49		"	"	"	"	X
622-96-8	4-Ethyltoluene	**0.080000**	0.10000	**0.39**	0.49	J	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**0.31000**	0.10000	**1.52**	0.49		"	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.056000	0.10000	< 0.31	0.55	U	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*101*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-02	M0330	Air	12-Mar-13 10:48	12-Mar-13
SB65906-04				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -1 Can ID: 0675				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.40000**	0.10000	**1.98**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U UJ	"	"	"	"	X
67-64-1	Acetone	**3.6400**	0.50000	**8.65**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.19000**	0.10000	**1.07**	0.56		"	"	"	"	X
64-17-5	Ethanol	**4.8800**	0.50000	**9.20**	0.94		"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	**0.16000**	0.10000	**0.56**	0.35	J	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U	"	"	"	"	X
75-15-0	Carbon disulfide	< 0.057000	0.50000	< 0.18	1.56	U	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 0.049000	0.10000	< 0.20	0.40	U	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**0.75000**	0.50000	**1.84**	1.23		"	"	"	"	X
78-93-3	2-Butanone (MEK)	**0.67000**	0.10000	**1.98**	0.29		"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**0.50000**	0.50000	**1.76**	1.76		"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U	"	"	"	"	
67-66-3	Chloroform	< 0.045000	0.10000	< 0.22	0.49	U	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.053000	0.10000	< 0.16	0.29	U UJ	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U	"	"	"	"	X
71-43-2	Benzene	**0.16000**	0.10000	**0.51**	0.32	J	"	"	"	"	X
56-23-5	Carbon tetrachloride	**0.070000**	0.10000	**0.44**	0.63	J	"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	**0.060000**	0.10000	**0.32**	0.54	J	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	< **0.10000**	0.10000	< **0.41**	0.41	U	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**0.95000**	0.10000	**3.57**	0.38		"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1A-02	M0330	Air	12-Mar-13 10:48	12-Mar-13
SB65906-04				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -1 Can ID: 0675				
127-18-4	Tetrachloroethene	< 0.061000	0.10000	< 0.41	0.68	U	EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.13000**	0.10000	**0.56**	0.43		"	"	"	"	X
179601-23-1	m,p-Xylene	**0.65000**	0.20000	**2.82**	0.87		"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	**0.22000**	0.10000	**0.95**	0.43		"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.10000**	0.10000	**0.49**	0.49		"	"	"	"	X
622-96-8	4-Ethyltoluene	< 0.055000	0.10000	< 0.27	0.49	U	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**0.17000**	0.10000	**0.84**	0.49		"	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	**0.090000**	0.10000	**0.54**	0.60	J	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.056000	0.10000	< 0.31	0.55	U	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*104*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-0A-01	M0330	Air	12-Mar-13 12:07	12-Mar-13
SB65906-05				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air		ppbv	Prepared 22-Mar-13 Dilution: 2				Can pressure: -18 Can ID: 7644				
75-09-2	Methylene chloride	60.0	1.00	208.34	3.47	D	EPA TO-15	22-Mar-13	KRL	1306443	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*113*		*70-130 %*			"	"	"	"	
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1			AirP	Can pressure: -18 Can ID: 7644				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	"	21-Mar-13	"	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.18000**	0.10000	**0.89**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.18600	0.20000	< 0.38	0.41	U, D	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.11400	0.20000	< 0.80	1.40	U, D	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.12800	0.20000	< 0.33	0.51	U, D	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.11000	0.20000	< 0.24	0.44	U, D	"	"	"	"	X
74-83-9	Bromomethane	< 0.10400	0.20000	< 0.40	0.78	U, D	"	"	"	"	X
75-00-3	Chloroethane	< 0.15200	0.20000	< 0.40	0.53	U, D	"	"	"	"	X
67-64-1	Acetone	**4.0800**	1.0000	**9.70**	2.38	D	"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.16000**	0.20000	**0.90**	1.12	D, J	"	"	"	"	X
64-17-5	Ethanol	**12.680**	1.0000	**23.91**	1.89	D	"	"	"	"	
107-13-1	Acrylonitrile	< 0.12800	0.20000	< 0.28	0.43	U, D	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.14600	0.20000	< 0.58	0.79	U, D	"	"	"	"	X
75-09-2	Methylene chloride	**46.960**	0.20000	**163.06**	0.69	D, E	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.14000	0.20000	< 1.07	1.53	U, D	"	"	"	"	X
75-15-0	Carbon disulfide	< 0.11400	1.0000	< 0.35	3.11	U, D	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.084000	0.20000	< 0.33	0.79	U, D	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 0.098000	0.20000	< 0.40	0.81	U, D	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.098000	0.20000	< 0.35	0.72	U, D	"	"	"	"	X
67-63-0	Isopropyl alcohol	**1.9000**	1.0000	**4.66**	2.45	D	"	"	"	"	X
78-93-3	2-Butanone (MEK)	< 0.19000	0.20000	< 0.56	0.59	U, D	"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.098000	0.20000	< 0.39	0.79	U, D	"	"	"	"	X
110-54-3	Hexane	**4.5000**	1.0000	**15.87**	3.53	D	"	"	"	"	X
141-78-6	Ethyl acetate	< 0.16400	0.20000	< 0.59	0.72	U, D	"	"	"	"	
67-66-3	Chloroform	< 0.090000	0.20000	< 0.44	0.97	U, D	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.10600	0.20000	< 0.31	0.59	U, D	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.092000	0.20000	< 0.37	0.81	U, D	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.10400	0.20000	< 0.57	1.09	U, D	"	"	"	"	X
71-43-2	Benzene	< 0.10600	0.20000	< 0.34	0.64	U, D	"	"	"	"	X
56-23-5	Carbon tetrachloride	< 0.086000	0.20000	< 0.54	1.26	U, D	"	"	"	"	X
110-82-7	Cyclohexane	< 0.16200	0.20000	< 0.56	0.69	U, D	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.098000	0.20000	< 0.45	0.92	U, D	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.10600	0.20000	< 0.71	1.34	U, D	"	"	"	"	X
79-01-6	Trichloroethene	< 0.10400	0.20000	< 0.56	1.07	U, D	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.13400	1.0000	< 0.48	3.60	U, D	"	"	"	"	X
142-82-5	n-Heptane	< 0.12200	0.20000	< 0.50	0.82	U, D	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.10600	0.20000	< 0.43	0.82	U, D	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.094000	0.20000	< 0.43	0.91	U, D	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.094000	0.20000	< 0.43	0.91	U, D	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-0A-01	M0330	Air	12-Mar-13 12:07	12-Mar-13
SB65906-05				

Air Quality Analyses

Volatile Organics in Air Low Level — ppbv — Prepared 21-Mar-13 — Dilution: 2 — AirP — Can pressure: -18 — Can ID: 7644

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
79-00-5	1,1,2-Trichloroethane	< 0.13200	0.20000	< 0.72	1.09	U, D	EPA TO-15	21-Mar-13	krl	1306450	X
108-88-3	Toluene	< 0.086000	0.20000	< 0.32	0.75	U, D	"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.084000	0.20000	< 0.34	0.82	U, D	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.11800	0.20000	< 1.01	1.70	U, D	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.086000	0.20000	< 0.66	1.54	U, D	"	"	"	"	X
127-18-4	Tetrachloroethene	< 0.12200	0.20000	< 0.83	1.36	U, D	"	"	"	"	X
108-90-7	Chlorobenzene	< 0.12200	0.20000	< 0.56	0.92	U, D	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.094000	0.20000	< 0.65	1.37	U, D	"	"	"	"	
100-41-4	Ethylbenzene	< 0.13400	0.20000	< 0.58	0.87	U, D	"	"	"	"	X
179601-23-1	m,p-Xylene	< 0.21800	0.40000	< 0.95	1.73	U, D	"	"	"	"	X
75-25-2	Bromoform	< 0.092000	0.20000	< 0.95	2.07	U, D	"	"	"	"	X
100-42-5	Styrene	< 0.10600	0.20000	< 0.45	0.85	U, D	"	"	"	"	X
95-47-6	o-Xylene	< 0.12200	0.20000	< 0.53	0.87	U, D	"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.13200	0.20000	< 0.91	1.37	U, D	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.11200	0.20000	< 0.55	0.98	U, D	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	< 0.092000	0.20000	< 0.45	0.98	U, D	"	"	"	"	X
622-96-8	4-Ethyltoluene	< 0.11000	0.20000	< 0.54	0.98	U, D	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 0.078000	0.20000	< 0.38	0.98	U, D	"	"	"	"	X
91-20-3	Naphthalene	< 0.36600	1.0000	< 1.92	5.24	U, D	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.11000	0.20000	< 0.66	1.20	U, D	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.12400	0.20000	< 0.64	1.03	U, D	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.12200	0.20000	< 0.73	1.20	U, D	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.10400	0.20000	< 0.57	1.10	U, D	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.12400	0.20000	< 0.67	1.07	U, D	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.10600	0.20000	< 0.64	1.20	U, D	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.11200	0.20000	< 0.61	1.10	U, D	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.10600	0.20000	< 0.79	1.48	U, D	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.080000	0.20000	< 0.85	2.13	U, D	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*98*		*70-130 %*			"	"	"	"	

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SSDUP	M0330	Air	12-Mar-13 00:00	12-Mar-13
SB65906-06				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0676				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.41000**	0.10000	**2.03**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U UJ	"	"	"	"	X
67-64-1	Acetone	**8.8800**	0.50000	**21.10**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.15000**	0.10000	**0.84**	0.56		"	"	"	"	X
64-17-5	Ethanol	**7.9800**	0.50000	**15.05**	0.94	J	"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	**9.3000**	0.10000	**32.29**	0.35	J	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.070000	0.10000	< 0.54	0.77	U	"	"	"	"	X
75-15-0	Carbon disulfide	**1.1800**	0.50000	**3.67**	1.56	J	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	**0.45000**	0.10000	**1.82**	0.40	J	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**1.5700**	0.50000	**3.85**	1.23	J	"	"	"	"	X
78-93-3	2-Butanone (MEK)	**0.77000**	0.10000	**2.27**	0.29		"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**2.0100**	0.50000	**7.09**	1.76	J	"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U UJ	"	"	"	"	
67-66-3	Chloroform	**4.5100**	0.10000	**21.95**	0.49	J	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.053000	0.10000	< 0.16	0.29	U UJ	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	< 0.052000	0.10000	< 0.28	0.55	U	"	"	"	"	X
71-43-2	Benzene	**0.43000**	0.10000	**1.37**	0.32	J	"	"	"	"	X
56-23-5	Carbon tetrachloride	< 0.043000	0.10000	< 0.27	0.63	U	"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	**0.81000**	0.10000	**4.35**	0.54	J	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	< **0.22000** 0.22	~~0.10000~~	< **0.90**	~~0.41~~ 0.90	U	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**4.4200**	0.10000	**16.63**	0.38	J	"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-SSDUP	M0330	Air	12-Mar-13 00:00	12-Mar-13
SB65906-06				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -5 Can ID: 0676				
127-18-4	Tetrachloroethene	**0.18000**	0.10000	**1.22**	0.68		EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**1.0300**	0.10000	**4.47**	0.43	J	"	"	"	"	X
179601-23-1	m,p-Xylene	**5.5800**	0.20000	**24.19**	0.87	J	"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	**1.7700**	0.10000	**7.67**	0.43	J	"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.53000**	0.10000	**2.61**	0.49	J	"	"	"	"	X
622-96-8	4-Ethyltoluene	**0.78000**	0.10000	**3.83**	0.49	J	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**2.2200**	0.10000	**10.91**	0.49	J	"	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	**0.15000**	0.10000	**0.80**	0.54		"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	**0.14000**	0.10000	**0.77**	0.55	NJ	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*103*		*70-130 %*			"	"	"	"	

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1ADUP	M0330	Air	12-Mar-13 00:00	12-Mar-13
SB65906-07				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -1 Can ID: 7636				
115-07-1	Propene	< 0.084000	0.10000	< 0.14	0.17	U	EPA TO-15	21-Mar-13	krl	1306450	
75-71-8	Dichlorodifluoromethane (Freon12)	**0.45000**	0.10000	**2.23**	0.49		"	"	"	"	X
74-87-3	Chloromethane	< 0.093000	0.10000	< 0.19	0.21	U UJ	"	"	"	"	X
76-14-2	1,2-Dichlorotetrafluoroethane (Freon 114)	< 0.057000	0.10000	< 0.40	0.70	U	"	"	"	"	X
75-01-4	Vinyl chloride	< 0.064000	0.10000	< 0.16	0.26	U	"	"	"	"	X
106-99-0	1,3-Butadiene	< 0.055000	0.10000	< 0.12	0.22	U	"	"	"	"	X
74-83-9	Bromomethane	< 0.052000	0.10000	< 0.20	0.39	U UJ	"	"	"	"	X
75-00-3	Chloroethane	< 0.076000	0.10000	< 0.20	0.26	U UJ	"	"	"	"	X
67-64-1	Acetone	**3.2200**	0.50000	**7.65**	1.19		"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	**0.18000**	0.10000	**1.01**	0.56		"	"	"	"	X
64-17-5	Ethanol	**3.9400**	0.50000	**7.43**	0.94		"	"	"	"	
107-13-1	Acrylonitrile	< 0.064000	0.10000	< 0.14	0.22	U	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 0.073000	0.10000	< 0.29	0.40	U	"	"	"	"	X
75-09-2	Methylene chloride	< 0.062000	0.10000	< 0.22	0.35	U UJ	"	"	"	"	X
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	**0.070000**	0.10000	**0.54**	0.77	J	"	"	"	"	X
75-15-0	Carbon disulfide	< 0.057000	0.50000	< 0.18	1.56	U	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 0.042000	0.10000	< 0.17	0.40	U	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 0.049000	0.10000	< 0.20	0.40	U	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	< 0.049000	0.10000	< 0.18	0.36	U	"	"	"	"	X
67-63-0	Isopropyl alcohol	**0.46000**	0.50000	**1.13**	1.23	J J	"	"	"	"	X
78-93-3	2-Butanone (MEK)	**0.24000**	0.10000	**0.71**	0.29	J	"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 0.049000	0.10000	< 0.19	0.40	U	"	"	"	"	X
110-54-3	Hexane	**0.80000**	0.50000	**2.82**	1.76	J	"	"	"	"	X
141-78-6	Ethyl acetate	< 0.082000	0.10000	< 0.30	0.36	U	"	"	"	"	
67-66-3	Chloroform	< 0.045000	0.10000	< 0.22	0.49	U	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 0.053000	0.10000	< 0.16	0.29	U UJ	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.046000	0.10000	< 0.19	0.40	U	"	"	"	"	X
71-55-6	1,1,1-Trichloroethane	**0.060000**	0.10000	**0.33**	0.55	J	"	"	"	"	X
71-43-2	Benzene	**0.14000**	0.10000	**0.45**	0.32	J	"	"	"	"	X
56-23-5	Carbon tetrachloride	**0.060000**	0.10000	**0.38**	0.63	J	"	"	"	"	X
110-82-7	Cyclohexane	< 0.081000	0.10000	< 0.28	0.34	U	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 0.049000	0.10000	< 0.23	0.46	U	"	"	"	"	X
75-27-4	Bromodichloromethane	< 0.053000	0.10000	< 0.36	0.67	U	"	"	"	"	X
79-01-6	Trichloroethene	**0.34000**	0.10000	**1.83**	0.54	J	"	"	"	"	X
123-91-1	1,4-Dioxane	< 0.067000	0.50000	< 0.24	1.80	U	"	"	"	"	X
142-82-5	n-Heptane	**0.11000**	0.10000	**0.45**	0.41		"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 0.053000	0.10000	< 0.22	0.41	U	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 0.047000	0.10000	< 0.21	0.45	U	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 0.066000	0.10000	< 0.36	0.55	U	"	"	"	"	X
108-88-3	Toluene	**1.0300**	0.10000	**3.88**	0.38		"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 0.042000	0.10000	< 0.17	0.41	U	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.059000	0.10000	< 0.50	0.85	U	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 0.043000	0.10000	< 0.33	0.77	U	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
915206-1ADUP	M0330	Air	12-Mar-13 00:00	12-Mar-13
SB65906-07				

CAS No.	Analyte(s)	Result/Units	*RDL	Result ug/m³	*RDL	Flag	Method Ref.	Analyzed	Analyst	Batch	Cert.
Air Quality Analyses											
Volatile Organics in Air Low Level		ppbv	Prepared 21-Mar-13 Dilution: 1				Can pressure: -1 Can ID: 7636				
127-18-4	Tetrachloroethene	**0.070000**	0.10000	**0.47**	0.68	J	EPA TO-15	21-Mar-13	krl	1306450	X
108-90-7	Chlorobenzene	< 0.061000	0.10000	< 0.28	0.46	U	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 0.047000	0.10000	< 0.32	0.69	U	"	"	"	"	
100-41-4	Ethylbenzene	**0.14000**	0.10000	**0.61**	0.43		"	"	"	"	X
179601-23-1	m,p-Xylene	**0.62000**	0.20000	**2.69**	0.87		"	"	"	"	X
75-25-2	Bromoform	< 0.046000	0.10000	< 0.48	1.03	U	"	"	"	"	X
100-42-5	Styrene	< 0.053000	0.10000	< 0.23	0.43	U	"	"	"	"	X
95-47-6	o-Xylene	**0.18000**	0.10000	**0.78**	0.43		"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 0.066000	0.10000	< 0.45	0.69	U	"	"	"	"	X
98-82-8	Isopropylbenzene	< 0.056000	0.10000	< 0.28	0.49	U	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	**0.14000**	0.10000	**0.69**	0.49		"	"	"	"	X
622-96-8	4-Ethyltoluene	**0.080000**	0.10000	**0.39**	0.49	J	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	**0.37000**	0.10000	**1.82**	0.49		"	"	"	"	X
91-20-3	Naphthalene	< 0.18300	0.50000	< 0.96	2.62	U	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 0.055000	0.10000	< 0.33	0.60	U	"	"	"	"	X
100-44-7	Benzyl chloride	< 0.062000	0.10000	< 0.32	0.52	U	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 0.061000	0.10000	< 0.37	0.60	U	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 0.052000	0.10000	< 0.29	0.55	U	"	"	"	"	
99-87-6	4-Isopropyltoluene	< 0.062000	0.10000	< 0.33	0.54	U	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.053000	0.10000	< 0.32	0.60	U	"	"	"	"	X
104-51-8	n-Butylbenzene	< 0.056000	0.10000	< 0.31	0.55	U	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.053000	0.10000	< 0.39	0.74	U	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 0.040000	0.10000	< 0.43	1.07	U	"	"	"	"	X
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*97*		*70-130 %*			"	"	"	"	

Data Validation Services

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Phone 518-251-4429
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June 26, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil and Aqueous Samples
Chemtech SDG Nos. E1866, E1876, E1877, E1880, E1881, E1916 and E1927

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by Chemtech, that pertain to samples collected between 04/15/13 and 04/18/13 at the Former Lackawanna Incinerator site. Seven aqueous samples and a field duplicate were processed for TCL volatiles, TCL semivolatiles, TAL metals, total cyanide, and seven wet chemistry parameters. Five aqueous samples and a field duplicate were processed for TAL metals, seven wet chemistry parameters, and hardness. Forty-seven soil samples and four field duplicates were processed for TAL metals. Twenty-nine of those soils and a field duplicate were also processed for TCL semivolatiles, and five of them and a field duplicate were also processed for total cyanide and TOC. Rinse and trip blanks, and matrix spikes were also processed. The analytical methodologies are those of the USEPA SW846 6010B, 7470, 7471, 8260B, 8270C, 9012, ASTM, and Lloyd Kahn.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Preparation/Method/Trip Blanks
* Laboratory Control Samples (LCSs)
* Instrumental Tunes
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c). The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, most sample results are usable either as reported, or with minor qualification or edit to non-detection, thus meeting completeness requirements. The exceptions are that the 1,4-dioxane results are not usable in the samples due to poor response inherent with the methodology, and 4-chloroaniline results for the five samples reported in are rejected due to failure of that compound to recover during processing.

Copies of the laboratory sample identification summaries (Forms S-1) are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

Even if not specified below, all sample identifications referenced in this report are prefixed with "915206-".

Data Package Deliverables

The laboratory organic and wet chemistry report forms show incorrect reporting limits in the "Conc" results field. Those values should reflect the "LOQ/CRQL" concentrations as reporting limits.

The laboratory does not properly flag report metals Forms 1 to reflect the elements with associated outlying matrix spike, duplicate, or ICP serial dilution evaluations.

Blind Field Duplicates

Blind field duplicate evaluations were performed on SB-19-2-4, SD-08, SB-21(0-2), SW-06, MW-05, and SS-26. Correlations meet validation guidelines, with the following exceptions, results of which have been qualified as estimated in value in the indicated parent samples and their respective duplicates:

- arsenic, copper, silver, and zinc in SB-19-2-4
- aluminum, arsenic, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, vanadium, and zinc in SB-21(0-2)
- calcium, magnesium, and mercury in SS-26

Volatile Analyses by EPA 8260C

Results for sample analytes initially flagged by the laboratory with the "E" flag are derived from the dilution analyses of the samples, thus reflecting responses within the established range of the instrument.

Laboratory Control Samples (LCSs) show recoveries that are within the laboratory acceptance ranges. Surrogate recoveries are within required ranges. Instrument tunes meet protocol requirements. Blanks show no contamination affecting sample reported results.

All of the results for 1,4-dioxane are rejected due to very poor instrument response that is typical of that analyte.

The other calibration standards show acceptable responses, with the exception of those for the following, results for which are qualified as estimated in the indicated samples:

- acetone and cyclohexane (22%D and 27%D) in TRIPBLANK, 915206-MW-03A, 915206-MW-06 and 915206-RB041613
- cyclohexane (28%D) in TRIPBLANK (E1923), 915206-MW-02A, 915206-MW-05, 915206-MW-04, 915206-MW-08, 915206-MW-DUPLICATE-04, 915206-RB041713 and 915206-MW-07

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag.

TCL Semivolatiles by EPA 8270D

Surrogate and internal standard recoveries are within required ranges, and instrument tunes meet protocol requirements.

The detected results for diethylphthalate in the samples reported in SDG E1923 are considered contamination due to presence in the associated field blank, and have been edited to reflect non-detection.

Matrix spikes of SS-31 show acceptable recoveries, and seven elevated duplicate correlation. No qualification is indicated. The matrix spikes of SS-27 show acceptable recoveries and correlations. The following outlying matrix spike accuracy and precision values resulted in qualification of the listed analytes in the indicated parent sample:

SDG No.	Parent Sample	Analyte	%Recovery	%RPD
E1866	915206-SB-25(0-1)	fluoranthene	139	41
		pyrene	148	51
E1923	915206-MW-07	2,3,4,6-tetrachlorophenol	75 and 83	

The laboratory utilized a constant for the matrix spike duplicate correlation of 20%RPD; per the analytical method, they should develop lab-specific correlations.

4-Chloroaniline recovered below 10% in the LCS reported in SDG E1923. Therefore, results for that compound are rejected in the associated samples. Other Laboratory Control Samples (LCSs) show recoveries that are within the laboratory acceptance ranges.

The calibration standards show acceptable responses, with the exception of the following, the results for which are qualified as estimated in the indicated samples:

- 4,6-dinitrophenol and 4,6-dinitro-3-methylphenol (low RRF; 24%RSD) in samples reported in SDGs E1880 and E1927
- hexachlorocyclopentadiene (21%D) in 915206-SS-26, 915206-SS-DUPLICATE-02 and 915206-SS-27

Some of the samples were processed at dilution, resulting in proportionally elevated reporting limits for undetected analytes. SB-22(0-2) appears to be overly diluted.

The Tentatively Identified Compounds (TICs) that were reported with a CAS number should have been flagged by the laboratory with the "N" flag. TICs reported with the laboratory "A" and/or "B" flags are processing artifacts, and are disregarded and removed as sample components.

The TIC identifications were made and assigned by the software (using a quality of fit limit), apparently without the analyst interpretation. Therefore, some of the TICs are over-characterized; the sample component spectra do not match those of the standard very well, and should be edited to "unknown". Full validation would require review and re-reporting of those identifications by the laboratory.

TAL Metals and Total Cyanide Analyses by EPA 6010B, 7470/7471, and 9012

The metals matrix spikes of SW-08 show recoveries and correlations that are within the laboratory acceptance ranges. The other matrix spikes show recoveries and correlations within acceptance acceptance ranges, with the exception of those for the associated samples (those in the same SDGs) are qualified as estimated in value:

SDG No.	Parent Sample	Element	%Recovery
E1866	915206-SB-25(0-1)	antimony	31 and 31
E1877	915206-SB-19(2-4)	antimony	15 and 16
		cadmium	127 and 131
		chromium	132 and 134
		nickel	166 and 170
E1880	915206-MW-03A	barium	128 and 138
E1881—SB matrix	915206-SB-20(2-4)	beryllium	67 and 67
		cobalt	133 and 138
		selenium	68 and 69
		antimony	56 and 57
		sodium	58 and 58
E1881—SD matrix	915206-SD-08	antimony	64 and 65
E1923	915206-MW-07	iron	210 and 221
		aluminum	216 and 234
		chromium	129 and 133
		manganese	128 and 132
		potassium	148 and 154
E1927	915206-SS-27	antimony	45 and 49
		chromium	196 and 222
		nickel	213 and 241

Due to presence of the elements in the associated field blanks, the following detected results are suspect as external contamination, and have been edited to reflect non-detection:

- chromium in samples reported in SDG E1916
- aluminum in MW-05 and MW-DUPLICATE-04
- zinc in all samples reported in SDG E1923 except MW-04

The ICP serial dilution correlations of SW-08 fall within the validation action limit.

The following ICP serial dilution correlations fall above the validation action limit, and detected results for the listed elements are qualified as estimated in the indicated SDGs:

Parent Sample	Element	%Difference	Associated Samples
915206-SB-25(0-1)	aluminum	15	E1866
	barium	21	
	calcium	24	
	chromium	20	
	copper	23	
	iron	12	
	magnesium	24	
	manganese	22	
	potassium	18	
	zinc	12	
915206-SB-19(2-4)	calcium	13	E1877
	manganese	22	
	chromium	15	
	copper	11	
	iron	25	
	magnesium	16	
	zinc	18	
915206-SB-20(2-4)	aluminum	39	E1881—SB samples
	zinc	69	
	calcium	50	
	iron	15	
	magnesium	42	
	manganese	47	
915206-SD-08	aluminum	29	E1881—SD samples
	calcium	33	
	magnesium	32	
	manganese	38	
	potassium	26	
	sodium	44	
	chromium	29	
	zinc	31	
915206-MW-07	magnesium	19	E1923
	sodium	17	
	calcium	15	
915206-SS-27	lead	12	E1927

Calibration and low-level standard responses associated with the sample analyses are compliant. Blanks show no contamination above the reporting limit.

Wet Chemistry Analyses

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.

Hardness values reported for the samples in SDG E1916 are double the values supported by the raw data. They have been edited to reflect the correct values.

The nitrate and nitrite analyses of the samples reported in SDG E1923 were performed just past the allowable holding time, and have therefore been qualified as estimated in value, and may have a low bias.

Matrix spikes of cyanide, sulfide, chloride, nitrate, nitrite, and TOC in MW-03, those for cyanide in SW-08, and the matrix spikes of cyanide and TOC in SD-08, show good recoveries and correlations. The TOC laboratory duplicate of SD-10FP also shows an acceptable correlation.

TOC values reported with the laboratory "OR" flag are qualified as estimated, as they reflect responses above the linear range of the instrument.

Some of the chloride and TOC results are reported from dilution analyses.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-25(0-1)	E1866-01		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-25(1-2)	E1866-02		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-25(4-6)	E1866-03		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-25(6-8)	E1866-04		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-24(0-2)	E1866-05		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-24(2-4)	E1866-06		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-24(4-6)	E1866-07		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-24(6-8)	E1866-08		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-23(0-2)	E1866-09		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-23(2-4)	E1866-10		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-23(4-6)	E1866-11		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-23(6-8)	E1866-12		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-23	E1866-13		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-24	E1866-14		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-25	E1866-15		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-20	E1866-16					6010B, 7471A	Chemtech -SOP
915206-SS-21	E1866-17					6010B, 7471A	Chemtech -SOP
915206-SS-03	E1866-18					6010B, 7471A	Chemtech -SOP
915206-SS-04	E1866-19					6010B, 7471A	Chemtech -SOP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SS-19	E1877-01					6010B, 7471A	Chemtech -SOP
915206-SB-19(0-2)	E1877-02					6010B, 7471A	Chemtech -SOP
915206-SB-19(2-4)	E1877-03					6010B, 7471A	Chemtech -SOP
915206-SB-19(4-6)	E1877-06					6010B, 7471A	Chemtech -SOP
915206-SB-19(6-7)	E1877-07					6010B, 7471A	Chemtech -SOP
915206-SB-DUPLICATE-06	E1877-08					6010B, 7471A	Chemtech -SOP
915206-SD-12FP	E1877-09					6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-11FP	E1877-10					6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SD-10FP	E1877-11					6010B, 7471A	9012B, Chemtech -SOP, Lloyd Kahn
915206-SB-22(0-2)	E1877-12		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-22(2-4)	E1877-13		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-22(4-6)	E1877-14		8270D			6010B, 7471A	Chemtech -SOP
915206-SB-22(6-7)	E1877-15		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-22	E1877-16		8270D			6010B, 7471A	Chemtech -SOP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-MW-03A	E1880-01	8260-Low	8270D			6010B, 7470A	300, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D, SM5310B
915206-MW-06	E1880-02	8260-Low	8270D			6010B, 7470A	300, 9012B, SM2320 B, SM4500 S EorF, SM5210 B, SM5220 D, SM5310B
915206-RB041613	E1880-03	8260-Low	8270D			6010B, 7470A	9012B
TRIPBLANK	E1880-04	8260-Low					

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-21(0-2)	E1881-01					6010B, 7471A	Chemtech -SOP
915206-SB-21(2-4)	E1881-02					6010B, 7471A	Chemtech -SOP
915206-SB-20(0-2)	E1881-03					6010B, 7471A	Chemtech -SOP
915206-SB-20(2-4)	E1881-04					6010B, 7471A	Chemtech -SOP
915206-SB-DUPLICATE-07	E1881-07					6010B, 7471A	Chemtech -SOP
915206-SS-27	E1881-08		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-31	E1881-09		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-32	E1881-10		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-33	E1881-11		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-28	E1881-12		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-29	E1881-13		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-30	E1881-14		8270D			6010B, 7471A	Chemtech -SOP
915206-SD-08	E1881-15	6-17-13	8270D			6010B, 7471A	Chemtech -SOP, 9012B, Lloyd Kahn
915206-SD-09	E1881-18		8270D			6010B, 7471A	Chemtech -SOP, 9012B, Lloyd Kahn
915206-SD-DUPLICATE-02	E1881-19		8270D			6010B, 7471A	Chemtech -SOP, 9012B, Lloyd Kahn

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SW-05	E1916-01					6010B, 7470A	9012B
915206-SW-06	E1916-02					6010B, 7470A	9012B
915206-SW-07	E1916-03					6010B, 7470A	9012B
915206-SW-08	E1916-04					6010B, 7470A	9012B
915206-SW-09	E1916-07					6010B, 7470A	9012B
915206-SW-DUPLICATE-02	E1916-08					6010B, 7470A	9012B
915206-RB041813	E1916-09					6010B, 7470A	9012B

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Cover Page

Order ID : E1923

Project ID : LACKAWANNA INCINERATOR

Client : EA Engineering Science & Technology

Lab Sample Number	Client Sample Number
E1923-01	915206-MW-07
E1923-02	E1923-01MS
E1923-03	E1923-01MSD
E1923-04	915206-MW-02A
E1923-05	915206-MW-05
E1923-06	915206-MW-04
E1923-07	915206-MW-08
E1923-08	915206-MW-DUPLICATE-04
E1923-09	915206-RB041713
E1923-10	TRIPBLANK

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : Mildred V Reyes

Mildred V. Reyes, QA/QC Supervisor
2013.05.14 14:16:46 -05'00'

Date: 5/4/2013

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SS-26	E1927-01		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-DUPLICATE-02	E1927-02		8270D			6010B, 7471A	Chemtech -SOP
915206-SS-27	E1927-03		8270D			6010B, 7471A	Chemtech -SOP

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

August 12, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Samples
Chemtech SDG Nos. E2791, E2792, and E2816

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by Chemtech, that pertain to samples collected between 07/0113 and 07/02/13 at the Former Lackawanna Incinerator site. Fifty-two soil samples and three field duplicates were processed for TAL metals. Fifteen of those soils and one field duplicate were also processed for total cyanide. Rinse and sample matrix spikes were also processed. The analytical methodologies are those of the USEPA SW846 6010B, 7470, 7471, and 9012.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Method/Rinse Blanks
* Laboratory Control Samples (LCSs)
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c). The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, most sample results are usable either as reported, or with minor qualification or edit to non-detection. However, the results for silver in fourteen of the samples are rejected and not usable. Some of the samples exhibit significant matrix effects, and therefore many results are qualified as estimated in value and/or reported with elevated reporting limits.

Copies of the laboratory sample identification summaries (Forms S-1) and laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Data Package Deliverables

The laboratory does not properly flag report metals Forms 1 and QC Summary Form 9 to reflect the elements with associated outlying ICP serial dilution evaluations.

The laboratory has been requested to resubmit the data package E2791 to correct a discussion regarding metals matrix spikes (discussed below).

Blind Field Duplicates

Blind field duplicate evaluations were performed on SB-34(2-3),.SB-37(0-1), and SB-46(0-1). Correlations meet validation guidelines, with the following exceptions, results of which have been qualified as estimated in value in the indicated parent samples and their respective duplicates:

- lead (173%RPD, more than an order of magnitude) in SB-37(0-1)
- thallium (104%RPD) in SB-46(0-1)

TAL Metals Analyses by EPA Methods 6010B, 7470/7471

Matrix spike/duplicate evaluations were requested for sample SB-36(1-2). The laboratory processed and reported them, with apparent very poor accuracy and precision for the ICP metals (including no recovery for 12 of the analytes). The laboratory narrative listed the elements with recoveries and correlations that fall outside of the laboratory acceptance ranges, but missed the fact that the matrix spikes were not actually spiked with the spiking solution, and were in fact laboratory duplicates of the parent sample. It is a critical oversight in that lack of matrix spike recoveries mandates rejection of associated data. Those ICP matrix spikes have not been included in the data accuracy evaluation for this project. Accuracy and precision evaluation frequency requirements are met with the remaining matrix spike/duplicate evaluations discussed below.

Silver failed to recover in the matrix spikes of SB-46(0-1), and therefore the results reporting no detection of that element in fourteen of the associated samples are rejected. The associated samples are all of those reported in SDG E2816 except SB-44(0-1). Detected results for that element are qualified as estimated in value.

The matrix spikes of SB-37(0-1), SB-44(0-1), and SB-46(0-1) show other recoveries and correlations within acceptance acceptance ranges, with the exception of the following, results for which are qualified as estimated in the associated samples (those in the listed SDGs):

Affected SDG Nos/Samples	Parent Sample	Element	%Recoveries
E2791 and SB-46(0-1)	SB-46(0-1)	Selenium	74 and 73
		Antimony	65 and 68
		Cobalt	161 and 170
		Nickel	209 and 216
		Sodium	160 and 170
E2792	SB-37(0-1)	Antimony	26 and 26
		Silver	68 and 67
		Sodium	49 and 52
All in E2816 except SB-46(0-1)	SB-44(0-1)	Antimony	72 and 75
		Selenium	72 and 74

The ICP serial dilution evaluation of SB-36(1-2) shows numerous outlying correlations (15%D to 35%D). The elements exhibiting this matrix effect are all of those except the following: arsenic, cadmium antimony, beryllium, cobalt, lead, nickel, silver, sodium, thallium, and vanadium. Detected results of these elements in the samples reported in SDG D2791 have been qualified as estimated in value.

The following ICP serial dilution correlations fall above the validation action limit, and detected results for the listed elements are qualified as estimated in the indicated SDGs:

Affected SDG No/Samples	Parent Sample	Element	%Difference
SB-46(0-1)	SB-46(0-1)	Barium	12
		Potassium	46
		Sodium	254
E2792	SB-37(0-1)	Barium	12
		Calcium	15
		Chromium	18
		Iron	19
		Magnesium	12
		Manganese	18
		Zinc	12
		Potassium	14
All in E2816 except SB-46(0-1)	SB-44(0-1)	Calcium	13
		Chromium	13
		Iron	16
		Magnesium	11
		Manganese	15
		Potassium	14

Calibration and low-level standard responses associated with the sample analyses are compliant. Blanks associated with the samples show no contamination above the reporting limit.

Total Cyanide Analyses

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.

Cyanide matrix spikes of SB-36(1-2) and SS-36 show acceptable recoveries and duplicate correlations. Holding times were met, and blanks show no contamination.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and LABORATORY CASE NARRATIVES

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-34 (0-1)	E2791-01					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-34 (1-2)	E2791-02					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-34 (2-3)	E2791-03					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-34 (3-4)	E2791-04					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-35 (0-1)	E2791-05					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-35 (1-2)	E2791-06					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-35 (2-3)	E2791-07					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-35 (3-4)	E2791-08					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-36 (0-1)	E2791-09					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-36 (1-2)	E2791-10					6010B, 7471A	9012B, Chemtech - SOP
DUPLICATE-10	E2791-13					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-36 (2-3)	E2791-14					6010B, 7471A	9012B, Chemtech - SOP
915206-SB-36 (3-4)	E2791-15					6010B, 7471A	9012B, Chemtech -

							SOP
915206-SS-34	E2791-16					6010B, 7471A	9012B, Chemtech - SOP
915206-SS-35	E2791-17					6010B, 7471A	9012B, Chemtech - SOP
915206-SS-36	E2791-18					6010B, 7471A	9012B, Chemtech - SOP

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915206-SB-37(0-1)	E2792-01					6010B, 7471A	Chemtech -SOP
915206-SB-37(1-2)	E2792-04					6010B, 7471A	Chemtech -SOP
915206-SB-38(0-1)	E2792-05					6010B, 7471A	Chemtech -SOP
915206-SB-38(1-2)	E2792-06					6010B, 7471A	Chemtech -SOP
915206-SB-39(0-1)	E2792-07					6010B, 7471A	Chemtech -SOP
915206-SB-39(1-2)	E2792-08					6010B, 7471A	Chemtech -SOP
915206-SS-37	E2792-09					6010B, 7471A	Chemtech -SOP
915206-SS-38	E2792-10					6010B, 7471A	Chemtech -SOP
915206-SS-39	E2792-11					6010B, 7471A	Chemtech -SOP
915206-DUPLICATE-11	E2792-12					6010B, 7471A	Chemtech -SOP, 9012B
915206-SS-40	E2792-13					6010B, 7471A	Chemtech -SOP, 9012B
915206-SS-41	E2792-14					6010B, 7471A	Chemtech -SOP, 9012B
915206-SS-42	E2792-15					6010B, 7471A	Chemtech -SOP, 9012B
915206-FB-070113	E2792-16					6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-40(0-1)	E2792-17					7470A 6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-40(1-2)	E2792-18					7470A 6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-41(0-1)	E2792-19					7470A 6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-41(1-2)	E2792-20					7470A 6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-42(0-1)	E2792-21					7470A 6010B, 7471A,	Chemtech -SOP, 9012B
915206-SB-42(1-2)	E2792-22					7470A 6010B, 7471A, 7470A	Chemtech -SOP, 9012B

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

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915206-SB-43(0-1)	E2816-01					6010B, 7471A	Chemtech -SOP
915206-SB-43(1-2)	E2816-02					6010B, 7471A	Chemtech -SOP
915206-SB-44(0-1)	E2816-03					6010B, 7471A	Chemtech -SOP
915206-SB-44(1-2)	E2816-04					6010B, 7471A	Chemtech -SOP
915206-SB-45(0-1)	E2816-05					6010B, 7471A	Chemtech -SOP
915206-SB-45(1-2)	E2816-06					6010B, 7471A	Chemtech -SOP
915206-SB-46(0-1)	E2816-07					6010B, 7471A	Chemtech -SOP
915206-SB-46(1-2)	E2816-10					6010B, 7471A	Chemtech -SOP
915206-SB-47(0-1)	E2816-11					6010B, 7471A	Chemtech -SOP
915206-SB-47(1-2)	E2816-12					6010B, 7471A	Chemtech -SOP
915206-SB-48(0-1)	E2816-13					6010B, 7471A	Chemtech -SOP
915206-SB-48(1-2)	E2816-14					6010B, 7471A	Chemtech -SOP
915206-SS-39A	E2816-15					6010B, 7471A	Chemtech -SOP
915206-DUPLICATE-12	E2816-16					6010B, 7471A	Chemtech -SOP
915206-SS-43	E2816-17					6010B, 7471A	Chemtech -SOP
915206-SS-44	E2816-18					6010B, 7471A	Chemtech -SOP
915206-SS-45	E2816-19					6010B, 7471A	Chemtech -SOP
915206-SS-46	E2816-20					6010B, 7471A	Chemtech -SOP
915206-SS-47	E2816-21					6010B, 7471A	Chemtech -SOP
915206-SS-48	E2816-22					6010B, 7471A	Chemtech -SOP
915206-FB070213	E2816-23					6010B, 7471A, 7470A	Chemtech -SOP, 9012B

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2791
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
18 Solid samples were received on 07/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Mercury, Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils). The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis(915206-SB-36(1-2)S-Sample E2791-10) met criteria for all analytes except for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Potassium, Selenium, Silver, Sodium, Thallium and Vanadium.
The Matrix Spike Duplicate analysis(915206-SB-36(1-2)SD-Sample E2791-10) met criteria for all analytes except for Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Potassium, Selenium, Silver, Sodium, Thallium and Vanadium.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (915206-SB-36(1-2)L-Sample E2791-10) met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Copper, Iron, Magnesium, Manganese, Vanadium and Zinc.
Samples 915206-SB-34(1-2), 915206-SB-35(0-1), 915206-SB-35(1-2) and 915206-SB-35(2-3) were diluted due to high concentrations for Mercury.

E. Additional Comments:
The calibration, CCV07 (Run number LB66742) is failing marginally for Aluminum (110.1%). The QCs and Samples are not associated with this calibration.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2791
Test Name: Cyanide

A. Number of Samples and Date of Receipt:
18 Solid samples were received on 07/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Cyanide.

C. Analytical Techniques:
The analysis of Cyanide was based on method 9012B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2792
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
21 Solid samples were received on 07/02/2013.
1 Water sample was received on 07/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Mercury,Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils) and 3010 (waters).The analysis and digestion of Mercury was based on method 7470A. The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis(915206-SB-37(0-1)S-Sample E2792-01) met criteria for all samples except for Antimony and Cobalt.
The Matrix Spike Duplicate analysis(915206-SB-37(0-1)SD-Sample E2792-01) met criteria for all samples except for Antimony.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution(915206-SB-37(0-1)L-Sample E2792-01) met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Copper, Iron, Magnesium, Manganese and Zinc.

E. Additional Comments:
From LB66742, CCV07 failed marginally for Aluminum (110.1.%).

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2792
Test Name: Cyanide

A. Number of Samples and Date of Receipt:
21 Solid samples were received on 07/02/2013.
1 Water sample was received on 07/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Cyanide.

C. Analytical Techniques:
The analysis of Cyanide was based on method 9012B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2816
Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:
22 Solid samples were received on 07/03/2013.
1 Water sample was received on 07/03/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Metals ICP-TAL,Mercury.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils) and 3010 (waters).The analysis and digestion of Mercury was based on method 7470A. The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Samples 915206-SB-43(0-1), 915206-SB-43(1-2), 915206-SB-46(0-1), 915206-SB-46(1-2), 915206-SS-39A, 915206-DUPLICATE-12, 915206-SS-43 and 915206-SS-46 were diluted due to bad matrices and very high metal in the samples for Aluminum, Arsenic, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Sodium, Thallium, Vanadium and Zinc.
Samples 915206-SB-43(0-1) and 915206-SS-43 were diluted due high concentrations for Mercury.
Sample 915206-SB-48(0-1) was diluted due high concentrations for Iron.
The Blank Spike met criteria for all samples.
The Matrix Spike (915206-SB-44(0-1) S –Sample-03) analysis met criteria for all samples except for Beryllium.
The Matrix Spike Duplicate (915206-SB-44(0-1) SD –Sample03) analysis met criteria for all samples except for Beryllium.
The Matrix Spike (915206-SB-46(0-1) S –Sample-07) analysis met criteria for all samples except for Beryllium, Cobalt, Nickel, Silver and Sodium.
The Matrix Spike Duplicate (915206-SB-46(0-1) SD –Sample-07) analysis met criteria for all samples except for Beryllium, Cobalt, Nickel, Potassium, Silver and Sodium.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

The Serial Dilution (915206-SB-46(0-1)L) met criteria for all samples except for Barium and Potassium. The Serial Dilution (915206-SB-44(0-1)L)met criteria for all samples except for Calcium, Chromium, Iron, Magnesium and Manganese.

E. Additional Comments:

LB66836A -CCV12 is failing for Barium (89.9%),Magnesium. LB66970A- CCV08and CC09,CCV10 is failing for Potassium. CCV11 and CCV12 is failing for Aluminum and Potassium. LB66734A- CCV08,CCV09,CCV10 is failing for Potassium. CCV10 is also failing for Silver. CCV11 is failing for Aluminum and Silver.These CCVs are not associated with any samples.

LB66970A-CCB 10 is failing for Iron. This CCB is not associated with any samples.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E2816
Test Name: Cyanide

A. Number of Samples and Date of Receipt:
22 Solid samples were received on 07/03/2013.
1 Water sample was received on 07/03/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Cyanide, Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Cyanide.

C. Analytical Techniques:
The analysis of Cyanide was based on method 9012B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

September 20, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Samples
Chemtech SDG No. E3308

Dear Ms. Mokry:

Review has been completed for the data package noted above, generated by Chemtech, that pertains to samples collected 08/13/13 at the Former Lackawanna Incinerator site. Nineteen soil samples, one field duplicate, and a rinse blank were processed for TAL metals by USEPA SW846 methods 6010B and 7470/7471.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Method/Rinse Blanks
* Laboratory Control Samples (LCSs)
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c). The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, sample results are usable either as reported, or with minor qualification. There is no evidence of a matrix effect on analyte recoveries. Accuracy, precision, and completeness are acceptable.

Copies of the laboratory sample identification summary (Forms S-1) and laboratory case narrative are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Blind Field Duplicates

The blind field duplicate evaluation was performed on SB-50(0-1). Correlations meet validation guidelines, with the exceptions of those for cobalt and manganese (110%RPD and 60%RPD). Results for those two elements ha been qualified as estimated in value in the parent sample and the duplicate.

TAL Metals Analyses by EPA Methods 6010B, 7470/7471

The matrix spikes of SB-49-1) show recoveries and correlations within acceptance ranges, with the exception of those for antimony (34% and 35%). The results for that element are qualified as estimated in the project samples.

The ICP serial dilution evaluation of SB-49(0-1) shows correlations within the recommended limit.

Calibration and low-level standard responses associated with the sample analyses are compliant. Blanks associated with the samples show no contamination above the reporting limit.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and LABORATORY CASE NARRATIVE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-43(2-3)	E3308-01					6010B, 7471A	Chemtech -SOP
915206-SB-49(0-1)	E3308-02					6010B, 7471A	Chemtech -SOP
915206-SB-49(1-2)	E3308-05					6010B, 7471A	Chemtech -SOP
915206-SB-50(0-1)	E3308-06					6010B, 7471A	Chemtech -SOP
915206-SB-50(1-2)	E3308-07					6010B, 7471A	Chemtech -SOP
915206-DUPLICATE13	E3308-08					6010B, 7471A	Chemtech -SOP
915206-SB-51(0-1)	E3308-09					6010B, 7471A	Chemtech -SOP
915206-SB-51(1-2)	E3308-10					6010B, 7471A	Chemtech -SOP
915206-SB-52(0-1)	E3308-11					6010B, 7471A	Chemtech -SOP
915206-SB-52(1-2)	E3308-12					6010B, 7471A	Chemtech -SOP
915206-SB-53(0-1)	E3308-13					6010B, 7471A	Chemtech -SOP
915206-SB-53(1-2)	E3308-14					6010B, 7471A	Chemtech -SOP
915206-SB-54(0-1)	E3308-15					6010B, 7471A	Chemtech -SOP
915206-SB-54(1-2)	E3308-16					6010B, 7471A	Chemtech -SOP
915206-SS-49	E3308-17					6010B, 7471A	Chemtech -SOP
915206-SS-50	E3308-18					6010B, 7471A	Chemtech -SOP
915206-SS-51	E3308-19					6010B, 7471A	Chemtech -SOP
915206-SS-52	E3308-20					6010B, 7471A	Chemtech -SOP
915206-SS-53	E3308-21					6010B, 7471A	Chemtech -SOP
915206-SS-54	E3308-22					6010B, 7471A	Chemtech -SOP
915206-RINSATEBLANK	E3308-23					6010B, 7470A	

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E3308
Test Name: Mercury,Metals ICP-TAL

A. Number of Samples and Date of Receipt:
22 Solid samples were received on 08/14/2013.
1 Water sample was received on 08/14/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Mercury,Metals ICP-TAL.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils) and 3010 (waters).The analysis and digestion of Mercury was based on method 7470A. The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Samples 915206-SB-53(0-1), 915206-SB-53(1-2), 915206-SB-54(0-1) and 915206-SB-54(1-2) were diluted due to high concentrations for Iron. Sample 915206-SS-54 was diluted due to high concentrations for Iron, Copper .
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis (915206-SB-49(0-1)S)met criteria for all samples except for Antimony.
The Matrix Spike Duplicate analysis(915206-SB-49(0-1)SD) met criteria for all samples except for Antimony.
The Blank analysis did not indicate the presence of lab contamination.
The CCV06 is failing for Silver.The CCV07 is failing for Aluminum, Calcium, Iron, Magnesium, Silver, Sodium and Zinc in run number LB67327.
The CCV07 is failing for Barium and Sodium. CCV08 is failing for Aluminum in run number LB67343A but the samples were not analyzed with these calibration.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:
The CCV06 is failing for Silver.The CCV07 is failing for Aluminum, Calcium, Iron, Magnesium, Silver, Sodium and Zinc in run number LB67327.
The CCV07 is failing for Barium and Sodium. CCV08 is failing for Aluminum in run number LB67343A but the samples were not analyzed with these calibration.
The LLICV and LLCV are reported but it is not required for 6010B method.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature Mildred V Reyes

Mildred V. Reyes, QA/QC Supervisor
2013.08.26 12:50:43 -05'00'

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

December 4, 2013

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Samples
Chemtech SDG Nos. E4326 and R4327

Dear Ms. Mokry:

Review has been completed for the data packages noted above, generated by Chemtech, that pertain to samples collected between 10/29/13 and 10/31/13 at the Former Lackawanna Incinerator site. Thirty-one soil samples, two field duplicates, and a rinse blank were processed for total lead by USEPA SW846 method 6010B.

This DUSR report is generated from review of the summary form information, with full validation 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, using guidance from the USEPA Region 2 validation SOP HW-2a, the USEPA CLP National Functional Guidelines for Inorganic Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Preparation/Rinse Blanks
* Laboratory Control Samples (LCSs)
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c). The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, sample results are usable as reported. There is no evidence of a matrix effect on analyte recoveries. Accuracy, precision, and data completeness are acceptable.

Copies of the laboratory sample identification summaries and laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report are the client results tables.

Blind Field Duplicates

The blind field duplicate evaluations were performed on SB-A14-0-1 and SB-A4-0-1. Correlations meet validation guidelines.

Total Lead by EPA Method 6010B

The matrix spikes of SB-D7-0-1 and SB-C4-0-1 show recoveries and correlations within acceptance limits.

The ICP serial dilution evaluations of SB-D7-0-1 and SB-C4-0-1 show correlations within the recommended limit of 10%D.

Calibration and low-level standard responses associated with the sample analyses are compliant. Blanks associated with the samples show no contamination above the reporting limit.

An observed error on one of the LLCCV standard values recorded on the QC summary Forms 2a does not affect sample reported results.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
SB-C12-0-1	E4326-01					6010B	Chemtech -SOP
SB-K4-1-2	E4326-02					6010B	Chemtech -SOP
SB-H3-0-1	E4326-03					6010B	Chemtech -SOP
SB-A14-0-1	E4326-04					6010B	Chemtech -SOP
SB-DUPLICATE-02	E4326-05					6010B	Chemtech -SOP
SB-A12-0-1	E4326-06					6010B	Chemtech -SOP
SB-A8-0-1	E4326-07					6010B	Chemtech -SOP
SB-B7-0-1	E4326-08					6010B	Chemtech -SOP
SB-B7-2-3	E4326-09					6010B	Chemtech -SOP
SB-B5-0-1	E4326-10					6010B	Chemtech -SOP
SB-K2-1-2	E4326-11					6010B	Chemtech -SOP
SB-K2-2-3	E4326-12					6010B	Chemtech -SOP
SB-J1-0-1	E4326-13					6010B	Chemtech -SOP
SB-J1-1-2	E4326-14					6010B	Chemtech -SOP
SB-I2-0-1	E4326-15					6010B	Chemtech -SOP
SB-I2-1-2	E4326-16					6010B	Chemtech -SOP
SB-G2-0-1	E4326-17					6010B	Chemtech -SOP
SB-F1-2-3	E4326-18					6010B	Chemtech -SOP
SB-D3-1-1.6	E4326-19					6010B	Chemtech -SOP
SB-D7-0-1	E4326-20					6010B	Chemtech -SOP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
SB-C4-0-1	E4327-01					6010B	Chemtech -SOP
SB-A4-0-1	E4327-02					6010B	Chemtech -SOP
SB-A4-2-2.3	E4327-03					6010B	Chemtech -SOP
SB-DUPLICATE-01	E4327-04					6010B	Chemtech -SOP
SB-B3-0-1	E4327-05					6010B	Chemtech -SOP
SB-B3-1-2	E4327-06					6010B	Chemtech -SOP
SB-B3-3-4	E4327-07					6010B	Chemtech -SOP
SB-C2-1-2	E4327-08					6010B	Chemtech -SOP
SB-C2-3-4	E4327-09					6010B	Chemtech -SOP
SB-C2-4-5	E4327-10					6010B	Chemtech -SOP
SB-G4-0-1	E4327-11					6010B	Chemtech -SOP
SB-G4-1-2	E4327-12					6010B	Chemtech -SOP
SB-A10-0-1	E4327-13					6010B	Chemtech -SOP
RINSEBLANK	E4327-16					6010B	

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E4326
Test Name: Metals Group3

A. Number of Samples and Date of Receipt:
22 Solid samples were received on 11/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Metals Group3. This data package contains results for Metals Group3.

C. Analytical Techniques:
The analysis of Metals Group3 was based on method 6010B and digestion based on method 3050 (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:
LLICV & LLCCV is not required for 6010B analytical method.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature Mildred V Reyes Mildred V. Reyes, QA/QC Supervisor
2013.11.14 10:32:29 -05'00'

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # E4327
Test Name: Metals Group3

A. Number of Samples and Date of Receipt:
15 Solid samples were received on 11/02/2013.
1 Water sample was received on 11/02/2013.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Metals Group3. This data package contains results for Metals Group3.

C. Analytical Techniques:
The analysis of Metals Group3 was based on method 6010B and digestion based on method 3050 (soils) and 3010 (waters).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate (MW-11IMSD) analysis did not meet criteria for all samples.
The Matrix Spike (MW-11IMS) analysis did not meet criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:
LLICV & LLCCV is not required for 6010B analytical method.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature Mildred V Reyes Mildred V. Reyes, QA/QC Supervisor
2013.11.14 16:27:53 -05'00'

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

March 17, 2014

Lynette Mokry
EA Science and Technology
6712 Brooklawn Parkway Suite 104
Syracuse, NY 13211

RE: **D**ata **U**sability **S**ummary **R**eport (DUSR) for the Former Lackawanna Incinerator Site
Soil Samples
Chemtech SDG Nos. F1488 and F1499

Dear Ms. Mokry:

Review has been completed for the data package noted above, generated by Chemtech, that pertains to samples collected 02/24/14 at the Former Lackawanna Incinerator site. Twenty-four soil samples, two field duplicates, and a rinse blank were processed for TAL metals by USEPA SW846 methods 6010B and 7470/7471.

This DUSR report is generated from review of the summary form information, with full validation review of sample raw data, and limited review of associated QC raw data. The reported summary forms have been reviewed for application of validation qualifiers, using guidance from the USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, the specific laboratory methodologies, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Matrix Spike/Laboratory Duplicate Evaluations
* Blind Field Duplicate Evaluations
* Calibration/Method/Rinse Blanks
* Laboratory Control Samples (LCSs)
* Calibration Standards
* Serial Dilution Evaluations
* Instrument Performance
* 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 level review, as discussed in NYS DER-10 Appendix B section 2.0 (c). The laboratory QC forms illustrating the excursions can be found within the laboratory data packages.

In summary, sample results are usable either as reported, or with minor qualification. There is evidence of a matrix effect on analyte recoveries. Accuracy is generally acceptable, precision data are good, and data meet completeness requirements.

Copies of the laboratory sample identification summaries (Forms S-1) and laboratory case narratives are attached to this text, and should be reviewed in conjunction with this report. Also included with the report is the client results table, edited to reflect the qualifications recommended within this report.

All sample identifications referenced in this report are prefixed with "915206-".

Chains-of-Custody

There is no date on the relinquish entries. This was not noted on the laboratory Appendix A checklist documentation, or elsewhere in the data package.

Two field duplicates were entered onto the custody form reported in G1489, but only one was reported. This discrepancy was not discussed or denoted by the laboratory in the data package.

Uninitialed scratchovers and writeovers were observed, including a laboratory receive date.

Blind Field Duplicates

The blind field duplicate evaluation was performed on SS-55-20140224 and SB-58(2-3). Correlations meet validation guidelines, with the exceptions of those for chromium and sodium (51%RPD and 68%RPD) in SS-55-20140224. Results for those two elements have been qualified as estimated in value in the parent sample and the duplicate.

TAL Metals Analyses by EPA Methods 6010B, 7470/7471

The following matrix spikes/duplicates show recoveries and/or correlations outside the recommended limits, indicating a matrix effect on analyte recovery from the samples, and results for the listed elements are qualified as estimated in the samples reported in the indicated SDGs:

SDG No.	Parent Sample	Element	%Recovery
F1488—"SB" samples	SB-56(1-2)	Antimony	27 and 27
F1488—"SS" samples	SS-56	Antimony	35 and 35
		Copper	526 and 545
F1489	SB-58(2-3)	Antimony	39 and 39
		Cadmium	126 and 126
		Nickel	129 and 128

The following ICP serial dilution evaluations show elevated correlations, and therefore results for those elements in the indicated samples have been qualified as estimated in value. A matrix effect that suppresses analyte response is indicated:

Parent Sample	Element	%Difference	Associated Samples
SB-56(1-2)	Aluminum	17	F1488—"SB" samples
	Barium	20	
	Calcium	23	
	Chromium	24	
	Copper	30	
	Magnesium	22	
	Manganese	31	
SS-56	Aluminum	13	F1488—"SS" samples
	Barium	17	
	Calcium	17	
	Chromium	21	
	Copper	20	
	Magnesium	18	
	Manganese	25	
	Potassium	13	
SB-58(1-2)	Aluminum	12	F1489
	Barium	18	
	Calcium	20	
	Chromium	19	
	Copper	24	
	Magnesium	19	
	Manganese	25	
	Potassium	14	

Calibration and low-level standard responses associated with the sample analyses are compliant. Blanks associated with the samples show no contamination above the reporting limit.

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

Very truly yours,

Judy Harry

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected. The associated reported quantitation limit is an estimate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The analyte may or may not be present.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and LABORATORY CASE NARRATIVES

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sampl ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SS-55	F1488-01					6010B, 7471A	Chemtech -SOP
915206-SS-56	F1488-02					6010B, 7471A	Chemtech -SOP
915206-SS-57	F1488-05					6010B, 7471A	Chemtech -SOP
915206-SS-58	F1488-06					6010B, 7471A	Chemtech -SOP
915206-SS-59	F1488-07					6010B, 7471A	Chemtech -SOP
915206-SS-60	F1488-08					6010B, 7471A	Chemtech -SOP
915206-SS-DUPLICATE 022414	F1488-09					6010B, 7471A	Chemtech -SOP
915206-SB-55(0-1)	F1488-10					6010B, 7471A	Chemtech -SOP
915206-SB-55(1-2)	F1488-11					6010B, 7471A	Chemtech -SOP
915206-SB-55(2-3)	F1488-12					6010B, 7471A	Chemtech -SOP
915206-SB-55(10-11)	F1488-13					6010B, 7471A	Chemtech -SOP
915206-SB-56(0-1)	F1488-14					6010B, 7471A	Chemtech -SOP
915206-SB-56(1-2)	F1488-15					6010B, 7471A	Chemtech -SOP
915206-SB-56(2-3)	F1488-18					6010B, 7471A	Chemtech -SOP
915206-SB-56(3-4)	F1488-19					6010B, 7471A	Chemtech -SOP
915206-SB-57(0-1)	F1488-20					6010B, 7471A	Chemtech -SOP
915206-SB-57(1-2)	F1488-21					6010B, 7471A	Chemtech -SOP
915206-SB-57(2-3)	F1488-22					6010B, 7471A	Chemtech -SOP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORM S-I

SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

NYSDEC Sample ID/Code	Laboratory Sample ID/Code	VOA GC/MS (Method #)	BNA GC/MS (Method #)	VOA GC (Method #)	Pest PCBs (Method #)	Metals (Method #)	Other (Method #)
915206-SB-58(0-1)	F1489-01					6010B, 7471A	Chemtech -SOP
915206-SB-58(1-2)	F1489-02					6010B, 7471A	Chemtech -SOP
915206-SB-58(2-3)	F1489-05					6010B, 7471A	Chemtech -SOP
915206-SB-DUPLICATE01022414	F1489-06					6010B, 7471A	Chemtech -SOP
915206-SB-59(0-1)	F1489-07					6010B, 7471A	Chemtech -SOP
915206-SB-59(1-2)	F1489-08					6010B, 7471A	Chemtech -SOP
915206-SB-DUPLICATE02022414	F1489-09					6010B, 7471A	Chemtech -SOP
915206-SB-60(0-1)	F1489-10					6010B, 7471A	Chemtech -SOP
915206-SB-60(1-2)	F1489-11					6010B, 7471A	Chemtech -SOP
915206-RB-022414	F1489-12					6010B, 7470A	

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # F1488
Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:
22 Solid samples were received on 02/25/2014.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Metals ICP-TAL,Mercury.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils). The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (915206-SS-56MS) analysis met criteria for all samples except for Antimony, Cadmium, Cobalt, Copper and Thallium.
The Matrix Spike (915206-SB-56(1-2)MS) analysis met criteria for all samples except for Antimony and Cadmium.
The Matrix Spike Duplicate (915206-SS-56MSD) analysis met criteria for all samples except for Antimony, Cadmium, Cobalt, Copper, Selenium and Thallium.
The Matrix Spike Duplicate (915206-SB-56(1-2)MSD) analysis met criteria for all samples except for Antimony, Cadmium and Thallium.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (915206-SS-56L) met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Copper, Magnesium, Manganese and Potassium.
The Serial Dilution (915206-SB-56(1-2L) met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Copper, Magnesium, Manganese and Vanadium.
Samples 915206-SS-55, 915206-SS-DUPLICATE022414, 915206-SB-55(0-1) and 915206-SB-55(2-3) were diluted due to high concentrations of Iron.

E. Additional Comments:
LLICV and LLCCV are not required for 6010B method.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature Mildred V Reyes Mildred V. Reyes, QA/QC Supervisor
2014.03.10 11:42:55 -05'00'

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

EA Engineering Science & Technology
Project Name: LACKAWANNA INCINERATOR
Project # N/A
Chemtech Project # F1489
Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:
11 Solid samples were received on 02/25/2014.
1 Water sample was received on 02/25/2014.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Mercury, Metals ICP-TAL and METALS-TAL. This data package contains results for Metals ICP-TAL,Mercury.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils) and 3010 (waters).The analysis and digestion of Mercury was based on method 7470A. The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis(SB15-5.5-6.0-022514DUP) met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Magnesium, Manganese, Potassium and Sodium.
The Matrix Spike(915206-SB-58(1-2)MS) analysis met criteria for all samples except for Antimony, Cobalt, Cadmium, Thallium.
The Matrix Spike(SB15-5.5-6.0-022514MS) analysis did not meet criteria for all samples except for Calcium, Magnesium, Manganese, Sodium.
The Matrix Spike Duplicate(915206-SB-58(1-2)MSD) analysis met criteria for all samples except for Antimony, Cadmium, , Cobalt, Lead, Nickel, Thallium .
The Matrix Spike Duplicate(SB15-5.5-6.0-022514MSD) analysis did not meet criteria for all samples except for Calcium, Chromium, Magnesium, Manganese, Sodium.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (915206-SB-58(1-2)L)met criteria for all samples except for Aluminum, Barium, Calcium, Chromium, Copper, Magnesium and Manganese.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_ Mildred V. Reyes, QA/QC Supervisor 2014.03.07 13:41:57 -05'00'